

NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

July 1, 1979 — December 31, 1979

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PREFACE

This is the tenth volume of issuances (1 870) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Appeal Boards, Atomic Safety and Licensing Boards, and Administrative Law Judge. It covers the period from July 1, 1979 to December 31, 1979.

Atomic Safety and Licensing Boards are authorized by Section 191 of the Atomic Energy Act of 1954. These Boards, comprised of three members conduct adjudicatory hearings on applications to construct and operate nuclear power plants and related facilities and issue initial decisions which, subject to internal review and appellate procedures, become the final Commission action with respect to those applications. Boards are drawn from the Atomic Safety and Licensing Board Panel, comprised of lawyers, nuclear physicists and engineers, environmentalists, chemists, and economists. The Atomic Energy Commission first established Licensing Boards in 1962 and the Panel in 1967.

Beginning in 1969, the Atomic Energy Commission authorized Atomic Safety and Licensing Appeal Boards to exercise the authority and perform the review functions which would otherwise have been exercised and performed by the Commission in facility licensing proceedings. In 1972, that Commission created an Appeal Panel, from which are drawn the Appeal Boards assigned to each licensing proceeding. The functions performed by both Appeal Boards and Licensing Boards were transferred to the Nuclear Regulatory Commission by the Energy Reorganization Act of 1974. Appeal Boards represent the final level in the administrative adjudicatory process to which parties may appeal. Parties, however, are permitted to seek discretionary Commission review of certain board rulings. The Commission also may decide to review, on its own motion, various decisions or actions of Appeal Boards.

The Commission also has an Administrative Law Judge appointed pursuant to the Administrative Procedure Act, who presides over proceedings as directed by the Commission.

This volume is made up of pages from the six monthly issues of the Nuclear Regulatory Commission publication *Nuclear Regulatory Commission Issuances (NRCI)* for this period, arranged in chronological order. Cross references in the text and indexes are to the NRCI page numbers which are the same as the page numbers in this publication.

Issuances are referred to as follows: Commission--CLI, Atomic Safety and Licensing Appeal Boards--ALAB, Atomic Safety and Licensing Boards--LBP, Administrative Law Judge--ALJ, Directors Denial--DD, and Denial of Petition for Rulemaking--DPRM.

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or to have any independent legal significance.

CONTENTS

Issuances of the Nuclear Regulatory Commission

CAROLINA POWER AND LIGHT COMPANY (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4) Dockets 50-400, 50-401, 50-402, 50-403 Order, CLI-79-10, November 5, 1979.....	675
FLORIDA POWER AND LIGHT COMPANY (St. Lucie Plant, Units 1 and 2) Dockets 50-335A and 50-389A (Turkey Point Plant, Units 3 and 4) Dockets 50-250A and 50-251A Order, CLI-79-12, December 21, 1979.....	767
METROPOLITAN EDISON COMPANY (Three Mile Island Nuclear Station, Unit 1), Docket 50-289 Order and Notice of Hearing, CLI-79-8, August 9, 1979.....	141
NORTHERN INDIANA PUBLIC SERVICE COMPANY (Bailly Generating Station, Nuclear-1) Docket 50-367 Memorandum and Order, CLI-79-11, December 12, 1979.....	733
OFFSHORE POWER SYSTEMS (Floating Nuclear Power Plants), Docket STN 50-437 Memorandum and Order, CLI-79-9, September 14, 1979.....	257

Issuances of the Atomic Safety and Licensing Appeal Boards

ALLEGHENY ELECTRIC COOPERATIVE, INC. (Susquehanna Steam Electric Station, Units 1 and 2), Dockets 50-387 and 50-388 Memorandum and Order, ALAB-563, September 19, 1979.....	449
CAROLINA POWER AND LIGHT COMPANY (H.B. Robinson, Unit 2), Docket 50-261 Decision, ALAB-569, October 31, 1979.....	557
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), Dockets 50-346A, 50-500A and 50-501A Decision, ALAB-560, September 6, 1979.....	265

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY et al. (Perry Nuclear Power Plant, Units 1 and 2), Dockets 50-440A and 50-441A Decision, ALAB-560, September 6, 1979.....	265
CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. (Indian Point Station, Units 1, 2, and 3), Docket 50-3 and 50-247 Memorandum, ALAB-561, September 6, 1979.....	410
FLORIDA POWER AND LIGHT COMPANY (St. Lucie Nuclear Power Plant, Unit 2), Docket 50-389 Memorandum and Order, ALAB-553, July 11, 1979.....	12
HOUSTON LIGHTING AND POWER COMPANY (Allens Creek Nuclear Generating Station, Unit 1), Docket 50-466 Memorandum and Order, ALAB-564, September 19, 1979..... Memorandum, ALAB-565, October 1, 1979.....	451 521
METROPOLITAN EDISON COMPANY, et al. (Three Mile Island Nuclear Station, Unit 2) Docket 50-320 Decision, ALAB-562, September 10, 1979..... Memorandum, ALAB-566, October 11, 1979..... Memorandum and Order, ALAB-570, November 2, 1979.....	437 527 679
NORTHERN STATES POWER COMPANY (MINNESOTA) AND NORTHERN STATES POWER COMPANY (WISCONSIN) (Tyronne Energy Park, Unit 1), Docket STN-50-484 Decision, ALAB-562, September 10, 1979.....	437
PENNSYLVANIA POWER AND LIGHT COMPANY (Susquehanna Steam Electric Station, Units 1 and 2), Dockets 50-387 and 50-388 Memorandum and Order, ALAB-563, September 19, 1979.....	449
PHILADELPHIA ELECTRIC COMPANY, et al. (Peach Bottom Atomic Power Station, Units 2 and 3), Dockets 50-277 and 50-278 Decision, ALAB-562, September 10, 1979..... Memorandum, ALAB-566, October 11, 1979.....	437 527
POWER AUTHORITY OF THE STATE OF NEW YORK (Indian Point Station, Units 1, 2, and 3), Docket 50-286 Memorandum, ALAB-561, September 6, 1979.....	410

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al.	
(Seabrook Station, Units 1 and 2),	
Dockets 50-443 and 50-444	
Memorandum and Order, ALAB-557, August 6, 1979.....	153
Memorandum, ALAB-561, September 6, 1979.....	410
PUBLIC SERVICE COMPANY OF OKLAHOMA, et al.	
(Black Fox Station, Units 1 and 2)	
Dockets STN-50-556 and STN-50-557	
Decision, ALAB-573, December 7, 1979	775
PUBLIC SERVICE ELECTRIC AND GAS COMPANY	
(Hope Creek Generating Station, Units 1 and 2),	
Dockets 50-354 and 50-355	
Decision, ALAB-562, September 10, 1979.....	437
Memorandum, ALAB-566, October 11, 1979.....	527
PUGET SOUND POWER AND LIGHT COMPANY, et al.	
(Skagit Nuclear Power Project, Units 1 and 2),	
Dockets 50-522 and 50-523	
Memorandum and Order, ALAB-552, July 9, 1979	1
Memorandum and Order, ALAB-556, July 30, 1979	30
Decision, ALAB-559, August 31, 1979.....	162
Memorandum and Order, ALAB-572, November 20, 1979.....	693
RADIATION TECHNOLOGY, INC.	
(Lake Denmark Road, Rockaway, New Jersey 07866),	
Byproduct Material License No. 29-13613-02	
Decision, ALAB-567, October 16, 1979.....	533
ROCHESTER GAS AND ELECTRIC CORPORATION, et al.	
(Sterling Power Project, Nuclear Unit 1),	
Docket STN-50-485	
Decision, ALAB-562, September 10, 1979.....	437
Memorandum, ALAB-566, October 11, 1979.....	527
TENNESSEE VALLEY AUTHORITY	
(Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B)	
Dockets STN-50-518, STN-50-519, STN-50-520, and STN-50-521	
Decision, ALAB-554, July 11, 1979	15
Memorandum and Order, ALAB-558, August 14, 1979.....	158
TOLEDO EDISON COMPANY	
(Davis-Besse Nuclear Power Station, Units 1, 2, and 3)	
Dockets 50-346A, 50-500A, and 50-501A	
Decision, ALAB-560, September 6, 1979.....	265
VIRGINIA ELECTRIC AND POWER COMPANY	
(North Anna Nuclear Power Station, Units 1 and 2)	
Dockets 50-338 and 50-339	

Memorandum and Order, ALAB-555, July 13, 1979	23
Memorandum and Order, ALAB-568, October 29, 1979.....	554
WASHINGTON PUBLIC POWER SUPPLY SYSTEM	
(WPPSS Nuclear Project No. 2)	
Docket 50-397	
Memorandum, ALAB-571, November 14, 1979	687

Issuances of the Atomic Safety and Licensing Boards

ALLEGHENY ELECTRIC COOPERATIVE, INC.	
(Susquehanna Steam Electric Station, Units 1 and 2)	
Dockets 50-387 and 50-388	
Memorandum and Order Concerning Class 9 Accident	
Contention, LBP-79-29, October 19, 1979.....	586
Memorandum and Order on Discovery Motions (II),	
LBP-79-31, October 30, 1979.....	597
CAROLINA POWER AND LIGHT COMPANY	
(Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4)	
Dockets 50-400, 50-401, 50-402, and 50-403	
Supplemental Initial Decision (Construction	
Permit), LBP-79-19, July 13, 1979	37
CINCINNATI GAS AND ELECTRIC COMPANY, et al.	
(William H. Zimmer Nuclear Station)	
Docket No. 50-358 OL	
Memorandum and Order Admitting New Contentions,	
LBP-79-22, August 7, 1979	213
Docket No. 50-358 OL, 70-2838	
(Materials License SNM-1823)	
Memorandum and Order Denying Motion to Delay	
Delivery of Fuel to the Site, LBP-79-24,	
August 15, 1979.....	226
CONSUMERS POWER COMPANY	
(Palisades Nuclear Plant)	
Docket 50-255 SP	
Special Prehearing Conference Order, LBP-79-20, July 23, 1979 ...	108
FLORIDA POWER AND LIGHT COMPANY	
(Turkey Point Nuclear Generating Station, Units 3 and 4),	
Dockets 50-250 (SP) and 50-251 (SP)	
(Proposed Amendments to Facility Operating License	
to Permit Steam Generator Repairs)	
Order Ruling on the Petition of Mark P. Oncavage,	
LBP-79-21, August 3, 1979	183

GENERAL ELECTRIC COMPANY	
(GE Test Reactor, Vallecitos Nuclear Center), Dockets 50-70 and 70-754	
Memorandum and Order, LBP-79-28, October 9, 1979	578
HOUSTON LIGHTING AND POWER COMPANY, et al.	
(South Texas Project, Units 1 and 2), Dockets 50-498A and 50-499A	
Order Regarding Motions Based Upon Decision of United States District Court, LBP-79-27, October 5, 1979	563
Order Granting Production of Draft Testimony of Expert Witness, LBP-79-30, October 23, 1979	594
METROPOLITAN EDISON COMPANY	
(Three Mile Island Nuclear Station, Unit 1) Docket 50-289 (Restart)	
First Special Prehearing Conference Order, LBP-79-34, December 18, 1979	828
PACIFIC GAS AND ELECTRIC COMPANY	
(Diablo Canyon Nuclear Power Plant, Units 1 and 2), Dockets 50-275 OL and 50-323 OL	
Partial Initial Decision (Operating Licensing Proceedings), LBP-79-26, September 27, 1979	453
PENNSYLVANIA POWER AND LIGHT COMPANY	
(Susquehanna Steam Electric Station, Units 1 and 2), Dockets 50-387 and 50-388	
Memorandum and Order Concerning Class 9 Accident Contention, LBP-79-29, October 19, 1979.	586
Memorandum and Order on Discovery Motions (II), LBP-79-31, October 30, 1979.	597
PHILADELPHIA ELECTRIC COMPANY	
(Fulton Generating Station, Units 1 and 2), Dockets 50-463 and 50-464	
Memorandum and Order Repetition to Terminate Docket and to Quash Preapplication and Early Review of Site Suitability, LBP-79-23, August 8, 1979.	220
PORTLAND GENERAL ELECTRIC COMPANY, et al.	
(Trojan Nuclear Plant) Docket 50-344 (Control Building)	
Modification of Order Permitting Interim Operation of Trojan Nuclear Plant, LBP-79-32, November 30, 1979	699

SACRAMENTO MUNICIPAL UTILITY DISTRICT	
(Rancho Seco Nuclear Generating Station)	
Docket 50-312 SP	
Referral of a Licensing Board Ruling to the Atomic Safety and Licensing Appeal Board, LBP-79-33, December 14, 1979	821
TEXAS UTILITIES GENERATING COMPANY, et al.	
(Comanche Peak Steam Electric Station, Units 1 and 2), Dockets 50-445A and 50-446A	
Order Regarding Motions Based Upon Decision of United States District Court, LBP-79-27, October 5, 1979	563
Order Granting Production of Draft Testimony of Expert Witness, LBP-79-30, October 23, 1979	594
VIRGINIA ELECTRIC AND POWER COMPANY (VEPCO)	
(North Anna Power Station, Units 1 and 2), Dockets 50-338-SP and 50-339-SP	
Proposed Amendment to Operating License NPF-4 (Order Granting VEPCO's Motion for Summary Disposition, LBP-79-25, August 25, 1979	234

Issuances of the Directors Denials

COMMONWEALTH EDISON COMPANY	
(LaSalle County Station, Units 1 and 2)	
Dockets 50-373 and 50-374 (10 CFR 2.206)	
Directors Denial, DD-79-23, December 4, 1979	859
GEORGIA POWER COMPANY	
(Alvin W. Vogtle Nuclear Plant, Units 1 and 2), Dockets 50-424 and 425 (10 CFR 2.206)	
Director's Decision, DD-79-18, October 12, 1979	617
IOWA ELECTRIC LIGHT & POWER COMPANY, et al.	
(Duane Arnold Energy Center)	
Docket 50-331 (10 CFR 2.206)	
Director's Decision, DD-79-12, August 7, 1979	249
KANSAS GAS AND ELECTRIC COMPANY	
(Wolf Creek Generating Station, Unit 1), Docket STN 50-482 (10 CFR 2.206)	
Director's Denial, DD-79-11, July 12, 1979	136
MAINE YANKEE ATOMIC POWER COMPANY	
(Maine Yankee Atomic Power Plant), Operating License No. DPR-36 (10 CFR 2.206)	
Director's Decision, DD-79-15, September 27, 1979	511

NEW ENGLAND POWER COMPANY
 (NEP-1 and NEP-2),
 Dockets STN-568 and STN-569 (10 CFR 2.206)
 Director's Decision, DD-79-13, August 24, 1979..... 251

PHILADELPHIA ELECTRIC COMPANY
 (Limerick Nuclear Generating Station Units 1 and 2),
 Dockets 50-352 and 50-353 (10 CFR 2.206)
 Director's Decision, DD-79-16, October 9, 1979..... 609

PORTLAND GENERAL ELECTRIC COMPANY
 (Trojan Nuclear Power Plant),
 Docket 50-344 (10 CFR 2.206)
 Director's Decision, DD-79-14, September 10, 1979..... 509

PUBLIC SERVICE COMPANY OF INDIANA, INC.
 (Marble Hill Nuclear Generating Station, Units 1 and 2),
 Dockets STN 50-546 and STN 50-547 (10 CFR 2.206)
 Director's Decision, DD-79-10, July 6, 1979 129
 Director's Decision, DD-79-17, October 11, 1979..... 613
 Director's Decision, DD-79-21, November 27, 1979..... 717

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al.
 (Seabrook Station, Units 1 and 2)
 Dockets 50-443 and 50-444 (10 CFR 2.206)
 Director's Decision, DD-79-20, November 16, 1979..... 703

VIRGINIA ELECTRIC AND POWER COMPANY
 (North Anna Power Station, Units 1 and 2, and
 Surry Power Station, Units 1 and 2),
 Dockets 50-338/339 and 50-280/281 (10 CFR 2.206)
 Director's Decision, DD-79-24, December 20, 1979 862
 (Surry Power Station, Units 1 and 2),
 Dockets 50-280 and 50-281 (10 CFR 2.206)
 Director's Decision, DD-79-19, October 24, 1979..... 625

WABASH VALLEY POWER ASSOCIATION, INC.
 (Marble Hill Nuclear Generating Station, Units 1 and 2),
 Dockets STN 50-546 and STN 50-547 (10 CFR 2.206)
 Director's Decision, DD-79-10, July, 1979..... 129
 Director's Decision, DD-79-17, October 11, 1979..... 613
 Director's Decision, DD-79-21, November 27, 1979..... 717

WISCONSIN ELECTRIC POWER COMPANY
 (Point Beach Nuclear Plant, Unit 1)
 Docket 50-266 (10 CFR 2.206)
 Director's Decision, DD-79-22, November 30, 1979..... 728

Issuances of the Denial of Petition For Rule Making

CHEM-NUCLEAR SYSTEMS, INC.
Docket PRM-150-1
Denial of Petition For Rulemaking, DPRM-79-7
December 11, 1979 865

LOUIS RAY URCIUOLO
Docket PRM-20-12,
Denial of Petition For Rulemaking, DPRM-79-5,
September 26, 1979 515

NONDESTRUCTIVE TESTING MANAGEMENT ASSOCIATION
Docket PRM-7-1
Denial of Petition For Rulemaking, DPRM-79-4,
August 2, 1979 253
Docket PRM-71-7
Denial of Petition for Rulemaking, DPRM-79-6,
October 24, 1979 667

Indexes

Case Name Index I-1
Legal Citation Index I-5
Cases I-5
Regulations I-31
Statutes I-41
Subject Index I-43
Facility Index I-47

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**PUGET SOUND POWER AND
LIGHT COMPANY, et al.**

**Docket Nos. STN 50-522
STN 50-523**

**(Skagit Nuclear Power Project,
Units 1 and 2)**

July 9, 1979

The Appeal Board permits Indian tribes who are three and one-half years late in filing their petition for intervention to file a supplemental memorandum on certain specified issues related to their claim of good cause for late filing before deciding tribes' appeal from Licensing Board decision denying their petition.

RULES OF PRACTICE: NON-TIMELY INTERVENTION PETITIONS

A strong showing of good cause for a late petition to intervene will attenuate the showing necessary for the other four factors of 10 CFR 2.714(a). The converse is also true, where there is no showing of good cause for lateness, the petitioner's showing on the other four factors must be particularly strong.

RULES OF PRACTICE: NON-TIMELY INTERVENTION PETITIONS

Where a petition to intervene is very late, the petitioner's showing of good cause may be crucial.

RULES OF PRACTICE: NON-TIMELY INTERVENTION PETITIONS

Preoccupation of a petitioner's limited retinue of legal and scientific experts with other matters, is *not* an acceptable excuse for filing a late intervention petition.

RULES OF PRACTICE: NON-TIMELY INTERVENTION PETITIONS

The special status which is enjoyed by treaty Indians *vis a vis* the United States is not of itself a sufficient foundation for ignoring the criteria for late filed intervention petitions in 10 CFR 2.714(a).

Mr. Russell W. Busch, Seattle, Washington, for the Upper Skagit Indian Tribe and the Sauk-Suiattle Indian Tribe, and **Mr. Donald S. Means**, LaConner, Washington, for the Swinomish Tribal Community, appellants.

Messrs. F. Theodore Thomsen and Douglas L. Little, Seattle, Washington, for the appellees, Puget Sound Power and Light Company, *et al.*

Messrs. Richard L. Black and Daniel T. Swanson for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

We now have before us a second time the untimely petition of three Indian tribes¹ for leave to intervene in this construction permit proceeding involving the proposed Skagit nuclear facility, which would be located in the Skagit River Valley in the northwest portion of the State of Washington. Last January, we vacated (on the applicants' appeal) a Licensing Board decision² granting the petition and remanded the matter for further consideration. Unpublished order of January 12, 1979, explained in ALAB-523, 9 NRC 58.³ On June 1, the Licensing Board entered an order denying the petition. LBP-79-16, 9 NRC. . . .⁴ The tribes appeal. The appeal is supported in part by the NRC staff⁵ and opposed by the applicants in its entirety.

¹ The Upper Skagit Indian Tribe, the Sauk-Suiattle Indian Tribe and the Swinomish Tribal Community (hereinafter "the tribes").

²LBP-78-38, 8 NRC 587 (1978).

³The tribes petitioned the Commission for review of the January 12 order and ALAB-523. By order of March 8, 1979, the Commission deferred consideration of that petition "pending completion of action on the remanded issue by the Licensing Board and any subsequent review of it by the Appeal Board."

⁴The Board had orally announced that result during a conference on April 24 but had indicated that the appeal period would not commence to run until a written order in explanation of its ruling had issued (Tr. 11781-83).

⁵In the staff's view, the tribes should be permitted limited intervention for the purpose of participating in the proceeding on one of the several issues addressed in their late petition.

A. The tribes' intervention petition was filed on June 13, 1978—almost three and a half years after the deadline (January 20, 1975) prescribed in the notice of hearing.⁶ The petition represented that each of the tribes possessed Federal recognition and enjoyed fishing rights in the vicinity of the site by virtue of the Treaty of Point Elliot, 12 Stat. 927, which was proclaimed in 1859. According to the petition, the tribes' purpose in seeking belated participation in the proceeding was to pursue three special concerns possessed by them. "In very general terms," these concerns were described in ALAB-523 as being "(1) the socioeconomic impact of the plant on the tribes' fishery and community; (2) possible unique genetic impact of plant radiation due to the tribes' asserted greater exposure risk and higher than average rate of intermarriage; and (3) the effects of various plant components and of construction work on the Skagit River environment and fish population." 9 NRC at 60, fn. 8.

Section 2.714(a) of the Commission's Rules of Practice, 10 CFR 2.714(a), contains provisions specifically dealing with late intervention petitions:

Nontimely filings will not be entertained absent a determination by the Commission, the presiding officer, or the Atomic Safety and Licensing Board designated to rule on the petition and/or request, that the petition and/or request should be granted based upon a balancing of the following factors in addition to those set out in paragraph (d) of this section:

- (i) Good cause, if any, for failure to file on time.
- (ii) The availability of other means whereby the petitioner's interest will be protected.
- (iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (iv) The extent to which the petitioner's interest will be presented by existing parties.
- (v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

In obvious recognition of the pivotal importance of the five criteria to the outcome of their petition, the tribes addressed each of them and asserted that they favored allowing late intervention. As summarized in ALAB-523,

⁶See 39 Fed. Reg. 44065, 44066 (December 30, 1974).

on the matter of the existence of “good cause” for their extreme tardiness the tribes

explain first that, at the time that they could have made a timely filing, they were deeply involved in litigation that ultimately led to judicial recognition of their treaty fishing rights. *United States v. Washington*, 384 F.Supp. 312 (W.D. Wash. 1974), affirmed, 520 F.2d 676 (9th Cir. 1975), certiorari denied, 423 U.S. 1086 (1976). Subsequently, they claim, post-trial litigation and efforts to establish effective management and enforcement systems at their fisheries occupied both their time and their limited retinue of legal and scientific experts. Third, they contend that, due to newly available information, difficulty in gaining access to the record, and inadequate environmental statements, they had only recently formed an accurate picture of the potential effects of the Skagit project. Finally, they assert that the United States has a trust responsibility to protect the tribes’ treaty resources and that they had therefore reasonably been relying on their trustee—through the NRC, the Department of the Interior, or the Forest Service—to act on their behalf. But, in their view, no Federal entity had fulfilled that responsibility; and they therefore concluded, “faced with the growing realization that they have a great deal to lose, [that] intervention [was] the only practical course.” Petition to Intervene, p. 13.

ALAB-523, 9 NRC at 60, fn. 6.

In its decision last November which granted intervention,⁷ the Licensing Board took note of the Section 2.714(a) criteria. Nonetheless, as we read the decision, the result reached by the Board was not based upon an application of the criteria to the facts of this case. Rather, it appeared to us to rest on the premise that “the petition, having been filed by Indians, could not be denied in any circumstances, even if there were inexcusable delay or prejudice to other parties”—a premise in turn founded upon the Board’s conception of the trust obligation owed by the United States to the tribes. See ALAB-523, 9 NRC at 61-62. In our view, the premise—which had not been suggested by the tribes—was unsupportable. More specifically, we held that, whatever might be “the relationship between the United States Government and treaty Indians in general, between the government and the particular tribes seeking intervention here, or between specifically named Federal agencies⁸ and those tribes,” that relationship could not serve to justify simply ignoring the delay. *Id.* at 62-63. To the contrary, the status of

⁷LBP-78-38, fn. 2, *supra*.

⁸See 9 NRC at 62, fn. 13.

the tribes was relevant only on the question of the adequacy of the excuse for the delay. Accordingly, in remanding for further consideration of the petition on a proper application of the factors set forth in Section 2.714(a), we said: "in now resolving that question the Board below may take into account, *inter alia*, whether and to what extent the tribes may have for a time justifiably relied on government agencies to protect their interests. In that regard, the Board should examine more closely than before any *specific* trust responsibilities owed the tribes." *Id.* at 63, fn. 16 (emphasis in original).

B. It is against this background that we turn now to examine the tribes' appeal from the June 1 order entered by the Licensing Board following its reconsideration of the matter pursuant to the directive contained in ALAB-523. As earlier noted, that order denied intervention; the Board ruling that (1) the tribes' tardiness was inexcusable and (2) the showing made on the other four Section 2.714(a) factors was insufficient to overcome the want of good cause for the late filing.

The appropriate starting point of our inquiry is the substantiality of the reasons assigned by the tribes for waiting well over three years before seeking to intervene. As observed in ALAB-523, "a strong excuse for lateness will attenuate the showing necessary on the other four factors." 9 NRC at 63. See also, *Florida Power and Light Co.* (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-420, 6 NRC 8, 22 (1977), *affirmed*, CLI-78-12, 7 NRC 939 (1978). The converse is, of course, equally true: "where no good excuse is tendered for the tardiness, the petitioner's demonstration on the other factors must be particularly strong." *Duke Power Company* (Perkins Nuclear Station, Units 1, 2 and 3), ALAB-431, 6 NRC 460, 462 (1977) and cases there cited. In the instance of a very late petition, the strength or weakness of the tendered justification may thus prove crucial. For, obviously, the greater the tardiness the greater the likelihood that the addition of a new party will delay the proceeding—*e.g.*, by occasioning the relitigation of issues already tried.⁹ Although the delay factor may not be conclusive, it is an especially weighty one. *Project Management Corporation* (Clinch River Breeder Reactor Plant), ALAB-354, 4 NRC 383, 394-95 (1976).¹⁰

⁹In this connection, by the time the Licensing Board had its initial opportunity to consider the tribes' petition, evidentiary hearings covering approximately 11,000 transcript pages had already taken place. As we understand it, the first and third of the three issues which the tribes now seek to litigate (see p. 3, *supra*) were treated during the course of those hearings.

¹⁰In *Clinch River*, we quoted with approval our previous observation that "[u]ndeniably, the delay factor is a particularly significant one; indeed—barring the most compelling countervailing considerations—an inexcusably tardy petition would (as it should) stand little chance of success if its grant would likely occasion an alteration in hearing schedules." *Long Island Light Company* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-292, 2 NRC 631, 650-51 (opinion of Mr. Rosenthal speaking for the entire Board on the point).

1. The first excuse offered by the tribes for the lateness of their petition is that their treaty fishing rights were first adjudicated in *United States v. Washington*, 384 F.Supp. 312 (W.D. Wash. 1974), *affirmed*, 520 F.2d 676 (9th Cir. 1975), *certiorari denied*, 423 U.S. 1086 (1976). Prior to that time, they claim, they possessed only "paper" rights, insufficient to provide a practical basis for seeking intervention.

We need not pause to consider the correctness of that claim, which is vigorously challenged by both the applicants and the NRC staff. We also may put to one side the question (not addressed by the tribes) whether—and, if so, why—the formal adjudication of their treaty rights was a condition precedent to the assertion of those concerns referred to in their petition which did *not* relate to those rights (e.g., radiation effects). Be all that as it may, the fact remains that *United States v. Washington* was decided by the district court in the tribes' favor in February 1974, some eleven months *before* the deadline for filing intervention petitions. Nor are the tribes helped by their insistence that only after the court of appeals affirmed that decision in mid-1975 "would it have been reasonable to assert [their treaty] rights in another forum." For, even were that dubious proposition to be accepted, the tribes would still be confronted with the necessity of explaining why another three years elapsed before the intervention petition was filed.

2. At least in part, that explanation appears to be that, in the wake of the court of appeals decision, the tribes and their limited retinue of legal and scientific experts were preoccupied with other matters. A similar excuse for a tardy filing was rejected by us in *Duke Power Company* (Cherokee Nuclear Station, Units 1, 2 and 3), ALAB-440, 6 NRC 642, 644 (1977):

Most persons in our society are confronted with many and varied demands upon their time. The practical effect of acceptance of petitioner's explanation therefore would be free license to make the timing of an intervention petition a matter wholly dictated by personal convenience. The contemplation of the Commission's Rules of Practice is clearly otherwise. Nor could any adjudicatory process function effectively, if at all, in such circumstances.

A reconsideration of the matter has given us no cause to alter that view. In this respect, there is nothing unique about the tribes' situation. Participation in any complex adjudicatory proceeding—whether being conducted in the courts or before an administrative agency—is both time-consuming and a drain on the often limited resources of the participants. This being so, what the tribes (in common with the *Cherokee* petitioner) ask is that the universally accepted practice of prescribing deadlines for intervention petitions be discarded by this Commission in favor of a rule which would per-

mit each prospective intervenor to decide for himself the precise time at which he should transfer his attention and resources from the pursuit of other concerns. We repeat the thought expressed in *Cherokee*: were such a rule adopted the adjudicatory process likely would break down entirely. That consideration may explain why the tribes have not provided us with a single judicial or agency precedent in support of their "otherwise preoccupied" excuse.

3. What this leaves are the two other (and interrelated) justifications which have been offered by the tribes for the late filing. The first is (Br. p. 7) that "there was not sufficient information available concerning the proposed nuclear plants to enable them to make an informed decision as to whether, and on what points, intervention was advisable." On this score, the Licensing Board's rejoinder had been, in part, that the proposed nuclear facility had received extensive publicity in the Skagit River area and the applicants' plans had been made publicly available. By way of rebuttal, the tribes maintain (Br. p. 8) that much of the publicity was favorable to the facility and, in any event, it "should not be taken to overwhelm the simple argument that the Indians were unable to determine, *in time*, that these plants might pose a risk to their health and to their treaty fishery" (emphasis supplied).¹¹ In this connection, they cite a February 28, 1975 letter sent to two of the tribes by an official of the Fish and Wildlife Service of the Department of the Interior, in which the opinion had been expressed that the "physical structure and operation" of the proposed facility would have a "minimal adverse impact on existing resources of the Skagit River."¹²

Secondly, the tribes renew (Br. p. 10) the claim that they had relied to their detriment upon "their Federal trustee to insure that their health and their treaty resource would be protected" and, in addition, upon "environmental impact statements prepared by the NRC which created a false sense of security." For support for this claim, we are referred to the tribes' September 5, 1978 reply brief below.

That brief pointed (at pp. 16-18 and 32-34) to various statements in the Skagit FES¹³ and by Interior¹⁴ which had suggested that, in the view of their authors, the proposed facility would have minimal effect upon the Skagit River fishery and (from a socioeconomic standpoint) the surrounding communities. In addition, as requested by the Licensing Board,¹⁵ that brief ad-

¹¹ The tribes do not illumine what they mean by "in time." See discussion, pp.9-10 *infra*.

¹²The letter had gone on to indicate that "[t]here is a potential impact, however, if a channel must be dredged up to Skagit River to accommodate the barge which is to deliver the large reactor vessel. This is being investigated."

¹³The FES was published in May 1975. A final supplement to it issued in April 1977.

¹⁴Most particularly, the February 1975 letter referred above.

¹⁵See the August 28, 1978 letter from the then Chairman of the Board to the tribes' counsel.

dressed the question whether the tribes had asked Interior's Bureau of Indian Affairs to participate in this proceeding on their behalf and, if not, whether they had believed that the Department "would automatically and *sua sponte*" do so. The response was (pp. 31-34) that, although the proposed project had been discussed with Interior lawyers during meetings in 1976 and 1977 concerning dam construction on the Skagit River, it could not be determined whether at those meetings—or prior thereto—tribal representatives had called upon Interior to intervene or to provide "help of a more general nature" (or had believed that Interior would do so on its own initiative). Subsequently, in the fall of 1977, an Interior lawyer had been requested to "consider the possibility of United States intervention" and that, "after a period of time," the tribes' attorneys had been advised that Interior "would not be intervening and [thus] the [tribes] should prepare their own intervention." According to the tribes, it was at that point that they "sought to become familiar with the record in this proceeding, to seek expert opinion and to determine whether intervention was warranted."

In short, if we understand the tribes' position correctly, at bottom it is this: Although in January 1975 they were fully aware of the proposal to build the Skagit facility in the vicinity of their fishery and community, they did not have at their disposal sufficient information on which to form an independent judgment respecting whether its construction and operation would adversely affect their interests. Rather than make their own endeavor to acquire such information, they chose to rely, as they assertedly were entitled to, upon the expressed opinion of both Interior and the NRC staff that the aquatic and socioeconomic effects would be insignificant. As a consequence of such reliance, they neither sought to intervene in the proceeding themselves nor (apparently) specifically requested Interior to do so on their behalf. At some point in 1977, however, they became concerned that in reality their interests might be harmed by the proposed facility and then asked Interior "to consider the possibility of United States intervention" as their trustee. Only after Interior indicated that it would not pursue that course did they seek for the first time to look into the matter of intervention themselves.

On the record before us, we have several difficulties with this line of reasoning. To begin with, giving the widest possible reach to the trustee relationship as it has been defined over the years in the numerous judicial decisions cited by the tribes to the Licensing Board¹⁶—as well as affording

¹⁶E.g., *Cherokee Nation v. Georgia*, 30 U.S. (5 Pet.) 1 (1831); *United States v. Kagama*, 118 U.S. 375, 384 (1886); *Seminole Nation v. United States*, 316 U.S. 286, 296-97 (1942); *Morton v. Mancari*, 417 U.S. 535 (1974).

full recognition to the sanctity of treaty rights possessed by Indians¹⁷—it does not seem to us that Interior (or any other Federal agency) was perforce under an obligation to intervene in this proceeding on the tribes' behalf.¹⁸ To be sure, the tribes may have had a right to look to Interior, and other Federal agencies as well, to scrutinize the proposal closely from the standpoint of the protection of tribal interest. And we may further assume for present purposes that, upon an agency determination that those interest might be threatened by the proposal, some affirmative Federal action—possibly including intervention—would have been required to avoid the threat becoming a reality. From all that appears, however, both Interior and the NRC staff pursued actively whatever duty of investigation they may have owed the tribes and concluded that tribal interests would not be significantly affected by the construction and operation of the facility.¹⁹ It is our further impression that the passage of time has not altered that conclusion; *i.e.*, that no Federal agency which has examined the proposed facility now shares the tribes' concerns.

Neither the NRC nor Interior purported to guarantee the correctness of their ultimate conclusions regarding impact upon the tribes. And our examination of the relevant jurisprudence discloses no basis upon which such a warranty might be implied as a matter of law. Thus, it is not enough for the tribes simply to assert that they were lulled into a false sense of security by the appraisals of impact given them by Interior or reflected in the FES prepared by the NRC staff. What the tribes must additionally establish is that, whether because of inadequate investigation on the part of the Federal agency or for some other reason, they were furnished erroneous information on matters of basic fact and that it was reliance upon that information which prompted their own inaction prior to June 1978.

We find that, to this point at least, no such showing has been attempted. More specifically, the tribes have not endeavored to explain the respect(s) in which the NRC staff, Interior, or other Federal agencies misrepresented any fact (then known or ascertainable) which had a possible bearing upon the Skagit facility and the likely effects of its construction and operation upon tribal interests. Nor have we been pointed to any known or ascertainable

¹⁷*E.g., Menominee Tribe of Indians v. United States*, 391 U.S. 404, 412-13 (1968).

¹⁸We do not read the tribes' papers as suggesting the existence of such an obligation.

¹⁹It may well be that neither agency focused upon whether, because of intermarriage considerations, radiation releases during normal plant operation or under accident conditions might have a greater effect upon the tribes' members than upon the population as a whole. This was quite understandable, however, given the seeming unavailability (even today) of any concrete information on the subject. Moreover, the tribes do not assert that they had been supplied reason to believe that any Federal agency was looking into that possibility. And, insofar as the record discloses, they did not request that it be investigated.

material fact *not* disclosed by the agency which, had it been disclosed, might have induced the tribes to seek intervention at an earlier time.

Beyond these deficiencies, the tribes' papers do not present a clear picture as to precisely when, and by what means, they discovered (if they did) that a misrepresentation or non-disclosure of a material fact had occurred (and what it was). Needless to say, the time element assumes crucial importance in judging whether the tribes were justified in not merely failing to meet the January 1975 filing deadline, but waiting until June 1978 before seeking to intervene. If, for example, they had first become aware in 1976 that the factual information made available to them by Federal agencies might be materially inaccurate, there would remain the question why they had not then undertaken to assert their interests.

C. The burden of persuasion on the "good cause" question rests, of course, upon the tardy petitioner. Our just-reached conclusion that there are crucial gaps in the tribes' showing thus would allow us to decide now that good cause was lacking and to proceed to consider and weigh on that basis the other four factors set forth in Section 2.714(a).

In the exercise of our discretion, however, we have elected to provide the tribes with a fresh opportunity to fill the gaps. As earlier noted, in light of the extreme tardiness of the tribes the determination on "good cause" may well turn out to be decisive. And, although we have held that the special status which is enjoyed by the tribes *vis a vis* the United States is not of itself a sufficient foundation for ignoring the dictates of Section 2.714(a), nonetheless every reasonable precaution should be taken to insure that they have not been excluded from this proceeding simply because of ignorance of the ingredients of the demonstration required to overcome their lateness in arriving on the scene.

Accordingly, the tribes may file a supplemental memorandum *within 21 days of the date of this order* for the sole purpose of curing those deficiencies in their presentation to date which have been identified in this opinion, p. 9, *supra*. We wish to emphasize that the memorandum is to be so confined and should cover each of the identified deficiencies with particularity.²⁰ A mere rehearsal of the generalities contained in prior submissions to this Board below will not suffice. Nor will any advantage be derived from a further discussion of either the excuses for lateness which we already have found to be

²⁰In other words, in the instance of an asserted reliance on an erroneous statement of material fact, the memorandum should specify (1) where that statement appeared; and (2) when, and through what source, the tribes first learned that the statement was likely or possibly in error. If the claim is that there was a failure on the part of a Federal agency to disclose to the tribes a germane fact which either was or should have been known to that agency, the memorandum should similarly specify (1) the nature of that fact; and (2) when, and through what source, the fact first came to the tribes' attention.

insubstantial or the tribes' view of the extent of their special rights as Indians or as treaty beneficiaries.

The other parties may respond to the supplemental memorandum *within 10 days of the date on which it is served upon them*. Upon receipt of the responses, we will act expeditiously on the tribes' appeal.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Richard S. Salzman
Dr. W. Reed Johnson

In the Matter of

FLORIDA POWER AND
LIGHT COMPANY

Docket No. 50-389

(St. Lucie Nuclear Power
Plant, Unit No. 2)

July 11, 1979

The Appeal Board grants staff's request for a lengthy second extension of the deadline for filing written testimony. In granting the request, made as a result of staff's inability to meet the earlier deadline due to assignment of staff to Three Mile Island related matters, the Board rejects the intervenors' suggestion that it hold a hearing to determine the reasonableness of the request; the Board does, however, call the matter to the attention of the Commission for such action as the Commission deems fit.

MEMORANDUM AND ORDER

1. As part of our review of the Licensing Board's decision to allow the applicant to construct a second nuclear unit at the St. Lucie site, we have taken up the matter of the stability of the applicant's electrical grid and the adequacy of the facility's emergency power systems generally. This subject first came to our attention as a result of a letter that Robert D. Pollard (formerly a Commission staff member) had written to the Attorney General of the United States.¹ On April 5th of this year, we decided that this safety matter could not be resolved without a hearing.² In that connection, we in-

¹The merits of this issue remain before us; another aspect of it, involving the question of whether the boards had been kept properly informed of the facts, was handled and resolved by the Commission itself. See ALAB-537, 9 NRC 408, fn. 5 (April 5, 1979).

²ALAB-537, *supra*.

dedicated that the staff and applicant should be able to file their prepared written testimony (which was to include answers to certain questions we posed) within forty-five days,³ *i.e.*, by May 21st.

Before that date arrived, the staff asked for approximately a month's extension of the filing deadline, to June 22nd. In routinely granting that unopposed motion, we made the extension applicable to both the staff and applicant, as had been requested. The applicant duly filed its testimony by June 22nd; indeed, a portion of it was filed well in advance of that date.

The staff, however, did not file its testimony at that point. Rather, it has requested a further extension of *ninety days* duration. This would move its filing time to September 21, 1979. The staff's papers make clear that the cause of its inability to prepare its testimony in timely fashion has been (and will continue to be) its assignment of a higher priority to matters stemming from the recent accident at Three Mile Island, with the result that adequate manpower is not being devoted to this proceeding.⁴

Upon receipt of the staff's motion, the applicant advised us by telephone (in response to our inquiry) that it would not be filing any formal opposition. However, it withheld expressing any consent to the grant of the motion.

For their part, the intervenors have filed a paper opposing the relief sought by the staff. They point out that the reactor in question is now under construction (their stay request having been denied by us).⁵ Thus, they say, there is reason to question the propriety of additional delay in the resolution of the still-outstanding safety issues concerning the facility. And, while conceding that sufficient justification for some delay may eventually be found to exist, the intervenors assert that thus far the staff's assignment of reasons has been inadequate for that purpose. Then, referring to our decision in *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 206-07 (1978), the intervenors go on to suggest that we hold a hearing to determine more precisely the reasons for, and reasonableness of, the extension of time now being requested.

2. Notwithstanding the other parties' discontent with the situation, we are not in position to second-guess the staff's ranking of priorities.⁶ Perhaps if we were to hold the hearing suggested by the intervenors, we

³ *Id.* at 417, text accompanying fn. 31.

⁴ See the staff's letters of April 12 and June 13 and its motions dated May 11 and June 21.

⁵ See ALAB-537, *supra*, 9 NRC at 407; see also ALAB-415, 5 NRC 1435 (1977) and ALAB-435, 6 NRC 541, 546 fn. 18 (1977) (refusing to halt construction pending our consideration of other issues).

⁶ But see *Puget Sound Power and Light Company* (Skagit Units 1 and 2), ALAB-552, 10 NRC 6-7, (July 9, 1979), citing *Duke Power Company* (Cherokee Units 1, 2 and 3), ALAB-440, 6 NRC 642, 644 (1977).

could gain additional insight into how the staff decides which of its many safety-related tasks have the more urgent claims on its finite resources. But we do not believe such an undertaking would be worthwhile. To the contrary, the suggested collateral hearing would further tax the parties' resources; in the present circumstances, this would most likely result in putting off longer the day on which we will finally reach the merits of the issues before us.⁷

Nonetheless, the intervenors' reference to *Offshore Power* was not inappropriate. For we believe it fitting to do here what we there suggested that licensing boards might want to do in somewhat analogous circumstances. Specifically, we are noting for the record what has occurred. And by this order we are calling the matter to the attention of the Commission, which has supervisory authority over the staff. The Commission is more familiar than we are with how the Three Mile Island accident has affected day-to-day agency operations outside of the adjudicatory arena. If the Commission believes that the manner in which the staff is allocating its resources is not prudent, it can deal with the situation. If, on the other hand, the Commission is satisfied that its intercession is unnecessary or undesirable, its silence will leave undisturbed the full extension of time now allotted.

Staff motion *granted*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop

Secretary to the Appeal Board

Mr. Salzman participated in the preliminary consideration of this matter but did not review the final version of this memorandum.

⁷In this connection, no one has suggested that we ought to deny the staff's motion outright and proceed directly to a hearing on the merits of the applicant's testimony in the absence of the staff's independent evaluation of it. In our judgment, it would be inappropriate to follow such a course here.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck

In the Matter of

Docket Nos. STN 50-518

50-519

TENNESSEE VALLEY
AUTHORITY

50-520

50-521

(Hartsville Nuclear Plant,
Units 1A, 2A, 1B, and 2B)

July 11, 1979

The Appeal Board vacates the Licensing Board's grant of applicant's motion for summary disposition of all matters relating to the construction of the facility's discharge diffuser. On the basis of the evidentiary record, the Appeal Board grants judgment for the applicant on the issue of operational effects of the diffuser on an endangered specie of mussels; the Board defers judgment on the issue of construction effects, requesting that submission of supplemental memoranda.

RULES OF PRACTICE: SUMMARY DISPOSTION

Summary disposition under Section 2.749 of the Commission's Rules of Practice is the appropriate remedy only with regard to matters susceptible of final resolution on the papers submitted by the parties in advance of an evidentiary hearing in the proceeding at bar.

Messrs. Herbert J. Sanger, Jr., General Counsel, Lewis E. Wallace, Deputy General Counsel, Alvin H. Gutterman and W. Walter LaRoche, Knoxville, Tennessee, for the Tennessee Valley Authority, applicant.

Messrs. Leroy J. Ellis, III, and Robert B. Pyle, Nashville, Tennessee, for William N. Young, *et al.*, intervenors.

Mr. William D. Paton for the Nuclear Regulatory Commission staff.

DECISION*

In ALAB-463¹ we affirmed, on all but one of the issues there considered,² a Licensing Board decision authorizing the issuance of construction permits for the four units of the Hartsville Nuclear Plant.³ That issue, raised by the intervenors William N. Young, *et al.*, involved the location at which the discharge diffuser (which will be employed in the removal of cooling and service waste water from the plant to the Cumberland River) should be constructed. In its decision, the Licensing Board had found that the diffuser could acceptably be placed at a specific proposed location upstream from a bed of an endangered specie of mussels, *Lampsilis orbiculata*, — “provided [that location were] approved by the Department of the Interior.”⁴ We reversed that disposition of the matter, holding that such NRC acceptance of an upstream location conditioned on later Interior Department approval was forbidden by Section 7 of the Endangered Species Act.⁵ We went on to indicate, however, that if upon consultation it obtained

*The third member of this Board, Jerome E. Sharfman, resigned from the Appeal Panel effective June 9, 1979. He did not participate in the ultimate consideration or disposition of this matter.

¹7 NRC 341 (1978).

²ALAB-463 did not consider the generic radon issue which the Commission later called upon us to address in this and a number of other proceedings. See ALAB-480, 7 NRC 796 (1978). That issue remains open.

³LBP-77-28, 5 NRC 1081 (1977).

⁴*Id.* at 1108. The Licensing Board had also approved an alternative diffuser location *downstream* from the mussel bed. We reserved decision as to the correctness of that approval pending the submission of further evidence and briefs. See ALAB-463, 7 NRC at 365-66, 371. Subsequently, on motion of the applicant (which would prefer to use the upstream location), we deferred further consideration of the downstream location. Unpublished order dated March 29, 1978. That matter is not now before us.

⁵ALAB-463, 7 NRC at 364. As amended on November 10, 1978 by Public Law 95-632, 92 Stat. 3752, Section 7(a) of the Endangered Species Act, 16 U.S.C. 1536(a), provides:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this Act. Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an “agency action”) does not jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical, . . .

The 1978 amendment worked no changes relevant to this proceeding.

the views of the Department of the Interior, the applicant might then petition the Licensing Board for approval of the upstream location.⁶

As it turned out, two days before ALAB-463 was handed down, and unbeknownst to us, the Fish and Wildlife Service of Interior had issued a Biological Opinion addressed to "the effects of the proposed location alternatives for the discharge diffuser system . . . upon the biological needs" of the mussels and their "essential habitat."⁷ As to the upstream location, it expressed the view that:

[T]he proposed construction and operation of the diffuser, if placed in the area between Dixon Island and the upstream edge of the mussel bed, are not likely to jeopardize the continued existence of the endangered pink mucket pearly mussel. All construction activities pertaining to diffuser dredging should be scheduled to avoid the August-September breeding season.

Armed with Interior's conclusion, the applicant promptly moved the Licensing Board, pursuant to 10 CFR 2.749, for a "summary decision" approving construction of the discharge diffuser at the proposed upstream location. The motion was founded on the thesis that any issues of fact which may have existed concerning the matter had already been the subject of an evidentiary hearing; there remained no genuine issues of material fact; and the applicant was entitled to a favorable decision as a matter of law. Over the objection of the intervenors, the Licensing Board, finding "the filings in this proceeding, the depositions, answers to interrogatories, together with the statements of the parties and the affidavits, show that there is no genuine issue as to any material fact," granted the motion.⁸ The Board did, however, direct the NRC staff (1) to incorporate in the Hartsville construction permits the substance of a plan, agreed to by the parties, for monitoring the impact of construction on the mussels; and (2) to verify that "any accumulation of sediment on the mussel bed is acceptably small."⁹

On their appeal to us, the intervenors mount a two-pronged attack upon this resolution of the matter. First, they dispute the Licensing Board's statement¹⁰ that the record did not establish the precise level of sedimenta-

⁶ 7 NRC at 371. See p. 19, *infra*.

⁷The Biological Opinion letter was issued by the Department of the Interior on March 15, 1978, but not received by the applicant until after March 17, 1978, the date upon which ALAB-463 issued.

⁸LBP-78-35, 8 NRC 513, 523 (1978).

⁹*Ibid*. The text of the agreed-upon monitoring plan was attached to the Licensing Board's decision. 8 NRC at 523-26. It includes, *inter alia*, an undertaking (consistent with Interior's recommendation) to avoid "if possible" dredging activities during the mussel breeding season. *Id.* at 526.

¹⁰*Id.* at 516.

tion which might occasion harm to the mussels. In support of this challenge, the intervenors refer us (Br. p. 5) to the applicant's May 11, 1978 response to interrogatories served upon it by them.¹¹ In its answer to interrogatory 1(d), the applicant had cited an article, published in 1936,¹² which (so they informed intervenors) had indicated that "most of the common fresh-water mussels were unable to maintain themselves in either sand or gravel bottoms where a layer of silt from one-fourth of an inch to one inch deep was allowed to accumulate on the surface of these otherwise satisfactory bottom habitats." The applicant had gone on to state, however, that the dredging activities in the course of construction of the diffuser¹³ "will not result in deposition of sediment on the . . . mussel bed to a thickness even approaching 1/4 inch."

In these circumstances, the intervenors maintain (Br. p. 6), the agreed-upon monitoring program should incorporate a "1/4-inch aggregate deposition standard"—by which they appear to have in mind that dredging would have to be halted (or some other remedial action taken) were the monitoring to disclose that a 1/4 inch sedimentation level had been reached. According to intervenors (Br. p. 7), were their suggestion to be adopted by us, they would no longer object to the proposed upstream diffuser location because of the possible impact of construction work upon the mussels.

Turning then to the potential effect of diffuser operation upon the mussels, the intervenors argue (Br. pp. 9-10) that, instead of "examining the evidence to determine if there is a genuine issue of material fact," the Licensing Board "examines the conflicting evidence in the record and determined the preponderance is against intervenors' position." They further insist (*ibid.*) that "[n]othing is known about the tolerances of this particular organism for various environmental variables such as temperature, oxygen concentration, ph, turbidity, sensitivity to pollutants, etc." For this reason we are urged (Br. p. 13) to "impose plant operating phase standards for a monitoring plan, as a condition to approving the upstream discharge diffuser location"; otherwise, "this case should be remanded for an evidentiary hearing."

The applicant and the NRC staff oppose both of intervenors' claims. For its part, the applicant insists (Br. p. 4) that the 1/4 inch sediment standard proposed by the intervenors for inclusion in the construction monitoring program is not supported by the record and was not raised below. As to

¹¹Copies of this response were sent to the Licensing Board at the time it was furnished to the intervenors. As heretofore seen, it was relied upon the Board in granting summary disposition.

¹²M. M. Ellis, *Erosion Silt as a Factor in Aquatic Environments*, Ecology 17 (1): 29-42.

¹³As noted in ALAB-463, the sedimentation concern is tied exclusively to those dredging activities. 7 NRC at 363.

the intervenors' second claim, the applicant urges (Br. pp. 7-11) that (1) the question of the effect on the mussels of diffuser operation was settled in ALAB-463; (2) in any event, no genuine issue of material fact has been identified by the intervenors; and (3) establishing standards for monitoring the effect of plant operation in premature at this time. The staff advances essentially the same line of argument.

A. Prior to the issuance of the Licensing Board's 1977 initial decision (LBP-77-28) authorizing the issuance of construction permits for the Hartsville Plant, the diffuser location question had been fully heard by the Licensing Board with participation by all of the parties. Consequently, upon the issuances of Interior's Biological Opinion, the matter became ripe for decision on the hearing record in accordance with what was said by us on our review of LBP-77-28. We stated in ALAB-463:

If the applicant consults with the Department of the Interior with respect to the upstream location and receives the Department's views with respect to it, applicant may then, if it so desires, petition the Licensing Board for approval of that location. If such a petition is filed, the Licensing Board shall treat it in accordance with the principles enunciated in this opinion but shall take into account any future decisions of the Federal courts under the Endangered Species Act.

7 NRC at 371.¹⁴

Rather than requesting a decision on the basis of the hearing record (Interior having spoken), as previously noted the applicant elected instead to proceed by motion for a "summary decision" under Section 2.749 of the Commission's Rules of Practice. We fail to understand why this course was chosen. Manifestly, in the then posture of the case, the motion was not the proper vehicle for obtaining a decision on the merits. On its face, Section 2.749 provides a remedy only with regard to matters which have not already been the subject of an evidentiary hearing in the proceeding at bar but are susceptible of final resolution on the papers submitted by the parties in advance of any such hearing.¹⁵ Beyond that, in this instance the motion for summary decision shifted focus away from the evidentiary record to the various pleadings and other documents filed outside of the hearing conducted to consider alternative diffuser locations. By doing so, it raised a

¹⁴In a footnote, we referred to *Hill v. TVA*, 549 F.2d 1064 (6th Cir. 1977), the "snail darter" case which was then under Supreme Court review. The case has since been decided by that Court. 437 U.S. 153 (1978).

¹⁵The Section bears the caption "authority of presiding officer to dispose of certain issues on the pleadings." The introductory sentence to subsection (a) provides that "[a]ny party to a proceeding may, at least forty-five (45) days before the time fixed for the hearing, move . . . for a decision . . ."

question foreign to all that needed to be decided, *i.e.*, whether the totality of the evidence adduced at the hearing warranted¹⁶ the conclusion that Commission authorization of construction of the discharge diffuser at the upstream location might jeopardize the existence of the mussels.¹⁷

B. The foregoing considerations do not, however, preclude us from now taking a fresh look at the evidence in the record and rendering our own decision based on that record.¹⁸ Insofar as the effects of diffuser operation are concerned, we adhere to the view (which had been at least tentatively expressed in ALAB-463)¹⁹ that at the upstream location those effects likely will be insignificant and, therefore, "not jeopardize the continued existence" of the mussels within the meaning of Section 7 of the Endangered Species Act. As we have seen, Interior independently reached the same conclusion in its Biological Opinion (see p. 17, *supra*).

It does not perforce follow, of course, that there will be no need to monitor the impact of diffuser operation on the mussels; to the contrary, we may assume for present purposes that such a step will be required in order to carry out fully the mandate of the Endangered Species Act. Notwithstanding the intervenors' seeming different belief, however, we think that it is manifestly too early to develop the details of a monitoring program.

The commencement of plant operation remains years in the offing. It is reasonable to expect that, in the interim, significant additional information will be acquired respecting the characteristics of the mussel population. Moreover, changes in conditions affecting the mussels may well occur between now and then. Deferral of the adoption of a plant operation monitoring program until the time the facility is being considered for an operating license would allow resort to the most current information relating to the mussels and those environmental factors which might affect their continued existence. In this connection, there is nothing in the monitoring standards which intervenors propose for adoption at this time which could not be adopted later if then thought warranted. And, needless to say, the absence

¹⁶When re-examined in light of Interior's Biological Opinion.

¹⁷On a motion for summary disposition (or decision), the single question is whether the filings and other papers in the proceeding "show that there is no genuine issue as to any material fact and that the moving party is entitled to a decision as a matter of law." Section 2.749(d). The same is true under Rule 56 of the Federal Rules of Civil Procedure. A court cannot try issues of fact on a Rule 56 motion but only is empowered to determine whether there are issues to be tried. *Wright and Miller*, Federal Practice and Procedure (1973), Vol. 10, p. 377 and cases cited. Section 2.749 is patterned after Rule 56. 37 Fed. Reg. 15127 (July 28, 1972).

¹⁸Although an appellate tribunal, we possess the authority to make factual findings of our own on the basis of record evidence. See, *e.g.*, *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-356, 4 NRC 525 (1976).

¹⁹See 7 NRC at 359-60.

of operating level monitoring standards during the construction period could have no effect on the mussels—adverse or otherwise.

It need be added only that, in declining to accept intervenors' monitoring standards for application during operation of the plant, the Licensing Board did not disregard the need to insure the protection of the mussels once the plant began operations. To the contrary, the Licensing Board ordered the "NRC staff to consider the protection of the endangered mussel species, *Lampsilis orbiculata*, in developing the environmental technical specifications for the plant at the operating license stage."²⁰ That directive, which we explicitly ratify, suffices for the present.

C. What remains to be examined is the possible impact upon the mussels of dredging activities in the course of construction of the diffuser. With Interior's Biological Opinion in hand, that matter likewise is now susceptible of decision.

Nonetheless, it appears appropriate first to determine whether the applicant and the staff have any *substantive* objection to the "1/4 inch aggregate deposition standard" which the intervenors press upon us. See p. 18, *supra*. We appreciate that, as both of those parties stress, the intervenors should have raised the matter when the construction monitoring program was developed and then accepted during the proceedings below. Additionally, there may be room for the applicant's insistence (Br. p. 6) that the Ellis statement upon which the intervenors rely (see p. 18, *supra*) was intended to convey the thought that mussels can survive sedimentation levels up to one inch—that statement is not entirely clear in that respect.²¹ But, given the applicant's representation that the dredging activities will not produce a deposition of sediment on the mussel bed "even approaching" 1/4 inch in thickness, it occurs to us that the adoption of intervenors' proposed standard might accommodate the interests of all concerned. Of perhaps greater importance, it might also provide still further assurance that the Legislative mandate embodied in Section 7 of the Endangered Species Act has been and will continue to be satisfied in full measure.

The applicant and the staff are requested to file supplemental memoranda on this question *within 21 days of the date of this opinion*. Should the in-

²⁰8 NRC at 522.

²¹The applicant further suggests (Br. p. 6) that the application of the results of the Ellis research to mussels in the Cumberland River is a complex matter. More specifically, we are informed that:

During high flow, the river current and a natural eddy created by the river bottom topography sweep the bed of most deposited materials (tr. 6382-85; Exhibit 2 to Applicant's motion for summary disposition at 15). Consequently, sediment deposited on the mussel bed during low flows may not remain there for periods comparable to the year-long study reported in the paper cited in response to interrogatory 1(d).

tervenors' proposed standard be deemed unacceptable, the reasons for its unacceptability should be set forth in detail.

The Licensing Board's grant of summary disposition is *vacated*; on the basis of the evidentiary record, the applicant is *granted* judgment on the issue of operational effects on the mussels; decision is *deferred* on the issue of the effects of construction activities.²²

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

²²Needless to say, the action we take today should not be construed as a disapproval of the agreed-upon monitoring plan, as modified in one limited respect by the Licensing Board. See 8 NRC at 517. To the contrary, we endorse the plan subject to possible further modification upon our receipt and consideration of the supplemental memoranda which have been requested.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**VIRGINIA ELECTRIC AND
POWER COMPANY**

**Docket Nos. 50-338 OL
50-339 OL**

**(North Anna Nuclear Power
Station, Units 1 and 2)**

July 13, 1979

The Appeal Board grants turbine manufacturer's request for a protective order governing access to and disclosure of certain claimed proprietary information.

EVIDENCE: EXPERT TESTIMONY

Where an expert witness states ultimate conclusions on a crucial aspect of the issue being tried, a proper foundation for the conclusion must be provided. Where the conclusion rests upon a performed analysis, the witness must make available sufficient information pertaining to the details of the analysis to permit the correctness of the conclusion to be evaluated.

RULES OF PRACTICE: PROTECTIVE ORDERS

One asserting entitlement to a protective order must demonstrate, *inter alia*, that the information in question is of a type customarily held in confidence by its originator; that there is a rational basis for having customarily so treated the information; and that the information has, in fact, been kept in confidence and is not to be found in public sources. *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-327, 3 NRC 408, 416-418 (1976).

RULES OF PRACTICE: PROTECTIVE ORDER

An affidavit in support of a motion by a company for a protective order must be executed by one with personal knowledge of the policies and practices of the company with regard to preserving the confidentiality of information said to be proprietary in nature.

MEMORANDUM AND ORDER

In accordance with ALAB-529, 9 NRC 153 (1979), we held an evidentiary hearing last month on two safety issues which we had taken up on our own initiative in this operating license proceeding involving the first two units of the North Anna facility. One of those issues concerned the possibility that damage to safety-related structures would be occasioned by pieces of the turbine breaking loose and, in the form of missiles, striking those structures. On this issue, the sole participants were the applicant and the NRC staff.¹

One of the witnesses for the applicant was Dr. Douglas H. Shaffer, a mathematician in the employ of the Westinghouse Electric Corporation (the manufacturer of the North Anna turbines). His prepared testimony² addressed the probabilities of the generation and ejection of a turbine missile during plant operation. Certain values were assigned to those probabilities. According to the testimony, the probabilities had been arrived at "by fault tree methodology."

During examination of Dr. Shaffer by the members of this Board, he was asked to provide greater detail respecting the methodology which had been employed in producing the fault trees he had utilized. Dr. Shaffer responded that "[t]he fault trees that I referred to here were included in full in the report issued by Westinghouse in March of 1974, covering this probability investigation" (App. Tr. 472). Although Dr. Shaffer did not have that report³ in his immediate possession, he obtained it during a brief recess called for that purpose (App. Tr. 473).

¹Intervenors Geraldine Arnold and the Commonwealth of Virginia confined their participation in the hearing to the other issue there considered (which involved the settlement of the land under the facility's pumphouse).

²Authored jointly with another applicant's witness, Millard F. Smith (who is also employed by Westinghouse).

³"Analysis of the Probability of the Generation and Strike of Missiles from a Nuclear Turbine." Although the author of the report was not identified, the cover page indicated that the information contained therein was derived from the results of a probability analysis conducted by, among others, Dr. Shaffer.

The report had not been alluded to in the Shaffer testimony itself. It had, however, been cited in the portion of the North Anna Final Safety Analysis Report which had been appended to that testimony.

The Board's cursory review of the report over the luncheon hour disclosed that the flow diagram for the destructive overspeed⁴ fault tree did not provide individual values for each of the various components ("root events") of the tree. Obviously, without these values, it was not possible for us—or another party to the proceeding—to pass an informed judgment on the correctness of the ultimate value which (based upon his use of the tree) Dr. Shaffer assigned in his testimony to the probability of a destructive overspeed.⁵ Because of the crucial importance of the testimony to the resolution of the turbine missile issue, when the afternoon session commenced Dr. Shaffer was asked whether he could supply and justify the values that had been assigned to the tree components. It turned out that he did not have the values at hand. Beyond that, we were told that they had been derived by Dr. Shaffer and his colleagues from data furnished by Westinghouse's Steam Turbine Division. And, according to the applicant's counsel, those data were deemed by Westinghouse to be proprietary information. See App. Tr. 539-47.

Given our resultant inability to probe the foundation of Dr. Shaffer's conclusion respecting the probability of a destructive overspeed, we entertained considerable doubt that much weight could be attached to that conclusion. Following some discussion of the matter, applicant's counsel sought and obtained the opportunity to consult with Westinghouse representatives. Thereafter, he reported to us that Westinghouse would be willing to provide under protective order "the basic data which Dr. Shaffer used . . . in arriving at his ultimate probability calculations" (App. Tr. 570). He further indicated that a draft of such an order would be submitted to us for our approval.

We now have before us the submission of Westinghouse itself. Appearing specially for the purpose through its own counsel, that company has supplied a proposed protective order which it asks that we enter. In substance, that order provides that Westinghouse will transmit to the NRC staff and this Board copies of certain specified documents which are said to contain "proprietary information." The documents are to be used for "the sole purpose of the review of the turbine missile issue in this proceeding." No additional copies are to be made and their content is not to be disclosed "outside the United States Nuclear Regulatory Commission or to anyone within the Commission who is not taking an active part in the review of such information." Finally, "at the close of these proceedings, all copies of the

⁴"Destructive overspeed" refers to the situation in which a nonflawed turbine blade breaks into pieces because of its rotation at an excessive rate of speed.

⁵That value was 1.7×10^{-6} per unit per year.

⁶See also the later decision in the same case, ALAB-391, 5 NRC 754, 755 (1977).

subject Westinghouse proprietary information shall be returned" to Westinghouse. See pp. 28-29, *infra*.

In support of its claim that the information in question is entitled to such treatment, Westinghouse tendered the affidavit of Dr. Shaffer to the effect that that information (1) was extracted from or based upon service records, experience or data customarily held in confidence under established procedures to protect confidentiality; (2) has not been previously disclosed by Westinghouse to any third party other than subject to "appropriate proprietary protection"; (3) is not available from any source apart from Westinghouse; and (4) could not be publicly disclosed without placing Westinghouse at a competitive disadvantage. Additionally, Westinghouse tells us that none of the other parties to the proceeding has any objection to the entry of a protective order, although counsel for intervenor Arnold does not concede the validity of the proprietary claim.

A. Prior to turning to the question of the justification for entry of the protective order proposed by Westinghouse, we believe that a few observations are warranted with respect to the situation which confronted this Board at the hearing. As has been seen, the applicant placed before us the testimony of Dr. Shaffer on a pivotal element of the turbine missile issue. That testimony contained, without detailing the basis for them, ultimate conclusions respecting the probabilities of turbine failure. When we inquired into that basis, we were furnished a Westinghouse analytic report prepared by Dr. Shaffer (among others) several years ago. That report, however, was wholly devoid of the underlying information necessary to enable us to evaluate Dr. Shaffer's conclusions and to make a reasoned judgment on the weight, if any, which we should attach to those conclusions in deciding this important safety matter. Our endeavor to obtain that information from Dr. Shaffer was met with the response not merely that it was then unavailable to him but, additionally, that his employer (Westinghouse) deemed it to be confidential and thus immune from disclosure (at least in the absence of a protective order).

It is difficult to comprehend what might have led the applicant to believe that this state of affairs would be thought acceptable by us. Manifestly, it will not do for an expert witness to state his ultimate conclusions on a crucial aspect of the issue being tried and then to profess an inability—for whatever reason—to provide the foundation for them to the decision-maker as well as the other litigants. Indeed, a trier of fact would be derelict in the discharge of its responsibilities were it to rest significant findings on expressions of expert opinion not susceptible of being tested on examination of the witness. A licensing board decision suffering from such an infirmity would be a fit candidate for reversal. Where, as here, an appeal board has assumed *ab initio* the role of fact finder, there is no less an obligation to insure that

reason exists for confidence in the validity of any testimony relied upon in determining those issues crucial to the outcome.

It follows that, absent access to the probability values utilized in Dr. Shaffer's fault tree (and the data from which they were derived), we would be compelled to attach virtually no weight to Dr. Shaffer's testimony insofar as it was nourished by the fruits of that tree. Although it may be that now—several weeks after the hearing concluded—such access will be provided, the applicant would have found itself in a most awkward position had another of the parties to this proceeding evinced an interest in probing the basis for Dr. Shaffer's conclusions. The inability of the witness to have provided that basis might well have necessitated the striking of portions of his testimony; at the very least, the hearing would have had to be adjourned to await the availability of the supporting information and to provide time thereafter for its digestion.

To avoid possible misunderstanding of the reach of the message sought to be conveyed, we do not suggest that a witness testifying to the results of an analysis must have at hand every piece of datum which was utilized in performing that analysis. Obviously, any such requirement would impose an insuperable—and unnecessary—burden. In this area, as in others, a rule of reason must be applied. It is not unreasonable, however, to insist that where, as here, the outcome on a clearly defined and substantial safety or environmental issue may hinge upon the acceptance or rejection of an expert conclusion resting in turn upon a performed analysis, the witness make available (either in his prepared testimony or on the stand) sufficient information pertaining to the details of the analysis to permit the correctness of the conclusion to be evaluated. We shall expect litigants and licensing boards alike to bear this in mind in the future.

B. Moving on now to Westinghouse's claim of entitlement to a protective order, it appears that Dr. Shaffer's affidavit was prepared with reference to our decision in *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-327, 3 NRC 408, 416-18 (1976).⁶ We there held that one asserting such entitlement must demonstrate, *inter alia*, that the information in question is of a type customarily held in confidence by its originator; that there is a rational basis for having customarily so treated the information; and that the information has, in fact, been kept in confidence and is not to be found in public sources. As previously noted, the averments in the Shaffer affidavit touch upon each of these points.

The difficulty with the affidavit is that it does not even attempt to explain the basis for Dr. Shaffer's knowledge on the essential matters as to which he has attested. The affiant states merely that he is a "Consulting Mathematician" employed by Westinghouse, that he had been "authorized

to execute this Affidavit” and that he had been supplied the “proprietary” data in confidence. While all this may be true, it scarcely establishes the basis for his *personal* knowledge (if any) respecting the policies and practices of Westinghouse with regard to preserving the confidentiality of information said to be proprietary in nature. Presumably those policies and practices are not formulated or (except perhaps secondarily) implemented by persons employed to perform mathematical analyses. Nor have we been given any reason to suppose that one in Dr. Shaffer’s position likely is equipped to offer an informed judgment regarding whether the public disclosure of certain information would or might “operate to Westinghouse’s competitive disadvantage.”

In a nutshell, for all that appears from his affidavit Dr. Shaffer was simply recounting what he had been told by other officials or employees of the company who possessed personal—as opposed to merely derivative—knowledge on each of the matters encompassed by the affidavit. Accordingly, we might well disregard the affidavit entirely on the ground that it was not shown to have been executed by a qualified individual. Although, in situations such as this, it may not be necessary to have the chief executive officer of the company serve as the affiant, there surely is ample warrant to require that facts pertaining to management policies and practices be presented by an official who is in a position to attest to those policies and practices (and the reasons for them) from personal knowledge.

Because no party has interposed an objection, we are nonetheless now granting the Westinghouse request for a protective order in the interest of obtaining the requested information without untoward further delay. In doing so, however, we explicitly decline to find that Westinghouse has met its burden of showing that the information in question is proprietary in character and entitled to protection from public disclosure under the standards set forth in *Wolf Creek*, ALAB-327, *supra*. Nor should our action be taken as a precedent for future cases in which relief may be sought from an adjudicatory board based upon an affidavit containing the deficiencies evident in the one now before us.

In accordance with the foregoing, Westinghouse is promptly to submit to this Board and the NRC staff copies of two one-page tables entitled, respectively, “Basic Event Service Experience” and “Basic Event Probabilities.” The submission shall be subject to the following terms and conditions set forth in the second and third paragraphs of Westinghouse’s proposed order:

The Board hereby grants the request for entry of a protective order and

orders and authorizes the use of the Westinghouse [assertedly] proprietary information described above for the sole purpose of the review of the turbine missile issue in this proceeding. Westinghouse shall submit three numbered copies of the aforementioned tables to the Appeal Board and two numbered copies to the NRC Staff for review.⁷ No one shall be permitted to make copies of the aforementioned tables. No disclosure of the [assertedly] proprietary information described above shall be made outside the United States Nuclear Regulatory Commission or to anyone within the Commission who is not taking an active part in the review of such information.

At the close of these proceedings, all copies of the subject Westinghouse [assertedly] proprietary information shall be returned by each named copy recipient to:

Westinghouse Electric Corporation
Nuclear Energy Systems
P.O. Box 355
Pittsburgh, Pennsylvania 15230
Attention: T. M. Daugherty, Counsel

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁷Although the Westinghouse proposed order did not specify to whom the NRC staff copies should be submitted, we assume that the company had in mind staff counsel of record in the proceeding.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**PUGET SOUND POWER AND
LIGHT COMPANY, et al.**

**Docket Nos. STN 50-522
STN 50-523**

**(Skagit Nuclear Power
Project, Units 1 and 2)**

July 30, 1979

The Appeal Board denies intervenors' motion to disqualify the Chairman of the Licensing Board from further participation in the proceeding.

DISQUALIFICATION: STANDARDS

An appearance of prejudice is as much a ground for disqualification as is prejudice itself. *Commonwealth Edison Co.* (LaSalle County Nuclear Power Station, Units 1 and 2), ALAB-102, 6 AEC 68, 71 (1973).

DISQUALIFICATION: STANDARDS

A party's failure to move for disqualification once the information giving light to the claim is known amounts to a waiver of the disqualification objection. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-101, 6 AEC 60, 63 (1973).

RULES OF PRACTICE: STANDING

For a party to have standing to move the disqualification of a Board member, an invasion of its rights must be present.

DISQUALIFICATION: STANDARDS

Personal bias is one of the recognized grounds for disqualifying a Board member.

**Mr. Eric Stachon, Boring, Oregon, for the movants,
Forelaws on Board and Coalition for Safe Power.**

MEMORANDUM AND ORDER

On July 17, 1979, pursuant to prior notice, the Licensing Board commenced an evidentiary hearing session in Seattle, Washington, to examine certain of the issues presented in this construction permit proceeding. Following the presentation of limited appearance statements, intervenors Forelaws on Board and Coalition for Safe Power tendered a motion to disqualify the Chairman of that Board from further participation in the proceeding (Tr. 12,112). The motion was accompanied by the affidavit of intervenors' representative, Eric Stachon. The next day, July 18, the Licensing Board referred the motion to us under 10 CFR 2.704(c), with the notation that it "did not grant the motion, and its Chairman did not remove himself."¹ For the reasons hereinafter stated, we deny the motion.

A. It appears from Mr. Stachon's affidavit that the disqualification motion relates exclusively to the course pursued by the Licensing Board in the wake of the action taken by us last January on an untimely petition for leave to intervene which had been filed in this proceeding by three Indian tribes. On an appeal by the applicants, we had vacated the decision of the Licensing Board which had granted the tribes' petition² and had remanded the matter for further consideration. Unpublished order of January 12, 1979, explained in ALAB-523, 9 NRC 58 (1979).

According to the Stachon affidavit, following the issuance of our remand order the Licensing Board Chairman had stated that the Board would expedite its reconsideration of the tribes' intervention petition although the licensing proceeding would continue to move forward while that reconsideration was in progress. The affidavit then recites that the expedition commitment had not been honored. More specifically, the Board did not issue its written order denying the tribes' petition until June 1, 1979.³ While

¹Section 2.704(c) makes such a referral obligatory in circumstances where the motion is not granted by the Licensing Board and the Board member in question does not recuse himself.

²LBP-78-38, 8 NRC 587 (1978). At virtually the same time that decision was rendered, the then Chairman of the Licensing Board retired. On November 27, 1978, he was replaced by the present Chairman.

³ LBP-79-16, 9 NRC 711.

an announcement of the denial had been made during a conference with the parties held on April 24, the Board Chairman had then indicated that the appeal period would not begin to run pending the rendition of a written order in explanation of the ruling.⁴

In the view of Mr. Stachon (affidavit, pp. 3-4), the Licensing Board Chairman's "lack of desire in resolving the Indian issue, while at the same time taking action to speed up the ultimate conclusion of the proceedings, has severely prejudiced the rights of the petitioning tribes." Beyond that, we are pointed to the statement in the Licensing Board's June 1 order⁵ that the tribes' success several years ago in a judicial proceeding involving their fishing rights "might have energized [them] to try another legal battleground" The Stachon affidavit (at p. 4) would have it that this statement, with its reference to Indians and battlegrounds, "conjures up visions of the white man's stereotyped image of Native Americans as 'savages'."

From all of this, Mr. Stachon concludes (*ibid.*) that the Board Chairman's "words, as well as his actions, constitute grounds for his removal." In this contention, we are reminded of our observation several years ago that "an *appearance* of prejudgment is as much a ground for disqualification as is prejudgment itself." *Commonwealth Edison Company* (LaSalle County Nuclear Power Station, Units 1 and 2), ALAB-102, 6 AEC 68, 71, *reversed on other grounds*, CLI-73-8, 6 AEC 169 (1973).

B. Apart from its untimeliness,⁶ there are at least two independent reasons why the disqualification motion is wholly insubstantial.

1. To begin with, the intervenors do not assert any invasion of their own rights; rather, as we have seen, the claim is that the Licensing Board Chair-

⁴On May 15 the tribes filed a motion to expedite the issuance of the written order to enable them to prosecute their appeal from the denial of intervention. Once the order did issue on June 1, a timely appeal was taken from it. For the reasons set forth in ALAB-552, 10 NRC 1 (July 9, 1979), our ultimate disposition of the appeal must await supplemental briefing.

⁵LBP-79-16, *supra*, 9 NRC at 713.

⁶"The Failure of a party to file a motion for disqualification once the information giving light to such a claim is available to him amounts to a waiver of the disqualification objection." *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-101, 6 AEC 60, 63 (1973), citing *Gilligan, Will & Co. v. SEC*, 267 F.2d 461, 468 (2nd Cir. 1959). See also, *Commonwealth Edison Company* (Zion Station, units 1 and 2), ALAB-226, 8 AEC 381, 384 (1974); *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 247 (1974). In this instance, the intervenors sat back until the commencement of an evidentiary hearing session—more than six weeks after the June 1 order issued—before filing the disqualification motion. Because of that unexplained delay, the Licensing Board and its Chairman were deprived of an opportunity to consider the motion prior to the hearing.

man “severely prejudiced the rights of the petitioning tribes.”⁷ Yet the intervenors do not explain the basis for their standing to complain on the tribes’ behalf. And if such basis exists, it is not immediately obvious to us. The tribes are represented by competent counsel, who have taken an appeal from the Licensing Board’s June 1 order (see fn. 4, *supra*). Had counsel believed that, in connection with the reconsideration of the tribes’ petition, the Board Chairman had conducted himself in a manner warranting his disqualification, it is reasonable to suppose that they would have said so.⁸ Be that as it may, there is nothing to indicate that the tribes have clothed these intervenors with the authority to speak for them. (Assuredly, the intervenors’ status as parties to the proceeding does not of itself make them the spokesmen for others.)

2. Secondly, the recitations in the Stachon affidavit fall far short of establishing that the Licensing Board Chairman might have prejudged facts relevant to the outcome of the Board’s reexamination of the tribes’ intervention petition in accordance with the instructions contained in ALAB-523. Indeed, the total absence of even a hint of possible prejudice in the content of the affidavit prompts the suspicion that Mr. Stachon (a layman) actually meant to convey the thought that the Board Chairman had manifested personal bias against the tribes—another of the recognized grounds for disqualification.⁹ But to give the intervenors the benefit of all doubt in that regard does not assist their motion. For, even viewing the Licensing Board’s course of conduct pertaining to its reconsideration of the tribes’ intervention petition in the light most favorable to the motion (and additionally assuming for present purposes that the Board Chairman dictated that course), there is manifestly insufficient evidence of bias.

One may readily agree that the Board below both might and should have acted on the remand with considerably greater dispatch. Although our January 12 order may not have more than briefly outlined the foundation for our conclusion that the prior disposition of the tribes’ petition had been erroneous, it did clearly apprise the Board below (at p. 2) of what was expected of it on the remand; *viz.*, “the Board must now reconsider the intervention petition, this time determining, first, whether the Indian tribes had a good excuse for their late filing and, second, how the other factors

⁷This theme is repeated at the end of the Stachon affidavit (at p. 4): “There is no doubt that, at the very least, [the Board Chairman] appears to have prejudiced the rights of the petitioning tribes and has caused them needless harassment”.

⁸Although the tribes are not now parties to the licensing proceeding, they obviously had the right to seek to disqualify a Licensing Board member from participation in any aspect of the proceeding which related directly to them.

⁹See *Midland*, ALAB-101, *supra* n. 6, 6 AEC at 64.

relevant to late intervention petitions¹⁰ weigh in the balance.” Even if it be nonetheless assumed that the Board had warrant to await the issuance of ALAB-523 (in further explanation of the January 12 order) before embarking upon this task, that event occurred on January 29. To be sure, the tribes thereafter asked the Commission to review our decision. That development did not, however, operate to stay the effectiveness of the instructions which we had given the Board below. Moreover, when on March 8 it announced that it would not act upon the petition for review until after the completion of the proceedings on the remand, the Commission expressly directed that the Board “consider the matter expeditiously.” Yet another twelve weeks elapsed before the Board issued its written order illuming the basis for its denial of the petition.¹¹ This was so even though there was no additional briefing or argument and, as noted in ALAB-523 (9 NRC at 63), at least the two technical members of the Board were familiar with the history of the proceeding as it might bear upon the application to the tribes’ petition of the criteria governing late intervention attempts.¹²

But these considerations are of no present moment. Standing alone, the failure of an adjudicatory tribunal to decide questions before it with suitable promptness scarcely allows an inference that the tribunal (or a member thereof) harbors a personal prejudice against one litigant or another. Nor are there any attendant circumstances which would permit that inference to be drawn in the case of the tribes here. Indeed, if anything, it would appear that it is the applicants—and not the tribes—who have the most to lose by reason of the seeming tardiness of the entry of the June 1 order. For, should we eventually reverse that order and direct the grant of

¹⁰Those factors are spelled out in 10 CFR 2.714(a).

¹¹We do not regard the Board’s April 24 oral announcement of the result it had reached to have constituted the full measure of the action required on the remand. As the Board itself recognized, it was obliged to spell out the reasons underlying the denial of the tribes’ intervention petition and, until that obligation had been fulfilled, the tribes could not invoke their appellate remedy.

¹²We have not overlooked that the members of the Licensing Board undoubtedly had many other demands upon their time during the four and a half month interval between January 12 and June 1. Nonetheless, it seems to us, as it obviously did to the Commission as well, that the resolution of the question of the tribes’ entitlement to intervention at this late stage of a licensing proceeding initiated years ago justified priority attention, especially inasmuch as the Board had decided—quite understandably—not to hold up the progress of the proceeding in the meanwhile. Our belief in this regard is not at all affected by the fact that the Board ultimately ruled against the tribes. The Board had every reason to expect that the tribes would seek appellate review and, no matter its level of confidence that the ruling was correct, also had to appreciate that at least the possibility existed that we (or the Commission) might decide the question differently. And, as it has turned out, we have found it necessary to withhold action on the tribes’ appeal pending the receipt of additional information which appeared to us to be germane to its proper disposition. See n. 4, *supra*.

intervention to the tribes, the very possible consequence will be a still further extension of this already protracted proceeding.

What that leaves is the intervenors' quarrel with the Licensing Board's employment in the June 1 order of the term "legal battleground." See p. 32, *supra*. Whether or not we would have selected the same metaphor (in the course of making what seems to us to have been a reasonable point),¹³ we reject summarily Mr. Stachon's thesis that its choice by the Board below must be taken as a calculated insult to Indians in general and the tribes herein involved in particular. Adjudicatory contests are quite commonly thought of as "legal battles"; thus viewed, they are waged on "legal battlegrounds." This being so, we believe there to be no room for legitimate suggestion that, in the context of litigation involving Indians, that figure of speech has such offensive connotations as to warrant the presumption that animus undergirded its use.¹⁴

The referred motion to disqualify the Chairman of the Licensing Board is *denied*.¹⁵

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Mr. Farrar's review of the intervenors' motion and supporting affidavit satisfied him that no cause has been presented therein to disqualify the Chairman of the Licensing Board. He did not, however, participate in the preparation of this opinion.

¹³ See ALAB-552, *supra* n. 4, 10 NRC at 6.

¹⁴It is worthy of passing note that, in their brief in support of the appeal from the June 1 order (at p. 3), the tribes took mild exception to the Licensing Board's use of the verb "energized" which was contained in the same sentence of the order (see p. 32, *supra*). They did not assert, however, that the choice of that word was a manifestation of prejudice against them; nor were they critical of the employment of the term "legal battleground."

¹⁵Before referring the motion to us, the Licensing Board invited the parties to present orally their position on it. See Tr. 12,114 (July 17), 12,150-60 (July 18). We perceived no necessity to call for a written elaboration of the views expressed in response to that invitation. Suffice it to say that, although there was not total agreement on the question of the intervenors' standing to complain of the treatment accorded the tribes, none of the other parties urged that the motion should be granted.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Ivan W. Smith, Chairman
Glenn O. Bright, Member
Dr. J. Venn Leeds, Member

In the Matter of

**CAROLINA POWER AND LIGHT
COMPANY**

Docket Nos. 50-400
50-401
50-402
50-403

(Shearon Harris Nuclear
Power Plant, Units 1, 2, 3,
and 4)

July 13, 1979

Upon remand from the Commission, the Licensing Board finds that the licensee had the management capability to construct the plant properly, but conditions the construction permit to require that the licensee demonstrate, in a public hearing during the operating license proceeding, that it is technically qualified to operate the facility safely.

OPERATING LICENSES: MANAGEMENT CAPABILITY

Evaluation of management capability to construct a nuclear power plant calls for consideration different from that of management capability to operate a nuclear plant safely. Management capability to operate a nuclear plant requires a greater showing of technical qualification and management capability. Therefore, operating experience is very important to this consideration.

**SUPPLEMENTAL INITIAL DECISION
(Construction Permit)**

Appearances

Richard E. Jones, Esq., George F. Trowbridge, Esq.
and **John H. O'Neill, Esq.**, for the Applicants.

Thomas Erwin, Esq., and Larkin Kirkman, Esq., for
the Intervenors.

David Gordon, Esq., and Dennis P. Meyers, Esq., for
the State of North Carolina.

Edwin J. Reis, Esq., for the U.S. Nuclear Regulatory
Commission.

TABLE OF CONTENTS

I.	Preliminary Statement and Summary of Remanded Proceeding	39
	A. Background	39
	B. Summary of Decision	41
	C. Nature of the Evidence Received	43
II.	Findings of Fact	45
	A. Analysis of CP&L's Management	45
	1. Management Organization and Training Program	45
	2. NRR's Review of CP&L's Quality Control and Management Capability	47
	3. Management Attitude	51
	B. CP&L's Management Performance	56
	1. Inspection	56
	2. CP&L's Construction Experience	59
	3. CP&L's Operating Experience	63

(a)	Operations QA Program	63
(b)	Radiation Protection, Security and Inservice Inspections	67
(c)	General Statistical Trends	71
(d)	Mr. Cantrell's General Concerns	74
(e)	Specific Episodes and Conditions of Operation	78
III.	Conclusions and Reasons For Decision	95
IV.	Order	98

Attachment — List of Exhibits

**SUPPLEMENTAL INITIAL DECISION ON REMANDED ISSUE
(Construction Permit)**

**I. PRELIMINARY STATEMENT AND SUMMARY OF
REMANDED PROCEEDING**

A. Background

1. During the construction permit proceeding the Licensing Board requested the Staff to present testimony about Carolina Power and Light Company's experiences with its other nuclear plants and how those experiences relate to its management capability to construct and to operate Shearon Harris.¹ In response, the Staff presented a panel of two witnesses, Messrs. Brownlee and Dance of the Office of Inspection and Enforcement (I&E). Mr. Dance testified that CP&L had experienced some problems, especially with operating its Brunswick plant, but that it had benefited from its experiences and had strengthened its organization at Shearon Harris. Tr. 2074-2079. The Board concluded that the Applicant was technically

¹Board questions dated January 23, 1975 and August 20, 1977. Of particular relevance were:

1. What is the Staff's evaluation of the management capabilities of CP&L which have been observed during construction and operation of CP&L's other nuclear plants? How does CP&L compare with other licensees?
2. What particular experiences, both good and bad, has CP&L had with management of nuclear plants? How have these experiences been utilized to improve the management capabilities of CP&L?
3. Have sufficient additional personnel been added to CP&L to adequately manage the Harris plant?

qualified and that its experience with other nuclear plants did not constitute an impediment to a construction permit which we authorized by the Initial Decision of January 23, 1978. 7 NRC 92, 106-109 (1978).

2. While the proceeding was pending before the Appeal Board, counsel for the Staff, on April 18, 1978 advised the Appeal Board that Mr. Cantrell, the principal I&E inspector at the Brunswick plant, felt that his views, unfavorable to CP&L, had not been adequately presented to the Licensing Board. Counsel forwarded Mr. Cantrell's notes which had been prepared to assist Mr. Dance in writing his part of the testimony. In ALAB-490, dated August 23, 1978, the Appeal Board affirmed the initial decision but commented critically upon the witnesses' testimony in light of Mr. Cantrell's statements, and this Board's ". . . seeming ready willingness to accept [the testimony] without further exploration of its foundation." 8 NRC 234, 242-244 (1978).

3. Following ALAB-490, on August 30, 1978, the members of this Board wrote to the Commissioners stating that we believed that the incident raised important questions about the integrity of the NRC adjudicative process. We stated that we believed that the omission of Mr. Cantrell's views from the testimony was significant and misleading, and that we had expected a remand. See Board Exhibit 10 at pp. 4-10.

4. On September 5, 1978, the Commission remanded the proceeding to the Licensing Board for a further hearing on the management capabilities of CP&L to construct and operate Shearon Harris without undue risk to the health and safety of the public. 8 NRC 293, 294 (1978). The Commission also directed the Office of Inspector and Auditor (OIA) to inquire into the seriousness of the matter, report to the Commission, make the report public, and to file a copy of the report with the Licensing Board for assessment by the parties. *Id.* OIA did all of this.

5. The Licensing Board conducted an evidentiary hearing on the remanded issue and, in this supplemental initial decision, we dispose of the issue. The hearing on remand was not limited to Mr. Cantrell's concerns although they were thoroughly considered. The Staff and the Applicant presented evidence on additional circumstances that each believed to be materially relevant to the remanded issue. Some of the evidence was presented at the Board's request. The testimony before the Board was from high-level CP&L management and a broad spectrum of NRC Staff. The Intervenors and the Attorney General of North Carolina actively participated but they did not file proposed findings of fact. All witnesses were thoroughly examined, including extensive examination by the members of the Board.

B. Summary of Decision

6. In our decision below we evaluate CP&L's management capacity and qualifications both analytically and empirically. What does CP&L management look like? How well does it perform?

7. CP&L seems to have a rational management organization with concerns for nuclear plant safety expressed at the highest levels. It has a strong quality assurance organization independent from operational and construction functions. The QA organization has regular independent access to the Chief Operating Officer and, if needed, to the Chairman of the Board. CP&L has a modern well-supported training program which includes a new training center and a computerized PWR simulator. Management appears to be committed to nuclear safety in attitude and resources.

8. But a note of caution. The Staff has no specific quantitative guidelines for determining whether an applicant has the management capability to undertake the construction or operation of a nuclear reactor. Nor could we devise specific guidelines. A determination on this subject must be subjective and judgmental and each utility must be evaluated individually. The best test is a functional one. Here, too, there are problems. CP&L's performance experience is not necessarily the product of the present management. Management has recently changed, and, in the view of CP&L, has been strengthened. Moreover, management will continue to change. The Chairman of the Board and the Chief Operating Officer will soon retire. Its present management structure may be temporary. Yet, Shearon Harris would operate for decades if licensed.

9. The NRC has about ten years' experience with CP&L's nuclear construction activities beginning with H. B. Robinson, through Brunswick and now with Shearon Harris. In building Shearon Harris, CP&L has, for the first time, assumed direct control of plant construction. Construction has been underway for several years. There have been two "infractions" and one "deficiency" reported. The Staff states that these have been random in nature and not indicative of management failure or defects in the QA program.

10. Even though the standards for evaluating a utility's management capability to construct a safe nuclear plant may not be capable of precise quantification, the Staff believes that it can recognize a good management organization when it sees one and it approves of CP&L's management. Moreover, under the NRC construction inspection program, it is not necessary to depend entirely upon a subjective assessment of management capability.

11. Construction quality assurance criteria are specific. NRC inspectors possess a wide variety of engineering and technical disciplines. They actual-

ly observe the craftsmen and verify construction work as it progresses. By the use of sampling techniques, inspection of quality assurance and quality control programs, inspection of vendors, auditing of contractors, by employing identified inspection hold points and other methods, NRC inspectors independently confirm that a plant has been built to safety standards.

12. Considering a combination of the actual experience with the construction of Shearon Harris, CP&L's apparently rational corporate management, nuclear safety and quality assurance organizations, and the ability of the NRC to verify quantifiably the soundness of Shearon Harris construction, we conclude below that CP&L has the management capability to construct the plant properly.

13. Management capability to safely operate a nuclear plant is a different consideration. The Staff has not been able to devise a method for evaluating nuclear power plant safety performance so that it can be measured against specific standards. The qualifications for operating a plant are largely functional in nature compared to the discreet engineering disciplines used in construction (such as mechanical, electrical, civil, seismic). Quality assurance criteria are not so precise. Unlike construction, mistakes in actual operation may not be detected at specified inspection hold points. Technical qualifications and reliable safety performance, independent of NRC inspections, are much more important in operations because of the inherent seriousness of operational error. We regard plant operation to require a greater showing of technical qualification and management capability compared to plant construction. Therefore operating experience is very important to our consideration.

14. "Good" operating experiences are seldom if ever reported. Reporting requirements and inspection programs are designed to disclose non-compliances. CP&L received a civil penalty, no violations, many infractions, and a substantial number of lesser noncompliances in the operation of its nuclear plants. Not all noncompliances reflect upon management. On the other hand, some circumstances which are not official NRC non-compliances reflect, in our view, unfavorably upon CP&L performance record. Whether these noncompliances and other occurrences have been so numerous and so important as to reflect upon CP&L's overall management capability and technical qualifications is a very judgmental consideration.

15. From CP&L's point of view, it recognizes that problems existed but states that it has been without fault because it was beset with unpredictable circumstances, particularly an enlargement of regulatory requirements. Applicant contends also that while its operations fell below its own high standards, it has always complied with NRC safety requirements, and, further, it has fully recovered from its earlier problems.

16. The Staff is critical of CP&L's handling of certain situations, but believes it has improved and that no condition to the construction permit is required. However, the Staff's evaluation depends upon continuing improvement.

17. Among other things, we find below that CP&L sometimes has been slow in responding to safety requirements and that it failed to plan adequately for the startup of Brunswick, its most recent nuclear plant to come on line. We do not dwell long on whether this has been a question of fault on the part of management. "Fault" is too difficult to define and to identify. But we conclude that in the public interest, the construction permit should be conditioned to require that CP&L demonstrate in a public hearing during the operating license proceeding that it is then or timely will be technically qualified to operate Shearon Harris safely. We do not otherwise disturb the construction permit.

C. Nature of the Evidence Received

18. In support of its direct case the Staff presented an array of NRC staff witnesses from Region II of the Office of Inspection and Enforcement (I&E) and Washington-based officials from the Office of Nuclear Reactor Regulation (NRR). Staff Panel I, representing Region II of I&E, consisted of Mr. Long, Chief, Reactor Operations and Nuclear Support Branch; Mr. Murphy, Chief, Reactor Construction and Engineering Support Branch; Mr. Brownlee, Quality Assurance Engineer; and Mr. Dance, Chief of a Reactor Project Section. This panel explained the functions of the Office of Inspection and Enforcement, and how testimony was prepared in this and other proceedings.

19. Staff Panel II consisted of I&E construction specialists from Region II including Messrs. Murphy and Brownlee who were joined by Mr. Bryant, Engineering Support Section Chief; Mr. Herdt, Project Section Chief; and Mr. McFarland, Principal Inspector in the Projects Section. Panel II testified concerning CP&L construction experience and I&E's assessment of its management and technical capacity to construct Shearon Harris.

20. Messrs. Long and Dance appeared again in Staff Panel III, and, as operations specialists, testified concerning CP&L's operating experiences and I&E's assessment of CP&L management and technical capacity to operate nuclear plants.

21. The members of Staff Panel IV were Mr. Minor, the NRR licensing project manager for Shearon Harris; Mr. Haas, Quality Assurance Branch Chief, Office of NRR; Mr. Schwencer, Operating Reactor Branch Chief, NRR; and Mr. Allenspach, a quality assurance engineer with the NRR Project Management Division. Panel IV testified concerning the role of the Of-

office of Nuclear Reactor Regulation in the licensing process and how that office determined the sufficiency of CP&L's technical and managerial capacity.

22. The Staff also presented the testimony of individual I&E inspectors with actual inspection experience with CP&L's nuclear plants. These witnesses included Mr. Cantrell, the inspector whose concerns resulted in the remand. Mr. Cantrell, at the Board's request, observed the entire evidentiary hearing on the remanded issue. He also participated with Staff counsel in the cross-examination of Applicant's witnesses, and was permitted to counsel the Board about his view of the evidence.

23. Also in support of its case, the Staff presented exhibits which included computer printouts of inspection summaries at CP&L facilities, (Staff Exh. 12), a computer printout of Licensee Event Reports (Staff Exh. 13) and several series of NRC-CP&L correspondence concerning various inspections.

24. For its case, Applicant presented the testimony of several top CP&L officers, Mr. Jones, Senior Executive Vice President and Chief Operating Officer; Mr. Utley, Senior Vice President in charge of Power Supply; Mr. Banks, Manager of Nuclear Generation; and Mr. McDuffie, a Senior Vice President, Engineering and Construction. These witnesses presented individual written testimony and testified orally as a panel concerning all aspects of the remanded issue. Applicant also presented as a panel Messrs. McManus, Loflin, and, again, Mr. Banks who are respectively the present and previous CP&L Managers for Corporate Nuclear Safety and Quality Assurance Audit. Applicant's documentary presentation included its Operations Group Manual (App. Exh. GG) and description of its training program (App. Exh. HH). The Board accepted as its own exhibits *inter alia* the three volumes of the report of the Office of the Inspector and Auditor (Bd. Exh. 9-11), and a Staff document, "Board Notification-Licensee Regulatory Performance Evaluation" (Bd. Ex. 8).

25. We have dwelt at some length upon the nature of the evidence received in the remanded hearing because we believe the reliability of the evidence is an especially important consideration. The quality of the testimony presented by the Staff is excellent. The Staff witnesses were correctly selected and well-balanced for our purposes. Together they demonstrated thorough knowledge of the facts in issue, expertise in the subject matter, and the authority to testify concerning the position of their respective organizations.

²A complete list of exhibits received in the remanded hearing is appended hereto. Staff's unopposed motion dated March 30, 1979 to receive Staff Exhibits 12, 13, 14, 16, 19, and 20 is granted.

26. The quality of the testimony presented by CP&L was good. Their witnesses were high ranking and spoke authoritatively for Applicant. Their expertise was sound. However, in several instances, as we specifically discuss below, it appeared that Applicant's witness had an incomplete command of the details of some of the factual issues. In each instance where testimony or evidence was requested by the Board, the response from both Staff and Applicant was, as far as we can determine, complete and accurate.³

II. FINDINGS OF FACT

A. Analysis of CP&L's Management

1. Management Organization and Training Program

27. At the hearing commencing on February 27, 1979, it was established that CP&L has divided its corporate organization into two main areas, administration and operations. J. A. Jones was Executive Vice President and Chief Operating Officer for CP&L. Jones following Tr. 3494, pp. 9-11, 26-29. Reporting to Mr. Jones were three Senior Vice Presidents (M. A. McDuffie, Engineering & Construction Group; E. E. Utley, Power Supply Group; and W. J. Ridout, Customer & Operating Services Group) and a Department Head (W. W. Morgan, Systems Planning & Coordination Department). Jones, pp. 13-15.

28. Subsequent to the hearings, CP&L supplemented that testimony, with consent of the parties, to report changes in the CP&L's management

³Citations to oral testimony are given to transcript pages by the notation, "Tr.;" for example—"Jones Tr. 3569." Citations to prefiled written testimony are given by the notation, "p." or "pp.;" for example—"Staff Panel IV pp. 9-12." Prefiled written testimony appears after the following transcript pages:

NRC Staff Witnesses:

Staff Panel I	(Long, Murphy, Dance, and Brownlee)	— Tr. 2198
Staff Panel II	(Murphy, Bryant, Herdt, Brownlee, and McFarland)	— Tr. 2539
Staff Panel III	(Long and Dance)	— Tr. 2937
Staff Panel IV	(Miner, Haass, Schwencer, and Allenspach)	— Tr. 3260
Wilber		— Tr. 2836
Cantrell		— Tr. 3347

Applicant's Witness:

Jones		— Tr. 3494
Utley and Banks		— Tr. 3502
McDuffie		— Tr. 3505
McMannus		— Tr. 3769

organization which were approved by its Board of Directors on May 16, 1979. Applicant Exhibit PP.⁴ Mr. Jones was promoted to Senior Executive Vice President and he continues as Chief Operating Officer. Reporting to him are Executive Vice President, E. E. Utley (responsible for the Power Supply and Customer Services Groups), and the Senior Vice President—Engineering and Construction Group, M. A. McDuffie. Reporting to Mr. Utley are two Senior Vice Presidents (D. V. Menscer, Power Supply Group; and W. J. Ridout, Customer & Operating Services Group). Applicant's Exhibit PP at 2, Fig. B.

29. Effective September 1, 1979, a new Nuclear Safety and Research Department will be headed by Dr. Thomas S. Elleman, who presently is Chairman of the Department of Nuclear Engineering at North Carolina State University. As a Vice President of CP&L, he will be responsible for the functions of Corporate Health Physics and Corporate Nuclear Safety and Quality Assurance, in addition to research functions within the company. The director of Corporate Health Physics and the manager of Corporate Nuclear Safety and Quality Assurance Audit will also continue to have direct access to Mr. Jones. Applicant Exhibit PP at 3.

30. CP&L is engaged in active training programs to train people both to construct and operate the Harris facility. Utley & Banks, pp. 73-76; McDuffie, pp. 38-39. Further Applicant is engaged in substantial efforts to recruit an adequate staff to operate Harris. Utley & Banks, pp. 84-97.

31. In anticipation of the large numbers of technical and craft persons which will be required by CP&L for the Harris Plant and other plants in the future, CP&L has established a centralized training facility at the Harris Energy and Environmental Center located near the Shearon Harris plant site. Utley-Banks, p. 91. CP&L submitted a synopsis of the long-range training plans for its Generation Department and the schedule of implementation of its training program. Applicant's Exh. HH. A PWR simulator has been installed at the Harris Energy and Environmental Center and is being used. Operations personnel from the Robinson Plant are presently receiving "hot" license training and retraining on the PWR simulator. Some of these personnel will be available for the operation of Harris. This simulator will be used for the operation of Harris. This simulator will be used extensively in training personnel for the Harris Plant. Utley-Banks, p. 75. There is no "certification" of the training center or simulator by the NRC, but the regional operating license examiner has evaluated the center and reports that it is acceptable. Long, Tr. 2947, 3218.

32. At the Harris site CP&L has provided a craft training coordinator whose full-time assignment is to coordinate and monitor the on-site training

⁴Applicant's Exhibit PP is received into evidence.

programs. At the time of the hearing 468 craftsmen had completed training and 165 more were enrolled. With CP&L's approval and encouragement, Daniel International has also established training in several craft areas. McDuffie, pp. 38-39. CP&L's direct participation in craft training is an improvement over the situation at the Brunswick Plant where formal training was limited to welding, which was under contractor control. McDuffie, pp. 38-39, Appendix 6, Tr. 3492. The Staff had reviewed Applicant's proposed training plans and believes they are adequate, with its personnel selection program, to assure that a qualified and capable operating staff will be available. Staff Panel IV, p. 19.

2. NRR's Review of CP&L's Quality Control and Management Capability

33. Under 10 CFR 50.40(b) the Staff is required to determine whether an applicant for a construction permit is technically qualified to engage in the proposed activities which, at this stage, are the design and construction of the proposed facility. The technical and managerial capability an applicant needs to have within his own organization varies over a broad range depending upon several factors. These are the utilization of previous designs, the development of new or unique design features, and the degree to which the utility either retains internally or contracts for design, engineering, and construction services and specialized consultants to undertake the details of the design and construction of the proposed facility. Staff Panel IV, p. 6. A review of these matters is done through NRR *Id.*

34. NRR also determines at the construction permit stage that the applicant has developed plans that provide reasonable assurance that a qualified and capable staff will be available for the operation of the facility. *Id.* at 20. Under 10 CFR 50.34(a) (6) an applicant is required to submit for review a preliminary plan for the organization, training of personnel and conduct of operations during the construction permit phase, and NRR makes such a review. Miner, Haass, Allenspach, Tr. 3335-36.

35. NRR evaluates each utility individually and makes a determination regarding the technical qualifications of that utility to undertake the activities that would be authorized by a construction permit. A finding by the Staff on this subject is subjective and judgmental in nature, and no specific quantitative guidelines are available for making this determination. Staff Panel IV, pp. 1-7. Utilities do not fall within discrete organizational descriptions; each is somewhat different. But if a utility fell without the bounds of normalcy the NRR Staff would recognize that. Allenspach, Tr. 3336-37.

36. The Staff has identified and defined the factors that are its bases for making the overall judgment regarding the Applicant's technical qualifica-

tions. Staff Panel IV, pp. 1-7. The specific items which were considered by NRR in evaluating CP&L's technical capability are:

1. the Applicant's organizational structure to design and construct the facility;
2. the experience and capability of the Applicant's technical staff;
3. the Applicant's performance during the licensing process in resolving problems and meeting NRC requirements;
4. the Applicant's quality assurance program;
5. the Applicant's past experience in the design and construction of nuclear plants or in activities of similar scope and complexity;
6. the past experience of the Applicant's principal contractors; and
7. the Applicant's organizational structure to operate the plant once it is built.

Staff Panel IV, p. 9.

37. NRR believes CP&L's structure provides clear lines of authority and divisions of responsibility for the Shearon Harris project and is thus acceptable in this regard. The CP&L Engineering and Construction Group, under a Senior Vice President, has the primary responsibility for the design and construction of the Shearon Harris facility. The functions of the Engineering and Construction Group are implemented through several departments. The Power Plant Engineering Department implements CP&L's responsibility for the design of the Shearon Harris facility. The Power Plant Construction Department implements CP&L's responsibility for the construction of the Shearon Harris facility. The Technical Services Department implements CP&L's responsibility for nuclear licensing and quality assurance activities for engineering, design, and construction activities for the Shearon Harris facility. Staff Panel IV, p. 10.

38. NRR reviewed the qualifications of key personnel associated with the Shearon Harris project. NRR states that these persons have extensive experience in their fields, including experience in nuclear power plant projects. In its judgment the manpower levels currently assigned, the availability of additional personnel, and the experience levels of key personnel are adequate for CP&L to carry out its responsibility for the Shearon Harris project. At the time of the NRR survey of CP&L, the Power Plant Engineering Department had a current roster of approximately 62 professionals of

which about 13 were assigned to the Shearon Harris project. Approximately 31 additional professionals were assigned to the project on an as-needed basis. The Technical Services Department had a current roster of approximately 94 professionals of which about 38 were assigned to the Shearon Harris project. Approximately 46 other professionals were assigned to the project on an as-needed basis. The Power Plant Construction Department had a current roster of approximately 112 professionals of which about 56 were then assigned to the Shearon Harris project. Approximately 21 other professionals were assigned to the project on an as-needed basis. Staff Panel IV, pp. 8-11.

39. The Applicant's quality assurance (QA) program for the design and construction of the plant must meet the provisions of Appendix B to 10 CFR 50. The Staff provides guidance in pertinent Regulatory Guides and endorsed standards.

40. The NRR staff has reviewed and approved the Applicant's QA program. A description of the Staff's evaluation of this program is presented in Section 15.0 of the Safety Evaluation Report and Supplement No. 2. Since the issuance of these documents, CP&L has further strengthened its program in later PSAR amendments by making commitments to numerous subsequently published Regulatory Guides on QA. A further strengthening of the QA commitment over and above those which appeared earlier in the PSAR have been the commitments made by Ebasco and Westinghouse to implement the QA provisions of their topical reports on QA; namely, Report Nos. ETR-001 titled "Ebasco Nuclear Quality Assurance Manual" and WCAP-8370 titled "Westinghouse Water Reactor Division Quality Assurance Plan." These reports include commitments relative to more recent Regulatory Guides in the QA area. Staff Panel IV, pp. 14-15.

41. By letter dated October 23, 1978, CP&L stated that they intend to make minor changes in their corporate QA program. The functional responsibility for performance of QA audits of Westinghouse and its vendors, Ebasco and its vendors and other outside contractors will be shifted from the Corporate Nuclear Safety and Quality Assurance Audit Section to the Engineering and Construction Quality Assurance Section. NRR has reviewed this change and finds that it satisfies Staff requirements and is therefore acceptable. To summarize, NRR has found and continues to find CP&L's commitments on QA in Section 1.8 of the PSAR to be acceptable. Staff Panel IV, pp. 9-15.

42. NRR considers a utility's past experience in the design and construction of nuclear power plants and its past experience in activities of similar scope and complexity. CP&L has been active in the nuclear field since 1956 when the company, in conjunction with several other utilities, formed the Carolina-Virginia Nuclear Power Associates, and built and operated the

Parr Nuclear Plant which was a prototype of a commercial size plant. In 1966, CP&L began work on the H. B. Robinson Nuclear Plant that went into commercial operation in 1971. In 1968 CP&L began work on the Brunswick Steam Electric Station. The two-unit Brunswick Station went into commercial operation in 1975 and 1976. As a result of its experience with these plants CP&L has strengthened their management and QA control for the Shearon Harris Project. NRR considers CP&L to be a utility with considerable learning experience in the design and construction of nuclear power plants. Staff Panel IV, p. 16. As we discuss further below, CP&L did not assume direct control of construction until it began its Shearon Harris plant. Therefore its construction experience prior to that time has been mainly one of observation, not practice.

43. Applicant's principal subcontractors, Westinghouse, Ebasco, and Daniels have wide experience in the design, fabrication, and construction of nuclear facilities. The past experience of these principal contractors indicates a capability to undertake a project of this magnitude and complexity. Staff Panel IV, pp. 17-18.

44. As stated, CP&L's organizational structure to operate the nuclear facility, at the construction permit stage, must indicate that adequate plans have been developed to assure that a qualified and capable operating staff will be available. The Staff reviewed and approved CP&L's proposed plans for selection and training of the personnel for the Shearon Harris facility. Staff Panel IV, pp. 19, 20. NRR conclusions are reported in Sections 12.1 and 12.2 of the Safety Evaluation Report and Section 12.2.1 of Supplement No. 3 to the Safety Evaluation Report. At the construction permit stage NRR reviewed and approved the Applicant's proposed plant staff organization, the qualification requirements for those plant staff positions, and as we discussed above pp. 15-17, the proposed training program for the plant staff members.⁵ Staff Panel IV, pp. 19, 20. At the operating license stage the NRR staff will review the CP&L organization to assure that it will provide an adequate organizational arrangement and operating staff. This review will include the organizational structure for the plant staff, the ongoing training program, qualification requirements, and qualifications for key plant staff personnel. After review and approval by NRR, I&E verifies that the staffing is being carried out in accord with requirements. Staff Panel IV, pp. 19-20.

45. At the *operating* license stage NRR will also review CP&L's QA program for operations to assure that the program provides for a comprehensive system of planned and systematic controls such that quality-related ac-

⁵ See finding on CP&L's training program, paragraphs 30 and 31 *supra*.

tivities for operations will be conducted in accordance with requirements. NRR has concluded that the CP&L has developed plans at the *construction* permit stage of review that provide reasonable assurance that a qualified and capable staff will be available for the operation of the Shearon Harris facility. During the operating license review, NRR will evaluate the Applicant's technical qualifications to operate the facility. Staff Panel IV, p. 19-20.

46. Based on NRR's evaluation as previously described, it is their conclusion that CP&L possesses the technical qualification to carry out its responsibilities with regard to the design and construction of the Shearon Harris facility. NRR has reviewed the information regarding the performance of CP&L on the Shearon Harris and other CP&L projects as described in Shearon Harris testimony prepared by the Region II staff of I&E and NRR's conclusions with regard to CP&L's technical qualifications remain the same. Staff Panel IV, pp. 16-20; Staff Proposed Findings ¶ 33, p. 17.

3. Management Attitude

47. The Senior CP&L corporate officers charged with the construction and operation of nuclear plants testified extensively at the evidentiary hearing and were cross-examined thoroughly by the Staff, Intervenors, and members of the Board. Tr. 3516-3767. The witnesses in their written and oral testimony were emphatic that top CP&L management officers are committed to quality control and nuclear safety. E.g. Jones, pp. 20-25, 31; Tr. 3636-38; Utley, Tr. 3599, 3702. An important aspect of their credibility was their forthright recognition that CP&L has experienced problems in the operation of their nuclear units. E.g. Jones, p. 4; Tr. 3575-77, 3585, 3614-15; Utley-Banks, pp. 31, 35, 52-53; Utley, Tr. 3531, 3535, 3599, 3602-03, 3610-15, 3624, 3628; Banks, Tr. 3617-18. We learned that the Chairman of the Board, as well as the Chief Operating Officer regularly become involved in matters of quality control and nuclear safety. Jones, Tr. 3736-37.

48. At the Board's request, CP&L presented the testimony of its Manager of Corporate Nuclear Safety and Quality Assurance Audit Section who was joined in a panel by his two predecessors in that position. Tr. 3767-3783. Nuclear safety and QA audit appears to be a strong function within the CP&L management organization with independence from operations and construction. *Id. passim*. The chief Nuclear Safety and Quality Assurance official directly reports (functionally, not administratively) to the Chief Operating Officer and has access if needed to the Chairman of the Board. McManus, p. 12, Tr. 3770-76; Applicant's Exhibit PP, p. 3.

49. The Board was convinced by the demeanor and responses of the CP&L witnesses that its top management is motivated and committed to nuclear safety and quality control. However, while motivation and personal commitment are necessary, these qualities alone are not a sufficient basis upon which to conclude that CP&L has the management capability to construct and to operate Shearon Harris safely.

50. Corporate management has changed and is continuing to change as evidenced by the large reorganization of June 1, 1979. Applicant's Exhibit PP. The Chairman of the Board and Chief Operating Officer are both approaching retirement. Jones, Tr. 3742. The witnesses whose testimony we found convincing may or may not be the persons directing the final construction and the operation of Shearon Harris. Moreover, expressions of commitment in the hearing room, no matter how sincere, are not as reliable as work-a-day manifestations of commitment.

51. It is significant that management motivation is not one of the seven factors listed by NRR as having been used in evaluating CP&L management capability, although it may be subsumed in some of them. Paragraph 36, *supra*. Staff Panel IV, p. 9. NRR prefers to measure motivation by performance. Moreover, while motivation is an important factor, it is not an overriding one. Minor, Tr. 3337-39.

52. The NRR witnesses pointed to two circumstances observed by that office during the review of the Shearon Harris application from which a positive attitude by CP&L personnel may be directly inferred. Both relate to CP&L's active leadership role with its principal contractors. The first concerns the degree to which CP&L handles the discussions during its technical meetings with the Staff. CP&L personnel led and participated fully in all technical meetings with the Staff, except those dealing with the most specialized technical areas. As a result, NRR believes that the CP&L personnel involved had a full understanding of the technical issues that were being discussed. Staff Panel IV, p. 12.

53. A second indication of CP&L's active role with its principal contractors is the manner in which CP&L personnel approached technical issues with the Staff. During review of an application, situations arise in which the Staff requires that an Applicant conform to, or propose acceptable alternatives to numerous technical positions on various aspects of the design that affect the safety of the plant. CP&L personnel have actively pursued the bases and background of the Staff positions in order to obtain a clear understanding of the Staff concerns so that they could respond appropriately. In a number of cases CP&L disagreed with the Staff technical positions and proposed alternatives to the positions for Staff consideration. These actions were for the most part taken in a timely manner such that resolution was reached in a manner acceptable to the Staff on almost all such issues.

NRR believes that it is reasonable to assume that CP&L personnel have and will continue to have this same positive attitude and approach in their reviews and audits of the design and construction activities of their principal contractors. Staff Panel IV, p. 13.

54. On the other hand, NRR's Mr. Schwencer, who as Chief of a Reactor Operating Branch, managed licensing for the operation of Robinson and Brunswick, believed that there have been instances when CP&L was not as responsive nor as timely in its responses as he might have wished. Staff Panel IV, p. 5. this had no significant impact upon public health and safety. *Id.*⁶ He believes that CP&L has acceptable managerial and technical competence. *Id.* p. 4.

55. Mr. Hannon of NRR has had recent contact with CP&L as its Brunswick operating project manager, and reports that at times he experienced some difficulty in obtaining certain requested information in a timely manner but, on the whole, CP&L has been responsive in nine major issues which he has handled. Mr. Trammell, with similar experience, has been concerned by repetitive events involving the same problem at Brunswick and he believes that CP&L once had a serious misunderstanding about quality assurance criteria relating to the seismic support system. This was resolved to his satisfaction, however. Mr. Zwetzig believes CP&L was very competent from his viewpoint as NRR's Robinson operating project manager, although on one occasion he thought CP&L was somewhat understaffed. Attachments, Staff Panel IV.

56. The Commission's basic information regarding the actual construction and operation of a nuclear power plant is derived from inspection of the facility conducted by NRC's Office of Inspection and Enforcement (I&E). Those inspections in the case of CP&L are conducted by the Atlanta, Georgia, I&E regional office (Region II), which also reviews all Licensee Event Reports prepared by Licensees. Staff Panel I. I&E inspectors have the most day-to-day contact with CP&L personnel. Messrs. Long and Dance, senior Region II I&E operation officials, described CP&L as "a conservative management organization, tough in dealing with the issues that tend to create an expansion of manpower requirements" and, while they ". . . are strong defenders of their positions; . . .," they have met commitments promptly once decisions were made. Staff Panel III, p. 9.

57. Concerned that the use of the word "conservative" in describing CP&L's management may not be clear, the Board strongly prodded Messrs. Long and Dance as to whether "conservative" was a euphemism for other

⁶Beginning at Tr. 3324, Mr. Schwencer states that this was not a matter of luck and explains why.

terms used in describing this idea. It became clear that “conservative” is used in the financial, not safety sense. Tr. 2971-77, 3006-3014, 3088-90. CP&L is reluctant to spend money without a clear indication of need. In marginal cases, where health and safety is not clearly involved, CP&L is slow in applying resources. Staff Panel III, p. 68, Tr. 3122-23.

58. In its proposed finding 20 (p. 8) Staff urges a finding that CP&L’s concern with safety is not the same as the NRC’s; that, for example, the Senior Vice President for Power Supply receives power generation reports daily and immediate reports on units out of service. But he does not receive all of the Licensee Event Reports sent to NRC, only LER trend reports with which he is not particularly familiar. The proposed finding is supported by the record and the Board adopts it. Utley, 3627, 3637; Staff Panel III, p. 11; Long, Tr. 3015-16, 3050-51. Applicant’s objection to the example may have some merit as to the implication that senior management should review each LER, no matter how trivial.⁷ But the basic idea that CP&L manages its operations from the financial, as well as safety viewpoint, is not disputed and permeates the record.

59. Despite these observations, Region II operating officials believe CP&L management to be adequately motivated. Staff panel III, *passim*. Not all Region II I&E operating inspectors agree. Mr. Cantrell’s basic original concern was one of attitude. Mr. Long requested operating inspectors under his supervision with experience inspecting Robinson, Brunswick, or Harris to comment on CP&L management. The responses are attached to the testimony of Staff Panel III. Four responses indicated concern about CP&L personnel attitude.

Comment:

Although Brunswick supervisory personnel met ANSI N18.1-1971 qualification requirements, it is the inspector’s opinion that staff training could be increased and that a deeper involvement in day-to-day activities is merited.

Comment:

In my early inspection of CP&L plants (3 inspections in 1975) I formed a strong impression or opinion that plant management was giving only lip service to the concepts of having and adhering to adequate procedures and to putting safety ahead of short-term production goals.

⁷Applicant’s reply to Staff’s proposed finding, p. 11.

Comments:

In that I requested an enforcement conference in December 1974, it is clear that in my judgment CP&L management was not sufficiently responsive to NRC concerns. However, I do not equate this with an inability to operate a nuclear facility.

Comment:

Capable, but will only meet the minimum requirements — don't take that extra step that most other utilities take.

60. A few other responses were unfavorable but unrelated to management attitude. Most of the operating inspectors' responses were not critical.⁸ Somewhat in contrast, but consistent with the pattern observed by the Board throughout the hearing, I&E officials charged with construction inspection did not place much emphasis upon management motivation in their testimony. *But see* Staff Panel II, pp. 17-18, Tr. 2769-70. Mr. Murphy, Chief of Region II I&E construction branch sent to his staff questionnaires similar to those sent out to operations' inspectors but none of the responses referred to management attitude. Staff Exh. 17.

61. The Board concludes that management motivation reposes in its component individuals, not the corporate body. Those individuals appearing before us seem to be well motivated, but motivation cannot be measured

⁸The Staff document, *Board Notification Licensee Regulatory Performance Evaluation*, February, 1979 (Bd. Exh. 8) includes an unfavorable comment about the operation of Robinson from an anonymous I&E inspector:

"Low number of LERs reflects attitude of reporting only items that are conspicuously reportable. Licensee impedes IE freedom of movement and access at site. No information freely given. Definite attitude of do only what is required." Board Exhibit 8, Tab 6, p. 8.

The contributors to the report were assured that their identities would not be revealed. We have doubts about the wisdom of such assurances for Board notification documents. We also question the Staff's authority to bind all elements of the Commission to its commitment. But, the fact is, in this case, there is no way to identify the author of this comment. Therefore this information is not a basis for a finding of fact. It is reported here as a part of the Board's responsibility to explore thoroughly in assuring that a full record is developed. We were able to determine by the processes of elimination that the author of the comment was among those I&E inspectors who responded to the respective inquiries of their supervisors, Long and Murphy; *ergo*, the author of the comment has either expressed himself in other terms or did not believe that his opinion was important enough to be presented to the Board in this proceeding. Tr. 2990-94, 3784-85. Board Exhibit 8 is received in evidence for the limited purposes referred to on page 71 n.16 and page 73.

precisely. While motivation is important, a more reliable indicator of management attitude toward nuclear safety and quality is the commitment of the corporation's resources and its performance.

B. CP&L's Management Performance

1. Inspection

62. As noted, the NRC receives most of its information about the actual construction and operation of a nuclear power plant from the Office of Inspection and Enforcement, in this instance, from its Region II office. Staff Panel I, pp. 4-5.

63. I&E does not determine the requirements which licensees are to meet. NRR reviews licensee's plans (Preliminary Safety Analysis Report and Final Safety Analysis Report (SAR)) and determines that these plans meet current requirements. I&E then inspects to determine if the licensees are conforming to the commitments and/or requirements described in the SAR. I&E inspectors do not have authority to impose requirements on licensees. If the licensee is not meeting requirements I&E takes enforcement action; if the requirements have not been properly defined, I&E refers the problem to headquarters for resolution or clarification. Staff Panel I, p. 27.

64. Appendix B to 10 CFR 50, requires a licensee to develop and implement a quality assurance program (QAP) which is a part of a management control system. This is a detailed inspection and test program assuring approved procedures for all significant safety actions. The verification program requires up to 100% inspection by the licensee's quality control personnel of a multitude of individual quality verifications. I&E's inspection of an Applicant's or Licensee's QAP is a major function of the NRC's inspection program. Staff Panel I, p. 6.

65. I&E performs selective inspection, but does not attempt to perform a 100% verification of all phases of the licensee's program. Inspection of hardware, observation of testing, review of organization, procedures, records, and all other inspection activities are not aimed at approval of individual components, actions, or procedures, but rather, at evaluating whether or not the licensee's management control system are working. Staff Panel I, p. 6.

66. Region II branches most concerned with CP&L and this proceeding are the Reactor Construction and Engineering Support Branch (Construction Branch) and the Reactor Operations and Nuclear Support Branch (Operations Branch). The Construction Branch inspects the licensee's activities associated with the construction of the facility including design controls, procurement, vendor audits, site construction, the functioning of the

management control systems, and the QAP. The Construction Branch follows up on problems identified by the licensee and which by regulation are reported to the NRC, and participates in investigations into licensee's activities. The responsibilities of the Operations Branch are similar to those of Construction except that they relate to the preoperational testing, startup testing, and operation of nuclear reactor facilities. Staff Panel I, pp. 7-8. There are other differences as we discuss below.

67. If the results of one or a sequence of inspections indicate a deterioration in the performance of the licensee's program, in-depth inspection will be conducted to upgrade the degree of control exercised at the highest level of the control system pyramid to assure that deterioration is checked and the program as a whole is returned to a satisfactory level of quality. Staff Panel I, p. 8.

68. I&E conducts a sampling but not statistically random inspection program. The specific areas reviewed in detail are selected from those most important from a nuclear safety standpoint. By a specific spot checking and sampling review of QC actions I&E tests whether a licensee's quality assurance program is working. Review of the overall program gives I&E considerable confidence that spot checking and sampling review provides an accurate assessment of the licensee's performance in meeting regulatory requirements. Staff Panel I, p. 9.

69. Inspection of the implementation of the licensee's quality assurance program, a non-random sampling, involves checking whether actual work activities comply with procedures, license requirements, technical specifications, and plant and code requirements. I&E inspectors question craftsmen and operators to determine if they understand, and are adhering to applicable limits and requirements. The inspectors observe operating instruments and recorder charts to determine that operations are being conducted within regulatory requirements. They observe instruments being calibrated. Observations are made as equipment is started up, shut down, or otherwise changed in operating mode. These observations and individual discussions with, and questioning of, people actually doing the work provide a basis for determining how well the licensee is actually implementing its quality assurance program. Staff Panel I, p. 9.

70. In reviewing the testimony of the witnesses from NRR and the two branches of I&E, differences in their approaches are evident. Construction inspectors are less concerned with management capability than with qualifications of the technical personnel directly involved in construction. Staff Panel II, generally, e.g., Tr. 2770, 2776. How well, (not how fast) the plant is constructed is the best test of management effectiveness. Murphy, Tr. 2762. I&E Construction Branch makes little analytical evaluation of

management (Tr. 2766) and is not concerned that NRR must make judgmental determinations about management. Tr. 2760.

71. From the public health and safety inspection viewpoint, construction inspection involves less urgency than operations inspection according to the respective Chiefs of the Construction Branch and Operations Branch of I&E, Region II. Murphy, Tr. 2751; Long, Tr. 2312. Construction Branch inspectors conduct interviews with craftsmen and make on-site in-depth observations within the inspectors' specific construction disciplines. They observe work in progress noting where work is interrupted for identified inspection hold points. Staff Panel II, pp. 7, 8. Their inspectors have discrete engineering disciplines, such as civil, mechanical, electrical, instrumentation, welding, seismic, and soils. *Id.* p. 9, Long, Tr. 2313. In construction, the Applicant has the continuing and timely assistance of its major contractors, the architect-engineer, nuclear steam system supplier, and constructor, all of which are subject to QA inspections and audits by the Construction Branch. *Id.* p. 8. For problems outside the skill of Applicant and its contractors, CP&L can hire consultants. *Id.* p. 57. Recognized industry codes and standards are available. *Id.* p. 12.

72. Even though construction inspection is in detail and contemporaneous with actual construction, it is concerned only with overall management control systems and QA/QC programs. This is also the case with operations. However, according to I&E's Mr. Long, who has extensive experience in both operations and construction inspection, quality assurance is not a term easily applied to operating plants. Long, Tr. 2315. Appendix B to 10 CFR 50, as acknowledged by Mr. Long, applies to both operations and construction, but, in his view, the quality assurance criteria in the Appendix are more easily applied to construction; that QA for operations is more of a management control system. *Id.* We agree that Appendix B on its face seems more applicable to construction. Construction inspection can verify the adequacy of the work in almost all areas. There are many codes, standards, and approved procedures in construction compared to operations where there is flexibility in determining the application of the quality assurance program. Long, Tr. 2316. Half the operating people are only semi-specialized and not in engineering, but in functional areas. Long, Tr. 2314-15: The time frame is more prolonged in construction, while, as Mr. Long observes, "[I]n the operating plant obviously the plant must be safe right now to continue operating or start up . . ." Tr. 2312.

73. For these reasons, particularly the quantitative construction standards, and the opportunity for timely and quantifiable verification by the NRC, we conclude that construction in accordance with the SAR and Commission requirements depends less upon management capability than does

safe plant operation.⁹ This may explain in part why the record in this proceeding produced relatively little evidence about CP&L construction experience compared to its operating experience.

2. CP&L's Construction Experience

74. Before Shearon Harris CP&L constructed three nuclear units; Robinson Unit 2, and Brunswick Units 1 and 2. Robinson 2 was a Westinghouse "turnkey" project and CP&L's management involvement was minimal. Staff Panel II, pp. 10, 13. The I&E Construction Branch witnesses analyzed its experience with Robinson and expressed the view that the reported construction incidents had no bearing on CP&L's ability to run a QA/QC program. *Id.* pp. 25-38. The Staff does not believe QA/QC competency was demonstrated in constructing Robinson because the function of QA/QC was at that time in its infancy. *Id.* p. 35. QA/QC, such as it was, was handled by Westinghouse and Ebasco. *Id.* p. 31. The most that can be said for the Robinson experience is that CP&L was heavily involved in pressing for complete resolution of problems and better control. *Id.* The Office of Nuclear Reactor Regulation regards the Robinson project to be a learning experience for CP&L. Staff Panel IV, p. 16. We agree and so find, but it is not a direct demonstration of management capability or incapability.

75. Brunswick's construction permits were issued in 1970. Staff Panel II, p. 38. This was a transitional project for CP&L. It was not a turnkey project but CP&L did not manage the construction. The constructor, Brown and Root, performed site QA/QC functions with CP&L said to be auditing. *Id.* p. 10. What CP&L audited in the early stages of construction at Brunswick is not clear because there was no QA/QC program in effect to audit. Nor did NRC require one. *Id.* pp. 41-44. It was not until the latter stages of constructing Brunswick 2 that CP&L made organizational changes to increase its on-site participation in on-site construction and QA meetings. *Id.* p. 47.

76. The Staff has reviewed the deficiencies observed during the construction of Brunswick. They have been mostly random and indicate no systemic weakness in management. *Id.* pp. 46-47. But there was a continuing trend of a high turnover in welders and a scarcity of properly qualified welders in 1972. *Id.* pp. 39-50. The Staff commends CP&L for their solution to this problem. *Id.* p. 40. Because of CP&L's limited involvement in the construction of Brunswick we are unable to find that it reflects favorably or unfavorably upon management capacity. However the evidence does

⁹This comparison should not be regarded as disparaging of CP&L construction management, whom we believe to be and find to be qualified to construct the plant.

demonstrate that CP&L used Brunswick as an important lesson in developing and implementing its quality assurance programs and management organization now employed in constructing Shearon Harris. McDuffie, e.g. pp. 9, 10, 40, 48-50, 53. NRR has correctly considered the construction experience with Brunswick to be a valuable learning experience for CP&L management. Staff Panel IV, p. 16.

77. The construction permit exemption which authorized limited work at the Shearon Harris site was issued in January 1974, but before then, in February 1972, NRC inspectors began site suitability inspections. On January 27, 1978, the Shearon Harris construction permits were issued. Staff Panel II, p. 49.

78. From its experiences at Robinson and Brunswick, CP&L learned that it needs to control more of the craft and QA/QC work in order to control the overall project quality, costs and timeliness. *Id.* p. 14.

79. CP&L has developed and is implementing a new site QA/QC program and procedures for Harris. The procedures are being written and reviewed by QA personnel who have Brunswick or other nuclear plant construction experience. The procedures are written to implement and verify Ebasco specifications and PSAR commitments. These changes have proven to be effective for that work completed and the work that is presently in process. I&E inspection reports reflect that procedural control for the work that is completed and the work that is in process at Harris is acceptable. *Id.* pp. 14, 48.

80. At the Harris facility, CP&L is managing its own site construction and QA/QC surveillance functions unlike the case at Robinson and Brunswick. CP&L site QA and Engineering Units perform the acceptance inspection functions at Shearon Harris. CP&L's manager of Engineering and Construction QA (Raleigh Offices) performs site QA surveillance functions. The CP&L Corporate QA Audit Section performs site audits. Ebasco provides architect-engineering services. Daniel Construction Company provides labor and direct labor supervision. Permanent facilities are constructed in accordance with the A-E's engineering documents. *Id.* p. 10; McDuffie, pp. 8-12, 24, 46-47.

81. I&E inspection further shows that in order to assure QA/QC compliance at Harris, the manager, Corporate QA Audit Group, whose independence and access to top management we have discussed above, is responsible for auditing all QA program activities within CP&L (Engineering, Construction, QA) and external activities of the architect-engineer, nuclear steam system supplier and the vendors. Upper level management reviews these reports and has obtained timely action where required. This program meets NRC requirements. Staff Panel II, pp. 10-12, Murphy, Tr. 2543.

82. CP&L presently has a program to identify safety-related problems and it is an integral part of their QA program. It conducts corporate level audits, engineering and construction QA surveys, site QA unit surveys, trend analysis of nonconformance reports, and QC inspection. Additionally, CP&L routinely performs an engineering review of matters described in the NRC Inspection and Enforcement Bulletins and Circulars, project design changes and construction work. All the CP&L construction engineers, inspectors and site QA examination, inspection and test personnel have stop-work authority or access to authority to reject work or materials, and in fact they have done so. Region II inspection personnel have reviewed reports, verified actions and witnessed specific cases where work was stopped or rejected and corrective actions taken. *Id.* p. 21.

83. To check and determine that these problems are dealt with, CP&L has adopted a nonconforming report system and an audit or survey system which requires identification, corrective action and verification of corrective action. They employ nonconformance reports (NRC's) to handle routine and minor problems. Deficiency and Disposition Reports (DDR's) are used to document major problems or engineering document deviations requiring engineering evaluations. CP&L employees are trained to consider generic implications of related problems. In the view of I&E the system works and provides mechanism for identifying, documenting, and correcting the specific problems and for making necessary changes to the QA program procedures to minimize future recurrence. *Id.* p. 22.

84. In the past CP&L has had some problems in obtaining and retaining site workers, but this has not adversely affected the construction schedules nor compromised the quality of work. CP&L has established an active recruitment and training unit and should be able to continue to employ adequate personnel. *Id.* p. 21.

85. During the period February 11, 1972 through October, 1978, Region II conducted 24 inspections related to Harris construction activities both at the site and corporate offices. Included are seven inspections, from July 1, 1975 through September 1, 1977, related to the extended construction delay, which includes site storage facilities, facilities maintenance, equipment storage and records. The 24 construction inspections have employed 21 inspectors for approximately 150 man-days at the construction site, corporate offices, and vendor manufacturing facilities. *Id.* p. 49.

86. Three items of noncompliance have been identified through inspection of the Harris work. One item involves the placement of concrete for the power block structure. This item related to sampling inspection of concrete during placement when pumps and other conveyances are being used. A second item of noncompliance involves a site contractor's containment welding program and it relates to documentation for electrode control. The

third item of noncompliance involves the QA program pertaining to control of documentation. This item involved control of revised drawings with outstanding field change requests. *Id.* p. 51.

87. Of these three items of noncompliance, two items were identified as infractions. That is, if they had remained uncorrected, they could have resulted in the failure of a Seismic Category I system or structure in such a manner that the safety function or integrity would be impaired. These non-compliances are random in nature and are not indicative of failures in CP&L's management, nor inadequacies in the QA program. The safety significance of these items was individually analyzed by CP&L and, in turn, by the NRC. In each case, CP&L has identified the corrective actions and initiated measures to preclude recurrence. The corrective actions were confirmed through NRC inspections. *Id.* p. 52.

88. Region II's construction inspection and enforcement history with CP&L does not indicate a lack of managerial capability to construct the facilities. The inspections have disclosed no facts indicating present need for CP&L to improve its QA/QC programs in the construction of Shearon Harris. The specifications, QA Manuals and procedures are current with work being done and Region II, I&E inspection reports reflect that CP&L is implementing the overall QA/QC program commitments of the PSAR. Region II's construction inspection and enforcement history does not indicate a lack of control of the QA/QC programs for construction. CP&L is implementing the overall QA/QC program commitment of the PSAR. CP&L has developed, implemented, and manned a construction QA/QC program that encompasses corporate engineering and design and construction activities which are commensurate with the status of project. *Id.* pp. 14-17.

89. It is I&E's view that CP&L has demonstrated no lack of technical qualification or ability to construct Harris. Moreover, CP&L has supplemented their own in-house capabilities with the capabilities of their consultants, an architect-engineer, a nuclear steam system supplier and a construction contractor who have had previous experience on several nuclear plants. Additionally, CP&L has hired experienced personnel to manage site construction and engineering and construction QA activities. Engineering support, drawings, specifications, and QA/QC programs and procedures have been developing for an extended period of time. CP&L has demonstrated effective capability for meeting quality requirements for work already completed and that work which is in process at Shearon Harris. For problems outside the scope of expertise of CP&L, the services of Ebasco and Daniel are available. *Id.* pp. 11, 25.

90. Based on a review of the findings by Region II I&E construction inspections of the licensee's QA/QC programs and the implementation of

those programs; the licensee's response to enforcement matters; the licensee's response to reportable construction deficiencies; and discussions with Region II I&E construction management and inspector personnel, the Staff has concluded that the licensee's management capabilities have been adequate to implement the QA/QC programs and management control systems to give reasonable assurance of quality during construction, and the Staff believes there is no basis to expect that CP&L will not continue to provide adequate management capability during future construction phase activities at Shearon Harris. Region II of I&E has reviewed CP&L's current overall construction QA/QC program and procedures, the corporate audits and the engineering and construction QA surveillance reports of activities by CP&L engineering, the nuclear steam system suppliers, the architect-engineers and the CP&L contractors for services and hardware. Routinely the inspectors have observed work related to the above construction activities and records (including nonconformance reports and deficiency and disposition reports), and periodic management reports by both CP&L and the constructors. The Staff has concluded that CP&L has maintained an adequate managerial ability during construction phase activities at its nuclear sites and that CP&L management is capable of constructing the Shearon Harris facilities in full compliance with NRC requirements. Staff Panel II, pp. 4-6; Tr. 2542.

91. Considering the review by NRR, as evidenced by the testimony and conclusions of its witnesses; the testimony and conclusions of the Region II I&E witnesses concerning CP&L's construction experience at Shearon Harris; CP&L's QA/QC program, and the technical qualifications of the personnel committed to Shearon Harris; considering the testimony and commitments of witnesses for CP&L¹⁰ and further considering the inspection and enforcement techniques employed by and the commitments of the NRC Staff with respect to the construction of Shearon Harris, the Board concludes that CP&L has the management capability and technical qualifications to construct Shearon Harris in accordance with the SAR commitments and the regulations and without undue risk to the public health and safety, and that the NRC Staff will so verify.

3. CP&L's Operating Experience

(a) Operations QA Program

92. As in the case with construction, QA activities for CP&L operating plants are governed by three QA organizations, each with independent QA

¹⁰See particularly McDuffie written testimony following Tr. 3505 and McDuffie, Tr. 3713-30.

missions. In addition to its construction responsibilities the *Corporate QA Audit Section* performs audits of plant operation activities at the corporate office and at the Brunswick and Robinson facilities. Audit findings and resolutions thereto are reported to the CP&L chief operating officer. The *Operations QA Section* performs audits at the Robinson and Brunswick facilities approximately twelve times yearly at each facility. Audit findings are identified to the Department Manager, Generation, and to the Plant Manager. Personnel in this section are assigned to specialty areas of audit responsibility (such as maintenance, health physics, or operations), and they conduct pre-planned audits in accordance with established CP&L plans and procedures. The Operations QA Section also reviews NRC correspondence to further identify problem areas and to track unresolved NRC items. Staff Panel III, pp. 4-5. Each operating plant also has a QA organization.

93. The plant QA organizations (groups) at Robinson and Brunswick are similar. They perform both QA and QC functions in accordance with policies established in the Plant Quality Assurance Manual. The plant QA supervisor reports to the Plant Manager and has communications with the Manager, Operations QA Section. The Brunswick plant QA staff has seven personnel assigned; the Robinson plant QA staff has five personnel assigned. In addition to the routine QA/QC functions in areas such as maintenance activities, procurement, and design modification, the Plant QA groups perform audits at the request of their respective plant supervision or management. They provide monthly reports of all outstanding items to plant management, including those identified by the NRC. The Plant QA group is audited by both Operations QA Section and Corporate QA Audit Section. *Id.* p. 5.

94. The operating license for Robinson, CP&L's first nuclear plant, issued on July 31, 1970. Overall some 150 inspections pertaining to operations at Robinson have been conducted. This includes 30 inspections and one corporate meeting since September 1, 1977 when the testimony for the 1977 Harris Construction Permit hearing was written. The initial management inspection of administrative controls affecting quality and operations at Robinson was made in 1971. The first in-depth inspection of the CP&L QA program supporting plant operations was in July 1975. This was subsequent to the issuance of the CP&L QA program topical report, *The CP&L Corporate Quality Assurance Program — Part 2 and 3*, dated December 19, 1974. This inspection revealed 13 discrepancies,¹¹ most of which were linked

¹¹Several terms are used to describe a condition or action falling short of NRC expectations. As we understand the use of the word throughout the hearing, "discrepancy" is a general term informally describing an undifferentiated departure from acceptability. There are now three

Continued on next page.

to program weaknesses. CP&L was responsive to these findings and most were resolved within three months. In December 1972 and again in December 1974 meetings with CP&L management were held pertaining to improving the management of Robinson. Although CP&L decided early on to become involved in QA, and AEC was critical of the slowness in developing a QA program and criticized the repetition of similar items of non-compliance. Most licensees were slow in implementing QA. CP&L is financially conservative and is "tough" in dealing with issues that tend to expand manpower requirements, such as QA requirements, but it increased its staffing and its management has continually grown stronger. Staff Panel III, pp. 9, 12-13, App. B.2, C.2.

95. QA activities at Robinson are inspected several times a year. On-going inspections have revealed that most discrepancies are centered in the areas of maintenance, training, design changes, and modifications, and document/records control. In the three years that QA activities have been closely followed, no evidence of overall programmatic weakness has been pinpointed for Robinson. In the view of I&E, the management staff at Robinson is experienced and responsive to NRC concerns as evidenced by the December 1977 boron injection tank thermocouple failure investigation and the current upgrading of facility procedures and administrative controls. *Id.* pp. 12-13.

96. The operating license was issued for Brunswick 2 (the first unit licensed) on December 27, 1974 and the Brunswick 1 operating license was issued on September 8, 1976. Overall, about 110 inspections pertaining to operations, including preoperational testing, of Unit 2 and about 80 inspections pertaining to operations of Unit 1 have been conducted. This includes 31 joint inspections and one corporate meeting since September 1, 1977. Since September 1976, all but two inspections have pertained to activities of both units. *Id.* p. 13.

Continued from previous page.

levels of NRC "noncompliances." Generally, although the exact noncompliance definitions are complex, a "violation" is a noncompliance of immediate safety consequences, an "infraction" is one with a potential for a safety consequence and a "deficiency" is a noncompliance with NRC requirements whose safety consequence is remote. Murphy, Tr. 2215; see also Staff Panel I, pp. 11-16. A "deviation" is an NRC term but it is less than a formal noncompliance. A "civil penalty" is an enforcement action which may be the cumulative result of non-compliances without regard to the individual gravity of each. For example, as we discuss below, CP&L has received a civil penalty, but never a violation. Long, Tr. 3018. NRC inspectors also frequently refer to "unresolved items" which we have taken to mean any type of non-conformance (our term) identified or reported and still pending as uncorrected. Unresolved items which are not formal noncompliances are the most common matters covered in this record. While the various types of noncompliances have a rather precise meaning, sometimes the witnesses were imprecise in using these terms.

97. In September, 1974, I&E conducted the first comprehensive inspection of the CP&L operations QA program. This was several months prior to issuing the operating license for Brunswick. This inspection identified 20 unresolved items with at least one item in each area inspected. The program was found to be "fragmented" and failing to fully meet FSAR commitments. The inspection report stated that the inspectors "did not see those management controls that are necessary to assure . . . that the plant will be operated safely and in compliance with license requirements." A reinspection was held in December 1974, which confirmed numerous programmatic changes to the Brunswick program and resolved most of the initial NRC findings in QA. I&E regarded the QA program to be acceptable by the time the Unit 2 license was issued. A similar in-depth inspection of QA in June 1976, prior to licensing of Brunswick Unit 1, identified one item of noncompliance and five discrepancies. The thorough inspection of the Brunswick QA program in January 1979, identified eleven items of non-compliance. *Id.* p. 14; Dance, Tr. 2932.

98. Brunswick management in the years from late 1974 to early 1977 had numerous operating problems and issues as we discuss in greater detail below. In February 1976, following an off-gas explosion, NRC management met with CP&L management to discuss NRC concerns with CP&L operations including the timeliness, the quality, and history of reportable occurrence reports and to reemphasize requirements to follow emergency instructions. Shortly thereafter management moves were made at the corporate and plant levels. Brunswick is a BWR plant. In the fall of 1976, recognizing the need for additional training of supervisors, a short training course on BWR operations was conducted on-site. Staff Panel III, pp. 14-15.

99. Mr. Cantrell, Brunswick's principal I&E inspector, reported his concern that, partly because of turn-overs, Brunswick's management did not meet the spirit of the technical specifications and the standard of ANSI N18.7. As a result an I&E inspection of Brunswick management was conducted, and in January, 1977, I&E concluded that Brunswick met minimum management standards. Whether this complied with the functional intent of the Technical Specifications is one of the important sub-issues of this remand and is considered further below. Even though I&E concluded that management met NRC standards, it met with CP&L in March 1977 to discuss maintenance controls and turnover of supervisory personnel. Continued upgrading of personnel training, qualifications, and responsiveness to NRC concerns has been demonstrated to the satisfaction of I&E. Today the Staff considers the management staff at Brunswick to be qualified and continually being strengthened by the in-house Senior Reactor Operator (SRO) training. Supervisory staff turnover has been minimal since January 1977, except that one superintendent was transferred to Robinson as Plant

Manager in November, 1977. In the view of I&E, no significant QA program weaknesses have been identified by the Staff in the on-going inspection of QA at Brunswick, but implementation of maintenance administrative controls has been an area of weakness, as evidenced by continued I&E findings of noncompliance in this area. *Id.* pp. 14-15, Attachments B.1, C.1; Dance, Tr. 2933-2934; Attachments 5-8 Cantrell written testimony following Tr. 3347.

100. As previously indicated, in January 1979, shortly before this hearing an inspection was made looking into the quality assurance program at the Brunswick facilities. This was part of a new series of in-depth inspections of quality assurance programs that is being conducted of licensees by the NRC Staff. No prior audit of quality assurance to this depth has been conducted at Brunswick. Ruhlman & Kellogg, Tr. 2714-2715. As a result of this inspection, 7 infractions and 4 deficiencies were reported. Staff Exhibit 15. These dealt mainly with the failure to set up or carry out programs or procedures that would assure quality control. None of the matters discovered were considered hazardous to health or safety, although the inspection revealed that the Brunswick plant's QA program requires significant upgrading. Ruhlman, Tr. 2714, 2717-2718. In the Staff's opinion, considering the depth of the inspection, Brunswick appeared to be, in regard to its quality assurance program in the areas inspected, an average utility. Ruhlman, Tr. 2638, 2700-2706.¹²

(b) Radiation Protection, Security and Inservice Inspections

101. I&E also looks at how CP&L management handled problems involving radiation protection, security, and inservice inspections and also examines CP&L's Licensee Event Reports and their noncompliance record. From January 1975 through October 6, 1978, fourteen inspections by the I&E Radiation Support Section were made at Robinson, resulting in 21 non-compliance items being cited. Other program weaknesses in this area have been identified and classified as open or unresolved items. The problem areas found that were considered significant because of repetition or potential impact were: radiation exposure control, internal exposure control and evaluation, health physics controls, and continuing problems involving the posting, labeling, and control of high radiation areas. Additional problems in this area have been identified from CP&L's Licensee Even Reports. Staff Panel III, pp. 16-18.

¹²There are several instances in the record where the Staff witnesses express such comparative opinions. While we give these statements weight as expert opinion, the Staff also reports that it is very difficult to make comparative evaluations of licensee performance. See Paragraph 123, *infra*.

102. From mid-1975 through October 6, 1978, 13 radiation support inspections were made at Brunswick resulting in fourteen items of non-compliance. Additional problems have been identified as the result of LER's from the licensee and unresolved items or open items identified by the inspectors. In addition to these problems, a major problem area is presently being negotiated between CP&L and NRR regarding the operability of the Off-Gas System. *Id.* p. 18.

103. Major areas identified which could adversely influence the radiation protection program are:

Posting, Labeling and Control

Failure to post and control high radiation areas as required by the Technical Specifications were twice cited in 1976. The failure to control high radiation areas was cited again in 1978. The licensee's response to this item was received in November 1978, and the action proposed appears reasonable. However, the fact that additional examples were identified approximately two months after the latest citation seems to indicate that adequate corrective actions were not immediately taken. *Id.* p. 19.

Testing of Effluent Monitors

In 1975 three citations were made concerning the failure to perform tests of effluent monitors as required by the Environmental Technical Specifications. In 1978 it also was noted that the Corporate Quality Assurance group had determined that functional tests of effluent monitors had not been performed as required. *Id.*

Augmented Off-Gas System

The augmented off-gas system is presently not operable due to hydrogen ignition problems. Discussions and correspondence have been taking place between CP&L and NRC concerning corrective actions and the time frame for such actions. CP&L has projected that approximately 8 years will be required to make the system operable. NRR is presently considering Technical Specification revisions until such time as the system is operable. In the interim, the inoperability of the system could have an adverse effect on radioactive gaseous releases depending on fuel integrity. *Id.* pp. 19-20.

Control of Abnormal Situations

A traveling incore probe was retracted through the shield, resulting in an unidentified and uncontrolled high radiation area. This single event resulted in four citations in 1976 involving failure to follow procedures,

failure to perform surveys and failure to maintain survey records. Subsequently, a deviation was cited because the licensee did not take all corrective actions as stated in his reply. Additionally, a management meeting was held with CP&L on this matter. This was a significant problem area at the time. *Id.*

104. Based on the operating history of the Brunswick facility the principal concern of the Staff with CP&L's ability to construct and operate the Harris facility in the areas of radiation protection and radioactive waste management is the ability to maintain an adequate staff in the Environmental and Radiation Control (E&RC) group. Under the organization at Brunswick and H. B. Robinson, the E&RC group is responsible for radiation protection (dosimetry, contamination, and exposure control, respiratory protection program, survey instrument calibration, etc.), chemistry, radiochemistry, radioactive effluent control and records, and radiological and nonradiological environmental monitoring (sample collection, some sample analysis, etc.). The work of the E&RC group is carried out by Radiation Control and Test (RC&T) technicians. *Id.* p. 21.

105. Since the startup of the Brunswick facility, there has been an attrition of both RC&T technicians and foremen. While some of these people have gone to other offices in CP&L, others have left the utility. Foremen generally have been promoted from the technician level. Replacements for the technician positions have been hired but generally as trainees whereas losses of technicians are occurring at the journeyman level. The net effect has been to lower the overall capability of the technicians, both in training and experience. The Brunswick E&RC group formerly had two experienced professionals on the staff (other than supervisor) but these have left Brunswick and the only staff professional is a recent college graduate. *Id.* pp. 21, 22.

106. I&E considers the operating plants to be adequately staffed in radiation protection despite the loss of experienced technicians. However it must also consider staffing Shearon Harris in this area without denying Brunswick and Robinson adequate staffing. Shearon Harris will impose an increasing work load and expanding responsibilities. While overtime hours will solve-short-term problems, this is not suitable as an alternative to adequate staffing in the long run, and the situation will cover a period of years. *Id.* pp. 22, 23.

107. A potential weakness in management's implementation of the requirements in the radiation control area has been identified due to the fact that there have been eleven noncompliances in the radiation control area from October 1977 to October 1978. NRC inspection efforts have been modified to focus attention on the radiological controls areas in order to

identify and correct specific weaknesses. Staff Panel III, p. 29. However, based on the results of radiation protection inspections at both Robinson and Brunswick, the Staff remains of the view that CP&L is capable of operating an additional nuclear generating station in accordance with the regulations and without creating a hazard to the public health and safety. This matter will be reviewed again at the operating license stage when NRR headquarters personnel will review the Staff's requirements during the operating license proceeding. *Id.* p. 23.

108. From April 1976 through June 1978, four security inspections have been conducted at Robinson. These inspections resulted in three items of noncompliance (two infractions and one deficiency). There were no repeated items of noncompliance. The most recent inspections have indicated significant improvements. In the opinion of security inspectors, Robinson is an average plant when measured against all other Region II facilities. *Id.*

109. In 1975, a \$5,000 civil penalty was assessed for four items of plant security noncompliance at Brunswick for failure to implement access control requirements. During three separate inspections Brunswick received noncompliances in security areas pertaining to access control and a meeting between CP&L and NRC was held on this matter prior to the inspection that resulted in the civil penalty. The recurring items of noncompliance involving the security program reflected upon management's apparent inability or reluctance to take corrective action. In general the civil penalty appeared to be more related to management's apparent inability to take action rather than the QA/QC program. CP&L's security record improved after this. *Id.* p. 25. The correspondence between the Staff and CP&L regarding the civil penalty has been received into evidence as Staff Exhibit 14.

110. From March, 1976, through September, 1978, seven security inspections have been conducted at Brunswick, resulting in eleven infractions and five deficiencies. Two of the items, both infractions, were repeat items of noncompliance. Inspectors who have been involved in recent security inspections state that Brunswick is average when measured against other Region II facilities. In I&E's opinion the differences between the numbers of noncompliance items identified at Brunswick and the number identified at Robinson are largely due to the greater complexity of the Brunswick security system. *Id.* pp. 23-34.

111. I&E inspectors review CP&L's inservice inspection program, procedures and results. The I&E witnesses did not report any history of non-compliance. Inservice inspection nondestructive testing of the Robinson facility vessel, piping and piping components had been contracted to Westinghouse. The inspection activities are coordinated by CP&L inservice inspection coordinators at the corporate office and site level. I&E believes

that CP&L has shown concern for proper implementation of the inservice inspection requirements at Brunswick and Robinson and CP&L management has been responsive to inspection findings by both CP&L and NRC audits and inspections. *Id.* pp. 26-28.

(c) General Statistical Trends

112. CP&L's noncompliance history for Robinson has been:¹³

	1975	1976	1977	1978
Violations	0	0	0	0
Infractions	23	6	9	10
Deficiencies	9	6	9	5
Deviations	6	1	1	1

Staff Panel III, p. 28, Dance, Tr. 3026.

113. At Brunswick it has been:

	1975	1976	1977	1978
Violations	0	0	0	0
Infractions	31	20	17	16
Deficiencies	4	13	5	7
Deviations	2	2	3	1

Staff Panel III, p. 30; Dance, Tr. 3239.

114. The Commission also looks at Licensee Event Reports (LERs), sometimes referred to as "Reportable Occurrences," as an indicator of performance. E.g. Panel III, pp. 28, 32. LERs are reports submitted by licensees when certain safety-related events occur at a facility. Bd. Exh. 8, Tab 4, p. 4; Utley-Banks, p. 57.¹⁴

115. For Robinson the LERs have been:

1975	1976	1977	1978
20	19	32	30

Staff Panel III, p. 28, Dance, Tr. 3028.

116. For Brunswick, LER's have been:

Brunswick I			
1975	1976	1977	1978
2	13	117	74

¹³As a reminder, a "violation" is a noncompliance of immediate safety consequence, an "infraction" is one with a potential for a safety consequence, and a "deficiency" is a non-compliance whose safety consequence is remote. A "deviation" is not a formal non-compliance. See n. 11, p. 64 *supra*. See Staff Exh. 12 for a summary of noncompliances.

¹⁴Computer printout summaries of CP&L LERs, 1969 to October 1, 1978, are in evidence as Staff Exhibit 13.

Staff Panel III, p. 32.

117. The Staff has pointed to the overall statistics of noncompliances and LER's in several instances as indicators of operational improvement or stability. E.g. Staff Panel III, pp. 28-32; Staff Proposed Findings 89, 91, 93, 103. The Board, however, has considerable difficulty in trying to reconcile these general statistics and conclusions with other portions of the record. For example, when the Board pointed out to the I&E witnesses that, in fact, a recent statistical trend at Brunswick showed a sharp increase in infractions, the Staff witness explained that the increase is not significant and could be explained in part by an increase in inspections. Tr. 3020, Staff Panel III, pp. 30, 31. Staff witnesses explained further that, up to a saturation point, the number of inspector hours and the areas selected for inspection would have an effect upon the number of noncompliances detected. Tr. 3159-3176. Some noncompliances are merely a result of opinion differences. Utley-Banks, p. 64.

118. Another area of doubt exists with respect to LER's. In 1976, Brunswick 2 was one of the twenty-three operating boiling water reactors in the United States, thus comprising 4.3% of them. Yet Brunswick 2 reported 13.70% of LER's reported by all BWR's in 1976. In 1977, the two Brunswick Units comprised two of the twenty-five BWR's then operating, or 8% of them, but together they reported 14.32% of the LERs (Unit 1, 8.99%; Unit II, 5.33%). Table 4-1, NUREG 0366 for 1976 and for 1977.¹⁵ Officially noticed, Tr. 2467, Tr. 2301. The most the Staff could say for this rather disproportionate showing is that variances in numbers among plants are due to differences in reporting requirements among plants of different ages and varying reactions to I&E's insistence upon reporting. Mr. Long, Tr. 2297-98, 2498-99.¹⁶ Also, a higher number of LER's naturally occur at the startup of a plant as was the case at the time the Brunswick plants were compared.

¹⁵NUREG 0366 figures differ slightly from the Staff's testimony. Panel III, pp. 28, 32. Brunswick 1 operated only a small part of 1976 and does not appear in 1976 NUREG 0366 Table 4.1.

¹⁶Board Exhibit 8, Board Notification, License Regulatory Performance Evaluation, demonstrates another possible reason for doubting the value of overall LER trends. As noted, the anonymous inspector reporting on Robinson regarded the low number of LER's as an attitude of reporting only the conspicuous. On the same page, another anonymous inspector at another utility favorably regards a high number of LER's to be due to the licensee's determination to report all possible reportable items. Bd. Exh. 8, Tab 6, p. 8. Reporting policy may be an overriding factor.

119. Considering the nature of the remanded issue, the Staff had little choice but to place into evidence the overall statistical record of CP&L with respect to noncompliances and LER's. But we do not regard the overall statistics in themselves to be probative of dependable trends in Applicant's performance. We necessarily, then, reject Staff's proposed findings based solely upon the overall statistics.

120. However, we have in paragraphs 100 and 108, and possibly others, accepted expert opinions of Staff witnesses which have depended in part upon a reasoned analysis of statistical trends in specific areas, such as security. The Staff witnesses have indicated that overall statistics in themselves are not reliable. But, in narrow specific areas, where performance statistics comprise part of the factual base supporting the professional expert opinion of the I&E witnesses, statistical trends are a valid partial basis for the Staff's conclusions.¹⁷

121. Applicant itself does not urge any findings based upon the overall statistical trend manifested by the numbers of noncompliances and LERs. Applicant's Proposed Findings pp. 31, 32. Applicant has reported a reasonable program for identifying and submitting LERs and for followup of the reported events. Utley-Banks, pp. 58-69; Jones, Tr. 3683-87; Banks, Tr. 3687-90.

122. Board exhibit 8, as we have stated, is a report to Boards on a study underway to determine if a reliable objective method for evaluating licensee performance can be developed. An apt working description of "performance" is set forth in the report: "Those patterns of behavior that show the ability and willingness of the licensee to conduct his operation to minimize the risk to public health and safety and to the environment." Board Exh. 8, Tab 7, p. 4.

123. No objective standards now exist which are broadly recognized as reliable for measuring how well a licensee operates a nuclear power reactor. *Id.* Tab 7, *passim*. See also Tab 3, 1st document p. 4, 2nd document p. 3. The draft performance evaluation report is experimental and is not useful in a practical evaluation of licensee operations. The witnesses were not able to provide the Board with any definite standards for measuring operational performance. Tr. 2253-54; 2286-89; 2297; 2473; 3228.

124. Although we have examined as carefully as possible the bases for the Staff's opinion that CP&L has competent operating management, we must depend very heavily on the professional judgments of the Staff that

¹⁷Moreover, we recognize that overall statistical trends of noncompliances and LER's may be useful information for use in alerting expert I&E personnel to the possibility of management problems. See, e.g. Cantrell following Tr. 3347. There is, of course, a difference between reasonable investigative clues and probative evidence in adjudication.

this is so. I&E has evaluated CP&L's program and methods for identifying incipient problems in operations and believes that CP&L has the means to evaluate identified problems, and the capability to handle them. Panel III pp. 42-44.

125. The Staff believes, based upon personal inspections and NRC records that CP&L has demonstrated its ability to manage and to operate nuclear plants. CP&L is presently properly using its resources in seeing that its nuclear facilities are operated safely. The Regional Office has no cause presently to believe that CP&L will not operate Shearon Harris consistent with the public health and safety once it is constructed. The Staff has concluded that CP&L's management of the Robinson and Brunswick facilities has evolved for the better over the years. *Id.* pp. 69-70.

(d) Mr. Cantrell's General Concerns

126. Floyd S. Cantrell, Jr., the I&E inspector who originally raised the issue heard on remand, is a registered professional nuclear engineer. He began his career in nuclear reactors in 1953 at DuPont's Savannah River Plant where he worked for the following 15 years as a supervisor in the operation of a large production nuclear reactor. He joined the AEC in 1968 as a reactor inspector and has since participated in about 175 reactor inspections, predominantly in the areas of reactor operations and implementation of quality assurance programs. He has served as principal inspector for startup and testing and as principal operations inspector. Since January 1979 he has been Acting Chief of a reactor projects section. Professional Qualifications following Tr. 3347; Tr. 3348. His concerns have involved the operation of CP&L's Brunswick plant where he began inspecting in April, 1974; becoming principal inspector for the startup of Brunswick 2 in August, 1974. Subsequently he became principal inspector for operations for both Brunswick units. In the normal course of rotation, he was relieved of his Brunswick assignment in July, 1977, immediately prior to the construction permit hearing for Shearon Harris. Cantrell following Tr. 3347, pp. 1, 2.

127. Mr. Cantrell has made 41 inspections at Brunswick, which is far more than any other inspector during the relevant period. Cantrell, p. 1; Staff Panel I, Appendices A & B; Long, Tr. 2236. Of all of the I&E personnel, Mr. Cantrell was in the best position to know about CP&L's operation of Brunswick. As a multi-discipline, principal inspector, he received information from other, single-discipline inspectors. Long, Tr. 2231; Dance, Tr. 2470-72.

128. Mr. Cantrell was examined and cross-examined at considerable length during the remand hearings. Tr. 3347-3490. He testified with com-

posure, reasonably conceding or defending points where appropriate. E.g. Tr. 3360-76, 3386. As he recognizes, he tends to be relatively conservative in his view toward nuclear safety and, among his I&E colleagues, was “. . . probably the most severe critic” of CP&L’s nuclear operations. Cantrell, p. 30. He is very credible.

129. Mr. Cantrell’s views on CP&L management capability as he viewed it at Brunswick were solicited by his then supervisor, Mr. Dance, for use in preparing the testimony responding to the Board’s questions at the original hearing. Cantrell, p. 3; Staff Panel I, pp. 30-32. In response Mr. Cantrell prepared a handwritten memorandum dated September 19, 1979, which he submitted to Mr. Dance. He stated:

9/16/77

To: H. C. Dance

From: F. S. Cantrell

.Harris Hearing

The following information is submitted in response to your request to provide information on the operating experience at Brunswick. CP&L probably can obtain the technical manpower, and develop the management needed for the Harris plant if Commission . . . requires specific improvement as a condition of the license. At Brunswick they apparently underestimated the problems and the need for people. As a result personnel were assigned extended work weeks that continued from weeks to months, and in some cases to years. This apparently contributed to the turnover of some of the personnel. This shortage of manpower undoubtedly contributed to some of the problems that were identified.

CP&L management still does not appear to have committed the required manpower and financial resources to assure that plant problems are identified promptly, the problems are analyzed by a person(s) knowledgeable in that area, that corrective action is initiated, and that the corrective action is followed up to assure the action is timely and appropriate. The following are some examples of the bases for the above conclusions.

Cantrell Testimony, Attachment 1, pp. 1-2.¹⁸ He then detailed problems he

¹⁸Attachment No. 2 to Mr. Cantrell’s testimony purports to be a typewritten version of his handwritten memorandum. It is unreliable, as the warning at the head of it portends.

perceived in (1) personnel training and experience; (2) the number of reportable occurrences (Licensee Event Reports) (LER's); (3) the enforcement history; and (4) technical problems. Cantrell Attachment 1, pp. 4-10. The technical problems he emphasized were RCIC (reactor core isolation cooling) system trips; contamination of lubricating oil in the diesel generators; repeated isolation of the HPCI (High Pressure Coolant Injection) system; and failing to keep HPCI room bulkhead doors closed to prevent common flooding. Those concerns are discussed below. Other problems were also mentioned, and, in concluding, Mr. Cantrell stated:

From the number of citations for failure to have and/or follow procedure (20) the plant does not appear committed to the procedures required by their technical specifications. This could be the result of management attitude, or ineffective QA program . . .

Cantrell, Attachment 1.

130. As we stated at the outset, Mr. Cantrell subsequently reported that he felt that his views were not adequately presented to the Board in the I&E testimony. At the hearing on remand he stated that, he "generally agreed with the facts set forth in the original testimony by Mr. Dance, but that he had specific differences concerning the conclusions and opinions." Cantrell, pp. 5, 6. He emphasized that the testimony indicated that CP&L willingly adopted a QA/QC program and management control required to assure quality, whereas they did not; the QA/QC program was required as a condition of the licensing of Brunswick Unit No. 2 in 1974, and that Region II of I&E had required improvements in management control in 1975, 1976, and 1977 because of the number of noncompliances and reportable occurrences, and problems in taking effective action. He further felt at the time of writing the memorandum that the construction permits for Harris should be preconditioned to require a recruitment and training program that would avoid staffing shortages and training inadequacies that occurred at Brunswick. Cantrell, pp. 7 and 10.

131. Mr. Cantrell no longer believes that the Shearon Harris permit should be conditioned, but this opinion is based upon improvements perceived since he last inspected Shearon Harris, which were reported to him by other inspectors and from a file examination. *Id.* p. 35; Cantrell, Tr. 3428, 3456-60.

132. However, contrary to the impression which might be gathered from the proposed findings of Applicant and Staff,¹⁹ Mr. Cantrell is not entirely free of reservations about CP&L's future personnel requirements.

He states:

¹⁹Applicant's proposed findings paragraph 64, p. 44; Staff proposed findings paragraph 124, pp. 72-73.

I am sure CP&L plans to increase their managerial and QA staffs in order to operate the Harris plants; however, based on my observations at Brunswick, I feel CP&L should be required to make a firm commitment to determine the requirements for Shearon Harris, develop a program to recruit and train the necessary personnel without having to deplete the Brunswick and Robinson's staffs for plant startup, or (at least) allow time for an orderly transfer of personnel so that the extended work weeks and personnel turnover will be minimized.

Cantrell, p. 10.

133. The "firm commitment" he has in mind is to "[B]asically develop plans and publicize them to hearing boards or to NRR of how they plan to meet demand power requirements." Cantrell, Tr. 3427. As stated, however, he believes CP&L will probably have the personnel needed to operate Harris. *Id.*, p. 10. See also Cantrell, pp. 31, 35.

134. Even though Mr. Cantrell stated that he agreed with the facts presented in the original I&E testimony, this is not the equivalent of endorsing the original testimony for completeness, feeling that his handwritten memorandum was the better factual presentation. Moreover he made it clear that the example problems he gave to support his conclusions were not all-inclusive. Cantrell, p. 6. In his testimony on remand he elaborates on his conclusions:

- Q. What do you feel about CP&L's management capability to the extent you were able to observe it? Do you feel CP&L timely identified safety problems or incipient safety problems?
- A. As a group, CP&L management is technically competent and are capable managers; however, I feel my comments on page 3 of my notes to Mr. Dance (Attachment 1) were valid when written. I believe CP&L's corporate management underestimated the number of technical and managerial personnel needed for the startup of the two Brunswick units. Because of their work load, the staff failed to take time to look at their plant for obvious problems, and sometimes failed to recognize the symptoms of some of the problems when they were obvious.
- Q. Do you feel that CP&L timely dealt with problems or incipient problems and took proper corrective action?
- A. No, as indicated on page 2 of my notes to Mr. Dance (Attachment 1).

- Q. Do you feel that CP&L had the proper followup after the identification of problems or incipient problems to see that timely and proper corrections were made?
- A. No, as indicated by the examples give on pages 6 to 9 of my notes to Mr. Dance.

Cantrell, pp. 8-9.

He stated further:

There have been times in which I felt that CP&L was willing to live with-in, and to use 'the grace period' to continue reactor power operation and of failing to initiate long-term corrective action. That is, there were repeated instances where operation continued under the Technical Specification Limiting Condition for Operation (LCO) for: conductivity of reactor coolant, unidentified primary coolant leakage, fuel oil in diesel lube oil system, RCIC problems, and others. A more conservative approach would be to identify the root cause of the difficulty and effect a permanent correction.

Cantrell, p. 32.

(e) Specific Episodes and Conditions of Operation

135. Throughout his testimony in the remanded hearings Mr. Cantrell amplified and explained the problems he believes to be the basis for his conclusions concerning CP&L's management commitments. We now address these problems specifically and the concerns expressed by other I&E officials.

136. Mr. Cantrell identified as the basic problem, and possibly the direct or indirect cause of all the other operating problems at Brunswick, inadequate training and experience of the management and technical staff. In his original memorandum he stated:

A review of training records (RPT 77-3) compared Figure 6.2-3 of the TS with the qualifications of the plant staff. Only one individual held an SRO license that was occupying the key positions listed in Figure 6.2-3 as "SRO license desirable" (total 9 positions) neither the plant manager or his superintendants have had RO or SRO training on a "BWR."

The plant has experienced a high turnover of middle and upper management personnel in the past 3 years. As a result, persons have been promoted or reassigned to position (sic) for which they are not as qualified

as the tech. spec. or FSAR imply. (3 plt. mgr., 3 assistants; 5 engineering supv.; 3 maint. supv.; 3 rad 4 environmental control supv.; & 3 operations supv.)

Cantrell, Attachment 1, p. 3.

137. Several major circumstances coincided during the 1974-1977 period which caused CP&L difficulties in the startup and early operation of the two Brunswick units. CP&L temporarily reduced wages and limited new hiring; then decided to rush to get an operating license for Unit 2; and it faced new NRC regulatory requirements it was not prepared to meet. Employees were required to work long overtime hours to meet CP&L responsibilities and goals. Some left. Of those remaining the level of experience, particularly in boiling water reactors, fell to a level which caused consternation among NRC officials. Paragraphs 138-149, 152-163, *infra*.

138. Failing to get the rates it needed, CP&L initiated an "earnings improvement program" prior to 1974. Its policy is to pay competitive wages but by February, 1974, it became necessary, for a period of four months, to reduce wages. During that period and beyond it, CP&L imposed a very strict hiring program; only the Chief Executive Officer could approve new hiring. Jones, 3527-29, 3565-66, 3633.

139. Although it would require employees to work long hours and endure personal hardships, CP&L decided to try to receive an operating license on Brunswick 2 by December 28, 1974. Jones, Tr. 3572, 3578; Utley Tr. 3623-24. It wished to receive the license by that date because, after that time, it would have to meet new ECCS requirements. Jones, Tr. 3581-3582; Utley, Tr. 3600. The General Electric analysis of the ECCS system on which CP&L hoped to rely to meet the new NRC requirements to be in effect after December 28, 1974, was not approved and the operation of Brunswick Unit No. 2 would have been substantially delayed pending proof of compliance with the new standards, unless Brunswick could become licensed under the old standards. Utley, Tr. 3578-3579, 3668-3669; Utley & Banks, pp. 49-53. Thus, CP&L viewed it as essential to have its Brunswick Unit No. 2 licensed by December 28, 1974, in order to minimize its costs and meet its load requirements. Jones, Tr. 3581. As a result the Brunswick plant staff developed a very narrow focus on "the critical path" for plant licensing and startup, and all work not viewed as directly necessary for those goals was deferred. Utley & Banks, p. 52; Cantrell, p. 8. CP&L was successful; it received its license on December 27, one day before the deadline. Jones, Tr. 3580.

140. Applicant urges findings to the effect that the pay cut was not in effect during the period personnel were working long hours to receive the Brunswick 2 operating license; that the hiring freeze did not affect nuclear

projects; and that the "earnings improvement program" was designed not to interfere with nuclear plants. Applicant's reply to Staff's proposed findings, p. 4.

141. The pay cut of Spring 1974 was restored by the time the effort to accelerate licensing began. Utley-Banks, p. 47. However this does not compel a finding that the pay cut did not have an effect upon employee turnover which in turn had its effect upon operations. As perceived by the I&E inspectors working with the employees involved, low pay was at least a contributing factor although long hours of overtime seemed to be the most frequently mentioned complaint. Staff Panel III, p. 50; Cantrell, Tr. 3463; Cantrell, written testimony, p. 11 and Attachment 3; Wessman, Tr. 2810.

142. With respect to the hiring limitations, the record is ambiguous. In describing the hiring limitation, Mr. Jones, the Chief Operating Officer, did not mention an exemption for nuclear plants. Tr. 3633. We cannot find that the earnings improvement program had no effect upon the nuclear program. The pay cut applied to everybody in the company. Jones, Tr. 3566. The testimony referred to by Applicant in support of its position, taken in context, indicates that the earnings improvement program would not be permitted to interfere with bringing the nuclear plants on line "[B]ecause those were the things that were going to help us out of this more than anything else," and the program ". . . did not interfere with our nuclear plants in the construction program. It was to our advantage not to." Jones, Tr. 3572, 3571. This testimony, considering the record as a whole, means simply that the earning improvement program would be modified when necessary to assure revenues. This doesn't help Applicant's position.

143. CP&L recognizes that the company fell behind in the startup and early operation of Brunswick. As Mr. Jones stated ". . . it was like running as hard as you can, doing everything you can, but you still can't gain as much as you want to because you're running after a bus all the time that's moving away from you." Jones, Tr. 3577-78. CP&L did not do the job representative of its own standards. Mr. Utley, 3599. The employee turnover rate was higher than CP&L wished it to be and employee were working longer hours that is consistent with good management. Utley-Banks, pp. 35, 51-53; Jones 3583-85; Utley 3596, 3599, 3613, 3624; Banks 3617-18; Applicant's Proposed Findings p. 26.

144. CP&L lays this situation to interconnected problems, (Jones, Tr. 3614), and especially attributes the changing regulatory requirements encountered during the construction, startup and early operation of Brunswick. Utley-Banks, pp. 41-51.

145. The evolution of interpretations and application of Quality Assurance Criteria, Appendix B to 10 CFR Part 50, resulted in significantly increased personnel requirements to administer the required QA/QC pro-

grams. *Id.* at 41-43. The issuance of proposed Appendix I to 10 CFR Part 50, which provided numerical guidelines for the AEC's policy of "as low as practicable" for radioactivity releases, resulted in extensive design reviews and the addition of several new systems to the Brunswick Plant in order to meet the new requirements. *Id.* at 41, 43-44. New security regulations required installation of the security system and implementation of additional administrative controls. *Id.* at 41-42, 44-46. The impact of the new ECCS rule in compressing the schedule for completion of construction and preoperational testing of Brunswick Unit 2 has already been discussed. See ¶139. The effect of regulatory changes was a dramatic increase in the number of man-hours required to complete the startup of the Brunswick Plant. Paragraph 149, *infra*.

146. Staff witnesses agreed that regulatory requirements were changing during the period of the Brunswick Plant startup and that the changes and increases in regulation required additional plant staffing. Long, Tr. 2307-2308; Minor, Schwencer and Haass, 3295-3305.

147. Even so, the NRC Staff is not satisfied with CP&L's explanation and points out that much of the regulatory requirements, particularly as to the quality assurance program had been promulgated or announced years before. Utley, Tr. 3600; Utley, Banks, Jones, Tr. 3638-41; Utley and Banks, pp. 42-43. Staff Proposed Findings Paragraph 109, p. 65. Applicant argues in reply that Staff's opinion misses the whole point, that ". . . there is no evidence in the record that anyone could have predicted the pervasive expansion of quality assurance requirements when the Quality Assurance Criteria, Appendix B to 10 CFR Part 50 were announced." Applicant's reply findings, p. 6.

148. While we pause for a moment to ponder why Applicant would suggest that the record would or should contain evidence that the QA criteria were predictable, we do not dwell long on the merits of the disagreement between Staff and Applicant. Whether the regulatory requirements were predictable is important only as it might relate to Applicant's fault in not being prepared to meet them. The condition we have imposed on the construction permit is not predicated upon an express finding of fault. Everyone with knowledge of the events agrees that in fact CP&L wasn't prepared. The Board is not being punitive in assuring that, with respect to Shearon Harris operations, CP&L will be prepared.

149. During the period Mr. Cantrell was principal inspector at Brunswick, August 1974 to July 1977, CP&L did not have sufficient staff at Brunswick, and the turnover of senior and middle management personnel at Brunswick was too high. Utley & Banks, pp. 50-53; Banks, Tr. 3618-3621, 3680-81. *But see* Utley, Tr. 3530-35. It was caused in part at least by these officials having to work long weeks of 55 to 70 hours, and even 80 hours,

for extended periods from at least August, 1974, until late 1976. Utley & Banks, p. 52; Utley, Tr. 3624; Cantrell, p. 10. During that period 6 of the 8 top or middle management positions at Brunswick had three incumbents. Cantrell following p. 11; Bd. Exh. 11, p. 114. CP&L concedes that its manpower needs for this period far exceeded its estimates and that it did not have sufficient staff. Utley and Banks, pp. 50-51, 53. The large turnover of supervisory personnel caused an undesirable discontinuity of experience at the plant, and although replacements meeting ANSI standards were hired for those who left or were transferred it was not always possible to hire employees as qualified as those who left or who had the desired boiling-water reactor experience. Utley & Banks, p. 51-55; Cantrell, Tr. 3476-3480; Utley, Tr. 3625; Wilber following Tr. 2833, pp. 4-5. In a number of cases the qualifications of the replacements were marginal. An orderly transfer of responsibility was not always possible. Cantrell, p. 35.

150. Off-gas system problems were cited as indicative of management control at Brunswick. After an explosion of hydrogen in the off-gas system at Brunswick on January 19, 1976, I&E's Howard Wilber, who was principal inspector for verification of the preoperational tests at Brunswick, investigated the incident and its causes. He found several examples of failure to perform proper design reviews and improper internal CP&L inspections. These were cited in an inspection report sent to CP&L on February 18, 1976. Staff Exh. 18, Att. 1, p. I-6; Wilber, following Tr. 2833. As a result of these explosions and other problems with CP&L's performance, a meeting was held in February, 1976, with CP&L officials to press them to take corrective action. Cantrell, Tr. 3464-3465; Staff Panel III, Att. B.1, C.1; Bd. Exh. 11, p. 99. CP&L on March 17, 1976, replied that although the defects found by the inspector on investigation of the off-gas explosion indeed existed, there was no failure in CP&L's quality control procedures as those procedures did not call for checking the particular facet of the improper equipment (pressure gage) that led to the explosion and because the failure to conform to specifications (taped vent line) were caused by its employees' acts after quality control inspections were made. Staff Exh. 18, Att. 2; Utley, Tr. 3655-3663.²⁰ These explanations do not negate the inferences that quality control was inadequate. Even though it is true, as Applicant urges, that plant management acted responsibly in setting of a task group to review the problem, (Wilber, Tr. 2850) this is irrelevant to whether adequate quality control was present before the defects were discovered.

151. In September 1976 Mr. Wilber found that CP&L's QA personnel

²⁰But see CP&L's Mr. Utley at Tr. 3655, where we are reassured when he concedes that the installation of an improper gage was an oversight and that there was a failure of quality assurance "to pick it up."

had only observed 2 or 3 of the numerous preoperational tests. Wilber, Tr. 2838-39, 2855-56; Bd. Exh. 11, p. 25; Staff Exh. 18, Att. 4, p. I-2. Although such observation by QA personnel was not specifically required, it was good practice. Wilber, Tr. 2859-62. Again, later, in "test condition III" when Brunswick was starting up, Mr. Wilber's inspection revealed that the CP&L site QA personnel had not observed this phase of the startup, although that would be expected. Bd. Exh. 11, p. 25; Wilber, p. 4, Tr. 2838.

152. On June 21, 1976, Mr. Cantrell, as principal inspector at Brunswick, wrote a memorandum to Frank Long, his supervisor, calling attention to the high turnover in management at Brunswick, the general lack of experience of those people and their lack of BWR experience. Cantrell, Att. 3. He recommended that the matter be called to the attention of CP&L and/or NRR and it be determined what plans they had to stabilize their work force. Cantrell, Attachment 3. The turnover problem continued however, and in January, 1977, Messrs. Cantrell and Wilber met with their supervisor, Mr. Dance, and expressed concerns about the high turnover of personnel at Brunswick and lack of any in-depth BWR experience. Bd. Exh. 11, p. 26; Wilber, Tr. 2839, 2856-57. This was also expressed in a memorandum from Cantrell to Dance of January 4, 1977, where he once again urged these matters be discussed with CP&L. He also urged that a management systems inspection be conducted by other inspectors and supervisors. Cantrell, Att. 5, Tr. 3469. His job completed, the Test and Start-up Superintendent had left CP&L. Utey, Tr. 3634. The new plant manager did not have experience with boiling-water reactors. Wilber, Bd. Exh. 11, p. 26.

153. As a result of the inspectors' request, I&E inspector Richard Wessman was assigned to evaluate Brunswick Plant supervisory activities. Bd. Exh. 11, pp. 26, 113. He did this from January 17-21, 1977, and provided in a memorandum to Mr. Dance and appraisal of the plant's senior staff's qualifications and involvement in plant activities. He surveyed activities during the beginning two weeks of January.

154. His findings (relevant to this proceeding) were:

1. Supervisory Involvement In-Plant

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Of the four most senior supervisory personnel (Plant Manager, Operations-Maintenance Superintendent, Technical-Administrative Superintendent, and QA Supervisor) two had not been in the plant during this two-week period. Of the other senior supervisors, two had been in the plant once and one had been in the plant twice during this period. None of these supervisors was away from the facility (vacation, etc.) for more than one day during this period.

• • • • •

2. Training and Qualification

All the supervisory personnel meet Technical Specification and ANSI N18.1—1971 qualification requirements. However, several statistics were determined from training and personnel records reviewed during this inspection:

- a. Most training records did not reflect recent training received.
- b. The site training coordinator has no formal BWR training (but has nuclear Navy experience).
- c. Only two of the 10 senior supervisors have BWR training, other than a 36-hour supervisor's short course given in November-December 1976.
- d. Only four of the 10 senior supervisors have nuclear Navy or formal (college) nuclear-related education.
- e. Four of the 10 senior supervisors have no record of receiving QA training, other than a short introduction given in the 36-hour supervisor's course.
- f. Three of the four most senior supervisors on-site have only been on-site about seven months. Due to the scheduling of drills, they have participated in only one fire drill and in no emergency plan drills.
- g. Nine [later corrected to eight, Tr. 2795] of the senior supervisory positions are identified as "SRO License desirable" in Figure 6.2-3 (Plant Staff Organization) of the Technical Specifications. Only one of these supervisors has a SRO license and the licensee stated that there were no immediate plans for others to obtain a SRO license.

3. Personnel Turnover

There has been considerable turnover of supervisory personnel in the past year. Except for the QA Supervisor, Administrative Supervisor, and Training Coordinator, all of the top ten supervisory/management positions on the site have had at least three occupants.

Bd. Exh. 11, pp. 113-14.

155. Although Inspector Wessman recognized that Brunswick personnel met the minimum ANSI requirements, he concluded that training should be

increased, especially BWR technical training and Senior Reactor Operator training for supervisors; that supervisor involvement in plant activities be increased emphasizing QA audits; and that personnel turnover be stabilized. Board Exh. 11, p. 116. Wessman, Tr. 2792-2828. None of inspection findings actually constituted formal noncompliances, i.e., violations, infractions or deficiencies, but I&E management deemed them to be important and held another meeting with CP&L officials to discuss *inter alia* the turnover of CP&L supervisory personnel. Staff Panel III, Attachment C.2., p. 2. I&E also advised CP&L's chief executive officer concerning its observation about personnel training. Staff Exh. 18, Attachment 7, III-2; Staff Panel III, Appendix C; Wessman, Tr. 2796.

156. Mr. Wessman's inspection of Brunswick's management highlights a problem which has occupied much of the record on remand, which has become important because of the time devoted to it, and because, in our view, it demonstrates a rather casual attitude on the part of CP&L toward the NRC regulatory process. The technical specifications (tech. specs.) for Brunswick identify eight supervisory positions for which a Senior Reactor Operator (SRO) license is "desirable."²¹ At the time of the January 1977 inspection only one supervisor was an SRO licensee and there were no plans for SRO training for those occupants. Bd. Exh. 11, p. 114. At the time of the remanded hearing in March, 1979, still only one supervisor held an SRO license, but five others have some SRO training. Banks, Tr. 3633.

157. The witness from the Office of NRR whose responsibility is to establish technical specifications does not know how the "SRO desirable" tech specs were included in the Brunswick licenses; NRR did not rely upon them in approving the operating licenses; believes that unenforceable tech specs are not desirable; and had been considering the elimination of the optional standards for several years. Allenspach, Tr. 3306-09. The "SRO desirable" tech spec remains in effect although NRR has recently recommended that it be deleted. Allenspach, 3315.

158. I&E officials believed that, even though the SRO licenses were only discretionary with CP&L, the matter was important enough to be pursued and to be reported to NRC management. Board Exh. 11, p. 116; Staff Exh. 18, Attachment 7, III-2; Long & Dance, 3063-64; Long, Tr. 3071. Mr. Cantrell believes that at least a majority of the designated supervisory positions should be filled by SRO licensees or the equivalent. He explained that 10 CFR 50.54(1) requires that a licensed Senior Reactor Operator direct the licensed activities of Licensed Operators. 10 CFR 55.31(b) specifies that the

²¹QA Supervisor, Operations Maintenance Superintendent, Maintenance Supervisor, Environmental and Radiation Control Supervisor, Technical and Administrative Superintendent, Engineering Supervisor, Administrative Supervisor and Training Coordinator, Tr. 2797.

license is limited to the facility for which it is issued. The operating supervisor *is required* to have an SRO license. Section 13.1.3.1 of the Brunswick FSAR states that the plant manager will have "Acquired experience and training normally required for examination by the AEC for a Senior Reactor Operator's License. A SRO's license is desirable, but is not required." Cantrell, p. 12.

159. Functionally, Mr. Cantrell's concern is that the "SRO desirable" plant supervisors have been designated as members of the Plant Nuclear Safety Committee (PNSC) by Technical Specification 6.5.1.6. The PNSC is the official review group specified by the technical specifications for review of all plant procedures, proposed tests and experiments, changes or modifications to systems or equipment, events that require prompt notification to the Commission, review of operations to detect potential nuclear safety hazards, and to investigate all violations of technical specifications. The regulations require that an SRO be available or on site. He believes that an SRO or the equivalent should participate in any official safety actions taken by the PNSC. Cantrell, pp. 12-13.

160. In addition to the void in the "SRO desirable" positions, the number of other SRO licensees at Brunswick dropped from 31 to 20 between October 1974 and July 1975.²² Mr. Cantrell believes that the effect of this was that key persons failed to recognize problems that should have been obvious or they put problems on the "back burner" either because of lack of familiarization or overwork. Cantrell, p. 14.

161. Mr. Cantrell's supervisors at I&E, Messrs. Long and Dance, do not completely agree with him. They believe that the lack of SRO's among management resulted in a slight decrease in efficiency of facility operation based upon management decisions, and that plant safety was not effected. But they observe that management had to lean more heavily on the licensed operating staff and they support the theory that management with a licensed operator's background or its equivalent is desirable because of the enhanced knowledge of operational requirements. Staff Panel III, p. 63.

162. Mr. Cantrell seems to be alone in his opinion that a majority of the Brunswick supervisors should have been required to hold SRO licenses. Neither his supervisors at I&E nor the Office of NRR share this view. We do not have jurisdiction over the operations of Brunswick and are not authorized to decide that factual issue. But we agree with Mr. Cantrell's conclusions that the admittedly inexperienced Brunswick management

²²At the time of the remand hearing there were thirty SRO licensees at Brunswick; only 10 SRO's are required for plant operations. Banks, Tr. 3520-21. At no time does the record indicate that the level of SRO licensees fall below safe operating requirements. We are discussing management capability only.

would have been improved with SRO licensees and that it needed improvement.

163. It is true, as Applicant urges in its proposed findings, that Mr. Cantrell was unable to establish a casual relationship between the fact that Brunswick Plant managers did not possess SRO licenses and the specific technical problems that he identified and which we discuss below. Applicant's proposed finding paragraph 39, citing e.g., Tr. 3359-61; 3401; 3406-07. But this misses the thrust of Mr. Cantrell's concerns and his testimony. First, it is difficult to envision any evidence available to NRC inspectors that would establish a direct link of causation between, for example, careless lubrication of generator diesels and the licensing status of plant management. Cantrell, Tr. 3360. Most important, Mr. Cantrell's major concern was not whether the SRO paper was possessed by the managers, but their overall inexperience and overwork. Cantrell, Tr. 3399, 3401-03, 3406-07, 3455 and particularly Tr. 3472-73.

164. Mr. Jones, CP&L's chief operating officer testified that he ordered the "SRO desirable" designation for plant managers as an incentive to personnel to take the related training. Tr. 3516-17. This training would give the employee and the company flexibility in assignments. Jones, Tr. 3632. The "SRO desirable" designation appeared on an official company chart but Mr. Jones could not recall whether the chart was prepared for the PSAR and he didn't know whether the designation was to be included in the Brunswick technical specification. Tr. 3517; 3761-62. We are not persuaded by this testimony that CP&L handling of the SRO problem is an example of good management.

165. We believe the matter to be important. By permitting the "SRO desirable" specification to be incorporated into the Brunswick operating licenses there is, at minimum, an implied promise that CP&L will attempt to meet this specification. No matter that NRR did not rely upon the promise, the promise was made to the NRC and thus to the public. Moreover, there is always a danger that, intended or not, such representations in the PSAR could serve as an inducement for an operating license, or serve to suggest falsely to the public that the plant management will have the specified licenses. The employee motivation reason advanced by CP&L simply isn't convincing; no other evidence supports this position, and we don't believe that a table of organization is an effective motivator. Something is missing in the explanation.

166. The only record evidence, persuasive or not, is from CP&L, to the effect that employee incentive was the only purpose. Accepting this theory, then we must conclude that CP&L nevertheless either deliberately or negligently allowed the chart to be included in its PSAR. Mr. Jones can't remember and CP&L has not bothered to explain further. This is a strong

indication that CP&L, in this instance at least, did not regard its representations to the Commission to be a serious matter. This inference is reinforced when we recall the fact that the "SRO desirable" problem was discussed with Brunswick management immediately following the January, 1977 inspection. Board Exhibit 11, p. 116, I&E directly advised CP&L's Mr. Jones of the matter on February 11, 1977. Staff Exh. 18, Attachment, 7, III-2. NRR has been troubled by the problem since 1974. Allenspach, Tr. 3317. The SRO problem was referred to in Mr. Cantrell's memorandum about the testimony in the original hearing, and was one of the causes of this remand. Cantrell, Attachment 1, p. 3. Yet, CP&L, untroubled by it all, has not acted to have the ambiguous specification removed from its technical specifications for Brunswick or to provide a full explanation.

167. A failure of CP&L management control, cited by Mr. Cantrell, involved the addition of waste diesel fuel instead of lubricating oil to emergency diesel generators on October 2, 1975. This was caused by CP&L improperly storing the waste diesel fuel oil in drums labelled "lubricating oil" in the diesel generator building and the failure to check what was in the drums before it was added to the lubricating oil in the generators. Utley & Banks, p. 66; Cantrell, Tr. 3486; Banks, Tr. 3680. All of the drums stored in the diesel generating building contained waste lube or fuel oil and none had seals. Tr. 3370. The licensee realized this error when beginning to add the waste fuel oil instead of lubricating oil to diesel No. 3. Cantrell, Tr. 3369-3370. The operators estimated that 110 gallons of waste diesel oil had been added to the 1000 gallon lubricating oil tank on diesel No. 2, and 55 gallons to the 1000 gallon tank on diesel No. 1. After speaking with representatives of Mobil Oil Co., it replaced the lubricating oil in Diesel No. 2 with the correct oil from sealed containers. Cantrell, Tr. 3370. From the information given that only 55 gallons of waste oil were added to the lubricating oil tank for diesel No. 1, Mobil advised that it was desirable to replace the oil in No. 1 but it was not required immediately. There was no replacement oil on hand. Also the lube oil in all four diesels should be sampled for viscosity. Cantrell, Tr. 3370-71, 3386-87.

168. CP&L maintains that records verified that no oil had been added to diesels 3 and 4 during the period of time that the waste oil had been stored improperly in the diesel generator building; therefore the possibility of incorrect oil being added to these diesel was said to be very remote. Utley-Banks, pp. 66. It was apparently upon the same basis that Brunswick's operators computed that only 55 gallons of waste oil had been added to diesel No. 1 because that conclusion was predicated upon the assumption that this engine had previously contained lubricating oil free from dilution except for normal dilution from operation. Tr. 3370-71.

169. The Staff points out, however, that no one could state how long the

waste oil drums had been stored in the diesel generator building, thus no one could verify that waste oil had not been added on earlier occasions. Cantrell, 3378-83, 3486-87. This point was made specifically twice during Mr. Cantrell's testimony. *Id.* No effort was made to refute it by Applicant. Banks, Tr. 3556-58. Thus, we conclude that at that time Applicant did not know with reasonable assurance whether diesels 3 and 4 had diluted lubricant and while it knew that No. 1 was diluted, it didn't know how much. The advice it received from Mobil was based upon unreliable information provided by CP&L.

170. Applicant's consultant at Mobil advised that the result of any dilution would be a lowering of the viscosity to less than the required 40 wt. although some dilution from fuel leakage is normal. Tr. 3370. Applicant itself did not perform a viscosity test for a long time, if ever.

171. CP&L witnesses explain this failure by referring to its contract with Mobil to advise them on their lubricant problem, and that appropriate sampling bottles to be supplied by Mobil were needed and requested for this purpose. Samples were not taken for 7 days; the record does not disclose when the results were known. Utley-Banks, p. 66; Banks, Tr. 3556. The difficulty with this explanation is that special sampling bottles from Mobil were not needed for an immediate viscosity test. A test for viscosity for industrial purposes is a very simple one. Viscosity is measured by observing the time needed for the fluid to flow from a filled container of specified dimensions through an opening in the bottom of the container.²³ Mr. Cantrell, who concedes he is not an expert in oils, believed that the viscosity test could have been made in a few hours either in CP&L's laboratory or perhaps in a local high school lab. Tr. 3387-88. We agree. CP&L's Mr. Banks testified that Brunswick did in fact have a lab, he didn't know whether it could perform a viscosity test but any good lab could do such simple type comparison tests. Banks, Tr. 3680. He also states that the Mobil's insistence upon special sampling bottles is an indication by Mobil that "it's best to make sure there's not something beyond viscosity." Banks, Tr. 3585. The record, however, is void as to what the other problems with the lube oil might have been.

172. Mr. Cantrell, in addition to criticizing CP&L for not testing viscosity, believed that CP&L was slow in obtaining the replacement oil for the contaminated No. 1 diesel—4 or 5 days. Tr. 3384.

173. Overall CP&L's explanation, as developed on cross-examination, is that it did its best. It had no sampling bottles; it had no oil for No. 1. Tr.

²³The Board advised the parties of its intention to take official notice of this fact by memorandum dated May 10, 1979, referring to the *Standard Handbook For Mechanical Engineers*, Seventh Edition (McGraw-Hill) pp. 3-49.

We now notice this fact.

3369-85. Mr. Cantrell believed that CP&L lacked a sense of urgency and he summarized quite succinctly when he stated 4 or 5 days was too long to wait for oil and "If the plant had remained down during that period of time I'm sure it wouldn't have taken four days." Tr. 3384. We favor Mr. Cantrell's point of view.

174. Another problem reported by Mr. Cantrell was the HPCI system differential temperature spurious isolation. HPCI stands for high pressure coolant injection system, which is a part of the ECCS and is used to supply water to the reactor when the pressure is too high for the low pressure cooling systems to operate. The HPCI will operate only when the reactor pressure and temperature are sufficient to provide steam to operate the HPCI turbine driven pump. Cantrell, pp. 21-22.

175. Since the line providing steam to operate the HPCI is open directly to the reactor and penetrates the primary containment, it is required to have automatic isolation capability in the event of a line break. This line does not penetrate the secondary containment. Several detection devices are employed to initiate isolation in the event of a leak or a line break. One of the devices compares the temperature of the inlet and the outlet ventilation air for the HPCI room. In the event of a line break, the outlet temperature would rise. Upon a 50-degree rise in outlet temperature, the system would isolate. Because of the latent heat of the building, an isolation could also occur with a sudden drop in inlet temperature. This occurred several times, mostly during the winter months when large changes in outside air temperature occurred. With an automatic isolation, the HPCI is incapable of performing its safety function until reset even though the leak may be very minor. *Id.*

176. The corrective action required a change to the Brunswick technical specifications. Written justification to remove automatic isolation of the HPCI with a 50°F differential in ventilation temperature was submitted timely to NRR, and a meeting was held February 16, 1977, to review this proposed change. The change request was approved April 28, 1977, to be effective on issuance. Cantrell, pp. 21-22; Utley-Banks, pp. 67-68. Mr. Cantrell discovered that no action had been taken on the approved change during an inspection of June 6-10, 1977 and he brought the matter to the attention of Brunswick management. The change was effected by July 4. Staff Panel III, p. 57.

177. Testing to assure that the HPCI system would still operate after the changes was not conducted until September 3, 1977. CP&L justified the delay in testing on two bases. The tests could not be conducted in Spring because hot weather was required, and the testing was deferred until September because other plant problems had priority. Utley-Banks, p. 68. Mr. Cantrell and Staff fault CP&L for not initiating the approved change

before June, and not testing the effects during the hot weather of July and August. Staff Proposed Findings Paragraph 120, p. 70. CP&L states that since the initiating temperature differential occurred only from December through March, the delay was harmless.²⁴ Utley-Banks, p. 68. We believe Mr. Cantrell was correct in pressing for early change and testing, given the importance of the system and his experience with CP&L. Tr. 3417-19. He concedes, however, that there was no apparent immediate need except for the tech spec requirement. *Id.* Tr. 3417.

178. The dispute lies principally in the varying judgmental viewpoints of the parties. We cannot find that CP&L acted outside its reasonable discretion in deferring the change and testing in favor of work of a higher priority. However, the fact that the HPCI change and testing, which was important but not immediately urgent, had to be deferred to work of even greater importance is yet another indication that CP&L was behind and struggling to catch up in its Brunswick operations. This is the most significant fact to emerge from the HPCI spurious isolation episode.

179. The problem involving the watertight bulkhead doors between the HPCI and the separate rooms housing the dual Residual Heat Removal (RHR) systems was another matter relevant to management control at Brunswick that Mr. Cantrell called attention to in his memorandum to Mr. Dance of September 16, 1977. Cantrell, Attachment 1, p. 9. CP&L indicated to the NRC during license review that this ECCS equipment was to be located in separate watertight compartments to prevent loss of redundancy in the case of flooding. The dual RHR systems are located in two separate rooms with the HPCI system, also an ECCS system, in a room between them. The safety-related RCIC system is also in one of the RHR rooms.

180. To provide access to the HPCI system there are watertight bulkhead doors. The watertightness of each of the compartments must remain secure, as recognized by CP&L in the license review, so there could be no common failure of equipment from a single cause. Leaving the doors open so that flooding could occur in all compartments in an emergency would make the equipment of little use in such a situation. Banks, Tr. 3546, 3673-74; Applicant's Reply Findings, p. 9. Common flooding of compartments would lead to loss of redundancy necessary in emergency situations. Banks, Tr. 3675-3676. The common flooding protection intended to be

²⁴Staff witnesses state that isolation was "most prevalent in cold weather" (Staff Panel III, p. 57) and "mostly during the winter months." Cantrell, p. 21. There is no need to go to the LER's for this data because it is clearly a function of cold weather whenever it might occur. HPCI was inoperable 18 times in 1975, 8 times in 1976, and 13 times in 1977. Staff Panel III, p. 56; Bd. Exh. 10, p. 29.

assured by the bulkhead doors is not merely a theoretical "defense in depth" concept. The area affected has had a continuing flooding problem and has put the plant into a limited condition of operation (LCO) when instrumentation was disabled. Banks, Tr. 3673-74. On at least one occasion Brunswick had 18 inches of flood water over the level of the threshold of the bulkhead doors. Banks, 3676-77. Further, the bulkhead doors must be kept closed in order to maximize the effectiveness of the CO₂ fire suppression system for HPCI turbine fires. Cantrell, p. 19.

181. On December 15, 1976, both bulkhead doors were found open and unattended. The latching mechanism on one was jammed so it could not be closed. CP&L repaired the door, posted a sign to keep the doors closed, and instituted a system to check that they were kept closed on each shift. Again on February 14, 1977, both doors were found open. CP&L reviewed with all its employees the need to keep the doors closed. On July 21, 1977, one of the doors was again found open. There was no alarm to tell if the doors were open. A few days later, CP&L agreed to install annunciator alarms on the doors that would signal in the control room when the doors were open. This was desirable so that a Senior Reactor Operator would know when the door is open. This was confirmed by a CP&L letter of October 5, 1977. Banks, Tr. 3673; Cantrell, pp. 18-19; Att. 12, 13, 14, 15; Cantrell, Tr. 3406-12, 3446-49, 3474-75; Staff Panel III, p. 61-33.²⁵ This change was not completed until November 1978 and February 1979, 15 months later. Dance, 3046; Applicant's Proposed Findings Paragraph 55, p. 39.

182. CP&L's method of handling the annunciator alarm installation was to add the HPCI room bulkhead door alarms to the fire protection program study. Cantrell, Tr. 3449-50, 3473-75; Staff Exhibit 21 at I-7, I-5. CP&L explains the delay in alarming the door by expressing the opinion that it was not a high priority item. Administrative controls then in effect consisted of posting notices on the doors requiring that they be kept closed and requiring an auxiliary operator to check the doors once each shift. Applicant states that these controls were working and other safety related work had a higher priority. CP&L's Mr. Banks also noted that there were ways to detect flooding between the rooms before the flooding became a problem. Banks, Tr. 3543-47; 3760-61; Applicant's Proposed Findings, Paragraph 56, p. 39.

183. Applicant proposes a finding that Staff witnesses agreed that the administrative controls had been effective although not foolproof. Applicant's Proposed Findings, Paragraph 56, p. 39, citing Dance, Tr. 3034, 3198-99, and Cantrell, Tr. 3408. This finding would be unjustifiably

²⁵See also Utley-Banks, p. 67; Dance. Tr. 3034-39, 3046-47, 3197-99, 3240-50; Banks, 3543-46, 3669-79, 3780-81.

generous to Applicant. The most the evidence establishes is that the I&E witnesses never found the doors open again. *Id.* and Dance, Tr. 3211. Moreover, CP&L management does not know how long the problem existed before Mr. Cantrell discovered it. Banks, Tr. 3669.

184. There are several aspects to the HPCI door episode that trouble the Board and reflect upon CP&L management approach to this important safety system. First, action to alarm the doors was plainly just too slow. To state that it was slow because it was coupled with the fire protection program doesn't satisfy us. This excuse fails to recognize the gravity of the problem and, if anything, it reflects unfavorably upon the fire protection program. To state that Brunswick had items of even greater priority does not comfort us; instead it raises the possibility that we are missing considerations of even greater importance, and it adds one more episode to the evidence that Brunswick management could not keep up with its operational problems.

185. Finally we are troubled by the indication that CP&L's management has taken a very casual attitude concerning NRC's regulation of this matter. CP&L knew as early as April 18, 1978, when Mr. Cantrell's handwritten memorandum was filed with the Appeal Board and served upon the parties, that the HPCI door problem would have high visibility at the NRC. When the Commission remanded this matter for additional hearings it was clear that the issue would be in controversy, and indeed Applicant prepared testimony addressing the issue stating only that plans have been made to install alarms. Utley-Banks, p. 67. Yet it was not until March 6, 1979, the fifth day of the remanded hearings, that Applicant's representatives learned that the door had in fact finally been outfitted with annunciators. Dance, Tr. 3046. In short, Applicant's witnesses were not prepared to advise the Board. But more important, communication between corporate management and plant management is lacking. This, of course, diminishes our confidence in the commitment made by CP&L's top management concerning nuclear safety. We believe management is committed, but question the effectiveness of its commitment.

186. Mr. Cantrell's concern with the Reactor Core Isolation Cooling System (RCIC) involves a system that provides feedwater when the normal feedwater system has been isolated during a shutdown. It is not an Emergency Core Cooling System (ECCS), but is a partial backup for the High Pressure Cooling Injection (HPCI) System which is an ECCS system. Cantrell, p. 15; Utley, Tr. 3703. The RCIC would "trip out" as if running at overspeed if it was started after it sat idle for a few days. Utley and Banks, pp. 64-65; Cantrell, Tr. 15-16; Staff Panel III, p. 59. This problem was first identified in July, 1975, and first was considered to be caused by an electronic overspeed trip being set too low. Cantrell, Att. 1, p. 6, Attach-

ment 11; Utley and Banks, p. 65. However, this was not the cause and the system was not corrected until the following year when the hydraulic system on its governor mechanism was modified. Utley and Banks, p. 65; Cantrell, Tr. 3488.

187. Mr. Cantrell was mistaken in his belief that CP&L initiated corrective action only after the problem was identified to Brunswick Plant management after an inspection. Cantrell Testimony at 16, Tr. 3388-3389. Applicant demonstrated that some corrective action had been initiated prior to Mr. Cantrell's inspection. Applicant Exhibits JJ and KK; Tr. 3388-3396. Mr. Cantrell's impression that corrective action had not yet been taken was probably caused by the fact that the event occurred before his inspection of October 6-9, 1975, but CP&L did not prepare the Licensee Event Reports covering the incident until October 31, *Id.* The matter is covered here for completeness and because it was one of the episodes referred to by Mr. Cantrell in his memorandum of September 16, 1977. Thereafter, at Mr. Cantrell's suggestion, RCIC was tested daily at Brunswick. Tr. 3396. Two separate problems were identified by CP&L, working with its vendors, and resolved by eventual hardware modification the next year. Utley-Banks Testimony at 65.

188. We do not find that CP&L's handling of the RCIC overspeed problem at Brunswick is an indication of management failure.

189. Another problem cited at the hearing involved the augmented off-gas system. Cantrell, pp. 23-24, Att. 1, p. 10; Cantrell, Tr. 3429-3430. The inoperability of this system could have an adverse effect on radioactive gas releases in the case of loss of fuel integrity. Staff Panel III, pp. 19-20; Dance, Tr. 3184-3186. However, this augmented system was designed to bring releases below the design limits of Appendix I to 10 CFR Part 50 and CP&L's technical specifications, which the Brunswick system now meets. Schwencer, Tr. 3258-3259; Dance, Tr. 3185. The problem did not arise until April 1977, when the licensee attempted to put this system into operation. Cantrell, pp. 23-24. There were hydrogen explosions in the system and it will not work. Banks, Tr. 3550. The licensee is investigating a recombiner to replace the augmented system which will recombine oxygen and hydrogen to form water, and proposes to do this work in 1981. Banks, Tr. 3552. As any increased radioactive releases caused by fuel failure could be controlled by either reducing power or shutting the plant down and since the licensee is presently meeting requirements, the Staff of NRR has not objected to the licensee's proposed schedule. Schwencer, Tr. 3280-3286. The Board is satisfied that CP&L's management has acted responsibly with respect to this problem. However, at the time of Mr. Cantrell's original memorandum and the evidentiary hearing on the Shearon Harris construction permit, the matter was still unresolved and remained so at least until June, 1978. Banks,

Tr. 3580-81. Mr Cantrell was appropriately conservative in expressing his concerns.

III. CONCLUSIONS AND REASONS FOR DECISION

190. For the reasons summarized in paragraph 92, page 63 *supra*, we conclude that Applicant has the management capability and technical qualifications to design and construct the Shearon Harris Nuclear Power Plant. We do not disturb our conclusion to this effect in the Initial Decision of January 23, 1978. 7 NRC 92, 142. There is a comfortable preponderance of the evidence that CP&L and its contractors, with the surveillance of the NRC, can construct the facility in accordance with the SAR and applicable regulations. Paragraphs 62-92, *supra*.

191. Pursuant to 10 CFR 50.34(a) (6), an applicant for a construction permit is required to submit with its preliminary safety analysis report a preliminary plan for the applicant's organization, training of personnel, and conduct of operations. Specifics of the operational plan, including its managerial and administrative controls, may be deferred until the application for an operating license under 10 CFR 50.34(b) (6) (7). The extent to which the Board (during a construction permit proceeding) may inquire into the Applicant's management capability to operate Shearon Harris is in doubt. We are unable to identify any precedent concerning the dividing line between the preliminary plan required by Section 50.34(a) and the final details required by Section 50.34(b).

192. In any event, whatever authority the Commission has to inquire now into CP&L's management capability to operate the plant later rests with this Board. The Commission expressly remanded that issue to us in its order of September 5, 1978. 8 NRC 293, at 294. Moreover, the Applicant, perhaps in a spirit of cooperation, has raised no objections to our detailed inquiry into CP&L's operational management capabilities and, in fact, proposes a conclusion that it has the management capability to operate Shearon Harris. Applicant's Proposed Findings—Conclusions of Law, Paragraph 68, p. 46.

193. We recognize that in the context of the regulations, the Commission's remand order, and simple logic, CP&L is not required to have in its employment now a full complement of personnel trained to manage a plant still years off stream. The standard we have employed is that the Applicant has the burden of providing during this reopened construction permit proceeding that there is now a reasonable probability that it will timely have the management capability and technical qualifications to operate the plant without undue risk to the health and safety of the public. Stated another way, Section 50.34(a) (6) requires a reasonable showing that Applicant will be able to comply with Section 50.34(b) (6) and (7).

194. It is, of course, fundamental to Commission licensing law that an applicant seeking a construction permit carries the burden of providing that it is entitled to one. 10 CFR 2.732. This is true even where the issue in controversy has not been raised by the applicant. *Tennessee Valley Authority* (Hartsville Nuclear Plant) ALAB-463, 7 NRC 341, 356, 360 (1978); *Union Electric Company* (Callaway Plant) ALAB-348, 4 NRC 225, 227-231, 233. The burden on particular issues may be triggered by a showing sufficient to require reasonable minds to inquire further. *Vermont Yankee Nuclear Power Corporation v. NRDC* 435 US 519, 486, 55 L Ed 2d 460 (1978). With respect to specific issues where the burden is one of persuasion, the magnitude of the burden upon a litigant to whom the burden is assigned should be influenced by the gravity of the matter in controversy. *Virginia Electric and Power Company* (North Anna Power Station) ALAB-256, 1 NRC 10, 17 n. 18.

195. The managerial and technical qualifications to operate a nuclear power plant safely is an issue of the greatest gravity and we place a large burden of persuasion upon the Applicant to convince the Board by a preponderance of the evidence that it has prevailed on the issue. The factual episodes covered by the evidence, particularly the problems of understaffed, underexperienced, and overworked personnel during the startup and early operation of Brunswick, and some of the surrounding circumstances of the early operation of that plant has triggered a burden upon Applicant to persuade us that it is entitled to an unconditioned construction permit.

196. Applicant apparently views its evidentiary burden to be somewhat different. It proposes a finding that, "The Board is not in a position to determine, even after the considerable evidence in the record, whether, for example, it was reasonable for CP&L to take as long as it did to alarm the HPCI door." Applicant's Proposed Findings, Paragraph 60, p. 41. In fairness, Applicant has an additional point that it is not necessary to resolve that issue or the other specific allegations made by Mr. Cantrell because CP&L met NRC requirements and operated the plant in a reasonable manner. *Id.* We don't agree that the factual issues may be avoided. The episodes were important. The facts are primarily in the hands of CP&L who could better have explained the circumstances.²⁶

197. Setting aside for the moment the question of burden of proof or persuasion, the evidentiary record of this proceeding established clearly that the quality of CP&L management of Brunswick from early 1974 until mid

²⁶The Appeal Board's *res ipsa loquitur* discussion in *Atlantic Research Corporation*, (ALAB-542) May 2, 1979, pp. 622-623, although in the context of a civil penalty case, is a good explanation of why evidentiary burdens are so allocated. See also *Union Electric Company*, *supra*, 4 NRC at 231.

or late 1977 fell below desirable levels, even according to CP&L's standards. A fair inference from the evidence is that some of the problems discussed above, such as the HPCI room bulkhead door problem and the diesel generator diesel lubrication problem, is the proximate result of management failure.

198. The Applicant urges us to find that despite the operational problems that might have existed in the past, CP&L has taken effective action to solve these problems, citing appropriate references to the record. Applicant's Proposed Findings 64-65, pp. 43-44. The NRC Staff also urges a conclusion that CP&L's operations have considerably improved since Mr. Cantrell recommended that the construction permit be conditioned. Staff Proposed Findings Paragraph 124, pp. 72-73. We agree. Were it not so, the remedy might have been to suspend the construction permit until the requirements of Section 50.34(a) (6) have been satisfied.

199. Instead we have the option of conditioning the permit to satisfy our doubts about CP&L's management capability to operate Shearon Harris. Although the Board predicts, based upon this record, that CP&L will be able to demonstrate during the operating license review that it then has the technical qualifications and management capability to operate Shearon Harris safely, its operating experience to date raises sufficient doubt that a demonstration of that capability in an adjudicative proceeding is warranted.

200. The NRC Staff argues that neither NRR nor Region II of I&E nor Mr. Cantrell, who originally thought so, believe that CP&L's construction permit should be conditioned upon improving its staffing, manpower practices, or training. Proposed Findings 124, pp. 72-73.²⁷ The testimony cited by the Staff in support of this position fairly represents the record. *Id.* But we have decided on two bases not to follow the expert advice of the Staff. First, even the Staff's position is largely predicated upon the assumption of continuing improvement of CP&L's management capability. Staff Panel III, pp. 4, 41-42; Long, Tr. 2967, Staff Proposed Findings, Paragraph 101, pp. 56-57. Second, the hypothetical condition opposed by the Staff is not the condition we impose. The form of condition opposed by the Staff, requiring specific improvements in staffing, manpower requirements and training, would be very difficult to draft and to enforce considering the fact that management and training must be fashioned for a specific plant and staffing needs will vary over time. On the other hand if the condition requiring improvement were not made specific, its value would be doubtful.

201. Our condition provides simply that whatever demonstration CP&L

²⁷Staff includes Mr. Cantrell among those opposing a condition upon the permit. The condition we impose is exactly the remedy recommended by Mr. Cantrell. Cantrell, Tr. 3427.

ordinarily must make under Section 50.34(b) (6) and (7) to satisfy NRR also must be made in a public adjudicative hearing to satisfy a presiding officer and the appellate fora of the Commission. The imposition of this condition does not reflect a lack of confidence in the NRC Staff, because even in a later hearing on management capability and technical qualifications, a presiding officer will be required to depend upon the Staff's evidence and analyses. We need not defend our conclusion by asserting that a determination of capability by an adjudicative hearing is more reliable than an administrative determination by the Staff. The policy of the Commission to provide a public airing of important safety considerations is well established. A mandatory hearing during the operating license is practical and is called for. Sufficient questions concerning CP&L's management capability to operate Shearon Harris were raised during this reopened construction permit hearing to require reasonable minds to inquire further. The best time and opportunity for Applicant to satisfy the burden thus placed upon it will be during the operating licensee proceeding.

202. The Board concludes that a hearing on the application for an operating license for Shearon Harris Nuclear Power Plant on the issue of whether the Applicant has the management capability and technical qualifications to engage in the activities to be authorized by the operating license will be required in the public interest.

IV. ORDER

203. Based upon the Board's findings and conclusions, and pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's regulations, it is ordered that the construction permit for the Shearon Harris Nuclear Power Plant shall, in addition to the conditions imposed by the initial decision authorizing said permit and set forth at 7 NRC 144-146, be further conditioned as follows:

(ix) At an appropriate time during the review of the application for the operating license of the Shearon Harris Nuclear Power Plant, the Staff shall implement the necessary actions to enable the Secretary to issue a notice of hearing on said application to be published in the *Federal Register* required under 10 CFR 2.104. In addition to the other requirements of Section 2.104, the notice of hearing shall state that the presiding officer will consider (in addition to any other matter which may be in controversy) whether the Applicant has the management capability and is technically qualified to engage in the activities to be authorized by the operating license in accordance with the regulations of 10 CFR Chapter 1.

204. IT IS FURTHER ORDERED, in accordance with 10 CFR 2.760, 2.762, 2.785, and 2.786, that this Supplemental Initial Decision shall be effective immediately and shall constitute the final action of the Commission thirty (30) days after the date of issuance hereof, subject to any review pursuant to the above cited rules. Exceptions to this Supplemental Initial Decision may be filed by any party within ten (10) days after service of this Supplemental Initial Decision. Within thirty (30) days thereafter (forty (40) days in the case of the Staff) any party filing such exceptions shall file a brief in support thereof. Within thirty (30) days of the filing and service of the brief of the appellant (forty (40) days in the case of the Staff), any other party may file a brief in support of, or in opposition to, the exceptions.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Dr. J. Venn Leeds, Member

Glenn O. Bright, Member

Ivan W. Smith, Chairman

Dated at Bethesda, Maryland
this 13th day of July, 1979.

N.B. A memorandum discussing the adjudicative process in this proceeding has been served with this decision but is not a part of it.

LIST OF EXHIBITS

NRC STAFF

- Staff Exhibit 12 — Computer Printout Summary of Inspections at Robinson, Brunswick, and Shearon Harris Facilities, July 1975 through August 1978. *Received in evidence Supplemental Initial Decision, p. 11.*
- Staff Exhibit 13 — Computer Printout Summary of Licensee Event Reports at Robinson and Brunswick Facilities, 1969 to October 1, 1978. *Received in evidence Supplemental Initial Decision, p. 11.*
- Staff Exhibit 14 — NRC - CP&L correspondence regarding the civil penalty assessed in 1975. *Received in evidence Supplemental Initial Decision, p. 11.*
- Staff Exhibit 15 — Letter from R. C. Lewis, Acting Chief, Reactor Operations and Nuclear Support Branch, Region II, NRC I&E, to J. A. Jones, Executive Vice President, CP&L, dated February 21, 1979 forwarding Brunswick Inspection Report 50-324/79-2, 50-325/79-2, *received in evidence Tr. 2631.*
- Staff Exhibit 16 — Chronology of operations inspectionsbBrunswick Units 1 and 2, 1976-1978. *Received in evidence Supplemental Initial Decision, p. 11.*

NRC STAFF

- Staff Exhibit 17 — Responses to a memorandum to NRC I&E Region II Reactor Construction & Engineering Support Branch Staff from C. E. Murphy, Branch Chief, regarding inspection findings at Shearon Harris nuclear plant and other CP&L facilities, *received in evidence Tr. 2538.*

- Staff Exhibit 18 — Attachments to prefiled testimony of Howard Wilber, *received in evidence Tr. 2841.*
- Staff Exhibit 19 — Letter from H. R. Banks, CP&L Manager Nuclear Generation, to J. P. O'Reilly, Director NRC I&E Region II, dated September 20, 1978, regarding CP&L's response to an infraction identified in I&E Inspection Report 50-324/78-17, 50-325/78-17. *Received in evidence Supplemental Initial Decision, p. 11.*
- Staff Exhibit 20 — Letter from B. J. Furr, CP&L Manager - Generation Department, to J. P. O'Reilly, Director NRC I&E Region II, dated August 18, 1978, regarding CP&L's response to an infraction identified in I&E Inspection Report 50-324/78-15, 50-325/78-15. *Received in evidence Supplemental Initial Decision, p. 11.*

NRC STAFF

- Staff Exhibit 21 — Letter from F. J. Long, Chief, Reactor Operations and Nuclear Support Branch, NRC I&E Region II, to J. A. Jones, Executive Vice President, CP&L, dated August 5, 1977, enclosing I&E Inspection Report 50-324/77-13, 50-325/77-13 *received in evidence Tr. 3446.*

BOARD

- Board Exhibit 8 — Nuclear Regulatory Commission, *Board Notification - Licensee Regulatory Performance Evaluation* (February 1979). *Received in evidence Supplemental Initial Decision, p. 35.*
- Board Exhibit 9 — NRC Office of Inspector & Auditor, *Inquiry into the Alleged Omission of a Line Inspector's Views from the Shearon Harris Construction Permit Hearing - Volume*

I Summary Report (November 1978), received in evidence Tr. 2452.

- Board Exhibit 10 — NRC Office of Inspector & Auditor, *Inquiry into the Alleged Omission of a Line Inspector's Views from the Shearon Harris Construction Permit Hearing - Volume II Enclosures (November 1978), received in evidence Tr. 2452.*

BOARD

- Board Exhibit 11 — NRC Office of Inspector & Auditor, *Inquiry into the Alleged Omission of a Line Inspector's Views from the Shearon Harris Construction Permit Hearing - Volume III Interviews (November 1978), received in evidence Tr. 2452.*
- Board Exhibit 12 — American National Standard "Selection and Training of Nuclear Power Plant Personnel" (ANSI N18.1 - 1971), *received in evidence Tr. 2961; 3309.*

APPLICANT

- Applicant Exhibit GG — CP&L, "Operations Groups Organization" (January 1979) (Operations Group Organizational Manual), *received in evidence Tr. 3494.*
- Applicant Exhibit HH — CP&L, Generation Department, "Technical and Craft Training Program" (revised through January 11, 1979), *received in evidence Tr. 3502.*
- Applicant Exhibit II — CP&L Brunswick Plant Incident Report No. 75-50 dated October 3, 1975, *received in evidence Tr. 3423.*
- Applicant Exhibit JJ — Three CP&L Brunswick Plant Licensee Event Reports, BSEP AO-106, BSEP AO-107, BSEP AO-108 (all dated October 31, 1975) *received in evidence Tr. 3424.*

APPLICANT

- Applicant Exhibit KK — General Electric field work order for Brunswick Unit 2 (Reactor Core Isolation Cooling System Turbine) dated October 2, 1975, *received in evidence Tr. 3425.*
- Applicant Exhibit LL — Letter from J. P. O'Reilly, Director, NRC I&E, Region II, to J. A. Jones, Executive Vice President, CP&L, dated December 27, 1977, *received in evidence Tr. 3523.*
- Applicant Exhibit MM — CP&L Corporate Quality Assurance Policy Statement dated January 20, 1977, *received in evidence Tr. 3538.*
- Applicant Exhibit NN — CP&L Corporate Nuclear Safety Policy Statement dated November 17, 1977, *received in evidence Tr. 3538.*
- Applicant Exhibit OO — CP&L Corporate Health Physics Policy Statement dated June 17, 1977, *received in evidence Tr. 3538.*
- Applicant Exhibit PP — Affidavit of J. A. Jones dated June 7, 1979 with figures A and B. *Received in evidence in Supplemental Initial Decision.*

ATTACHMENT

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

In the Matter of

**CAROLINA POWER AND
LIGHT COMPANY**

**(Shearon Harris Nuclear Power
Plant, Units 1, 2, 3, and 4)**

**Docket Nos. 50-400
50-401
50-402
50-403**

July 13, 1979

MEMORANDUM

When we wrote to the Commission on August 30, 1978 concerning the omission of some of Mr. Cantrell's views from the Staff's testimony, we stated that the incident raised questions about the integrity of the NRC adjudicative process. We suggested that this might be explained by insufficient candor or negligence on the part of the Staff witnesses, or it might be the result of an "illconceived" policy to present Staff consensus in the form of sworn personal testimony. The Commission authorized this Board to hear only the remanded substantive issue of management capability (which we decide today) in its Order of September 5, 1977. 8 NRC 293-94. Nevertheless we believe that it is our responsibility to go beyond the remanded issue to report on our observations concerning the hearing process and the presentation of evidence by the NRC Staff. Having raised questions of candor and competence, it would be unfair for the Board to allow the questions to remain unresolved. Moreover, the reopened hearing provided an unusual opportunity to observe the practice followed by the Staff in the preparation and presentation of evidence and its handling of differing professional opinions.

The Staff testimony challenged by Mr. Cantrell and by the Board was that of a Panel of I&E Region II witnesses, Virgil L. Brownlee and Hugh C. Dance. Following Tr. 2076.¹ Mr. Brownlee was a construction inspector and Mr. Dance was a supervising operations inspector. None of Mr. Brownlee's contribution to the panel testimony is controversial. The only

¹Board Exhibit 10, pp. 11-39. The three volume report of the Office of Inspector and Auditor on this matter was received into evidence as Board Exhibits 9 through 11. Board Exhibit 10, which is Volume II of the report, contains all of the documents pertinent to the background of this controversy.

significance to his participation is that it demonstrates that under the panel method and staff consensus approach to testimony, the individual witness sponsoring the specifics of the panel testimony may not be identified or accountable.

To the extent that any responsibility existed for presenting Mr. Cantrell's views to the Board, that responsibility rested with Mr. Dance, his supervisor. We inquired thoroughly concerning his reasons for omitting some of the information prepared by Mr. Cantrell. Although we disagree with Mr. Dance's decision to omit the Cantrell information, we are satisfied with his explanation.

The Board's question to which his testimony responded was not routine. He had to make judgments about the nature and scope of the testimony. In preparing the testimony it would have been easier to include all of the pertinent information; he had no incentive to exclude information. Tr. 2476-78, 2484. He did not include Mr. Cantrell's comment that the excessive overtime problem at Brunswick continued over a period of years because he did not believe then that there was adequate factual support for the statement. Now, however, he believes the evidence does support the statement and the subject should have been included. Tr. 3058-62. He did not believe Mr. Cantrell's comment that the implications of Brunswick's personnel technical specifications not being met was important enough to include in his testimony. Tr. 3063-72. Mr. Dance believes that his testimony adequately set forth Mr. Cantrell's allegation that CP&L had not committed the required manpower and financial resources to identify and timely to correct plant problems. Tr. 3078-79.

When he prepared his testimony in September 1977, Mr. Dance did not have the benefit of any official policy or broadly recognized practice to include differing opinions in hearing testimony. Long, Tr. 2480-81, 2995-98 Board Exhibit 11, pp. 1-2, 3, 24, 84, 85-86, 108, 112, 119. Even among senior experienced NRC Staff officials, opinions vary as to whether Mr. Dance should have included Mr. Cantrell's views. Board Exhibit 11 - *Compare* Moseley, pp. 1-2, Paulus, p. 3; *with* Long, pp. 86-87; Murphy, p. 88.²

We believe that Mr. Dance was motivated by conservatism. He excluded what he then perceived to be unfounded allegations and there was no obligation under policy or practice to present views different than those of Staff management. He did not attempt to mislead. There was no failure of candor. We found no indication of negligence. We continue to disagree with his handling of the original testimony but this is partly based upon an

²Under more recent practice it is unlikely that Mr. Cantrell's views would be omitted. Board Exhibit 11, Moseley, p. 1; Paulus, p. 4.

expanded and detailed factual record and partly because our judgment simply differs from his.

In its report to the Commission, I&A concluded that the only significant information not presented to the Board was Mr. Cantrell's conclusion that a condition should be placed upon the Shearon Harris permit. Board Exhibit 9, p. 15. We strongly disagree. Mr. Cantrell's basic point was that even though CP&L was meeting minimum technical requirements in staffing Brunswick, management turnover was so high and the plant staff was so short-handed and inexperienced that the spirit of the personnel technical specifications was not being met, and that this condition existed for years, not merely weeks and months, after the startup of Brunswick.³ Whether true or not, the allegation is gravely significant and needed to be pursued. As it turns out, the allegation has substantial record support.⁴

The I&A report also concludes that Mr. Dance's testimony contained sufficient information for the Board to pursue the matter of CP&L's management capability in more detail. Board Exhibit 9, p. 15. This was also the view of the Appeal Board in ALAB-490. 8 NRC 234, 242-244 (1978). It is not for us to defend our action in the hearing. We were sensitive to the response to our own question, but, the fact is, we were not alerted to inquire further. We raise the point only to caution that a higher standard of evidence is required. Hearing boards should indeed remain alert, but the evidence should not require the analysis, scrutiny, and suspicion implicit in the statement that further inquiry into the matter by this Board was indicated. This reopened proceeding has consumed hundreds of hours of the Board members' time. Yet the issue is only one of the many issues that a construction permit proceeding encompasses. As the Atomic Safety and Licensing Board Panel is now constituted, considering the case load, it would not be possible to consider every important issue as thoroughly as we considered this one if adjudication is to proceed with reasonable dispatch.

As thoroughly as we studied this matter, we were never free from dependence upon the Staff. We reported to the Commission in our letter of August 30, 1978 that hearing boards are authorized by regulation to depend upon the Staff testimony in uncontested matters, and, as a practical matter, without resources of our own, we are helpless without reliable Staff evidence.⁵ Our point is that Staff evidence must do more than suggest that potential problems may exist. The evidence must not only present facts; it must clearly explain the facts.

³See Board Exhibit 10, pp. 7-8 for our summary of the omitted information.

⁴Supplemental Initial Decision, Paragraphs 135-149, 152-163; pp. 82-90, 92-100.

⁵Board Exhibit 10, pp. 9-10, citing Appendix A, Section V, (f) (1) and (2), 10 CFR Part 2.

The Staff's presentation in the reopened hearing is, in our opinion, a model for licensing hearings. The prefiled written testimony, in question and answer form, permitted a discrete identification of the facts. The explanations were non-technical and understandable. Differing Staff opinions were identified and freely made available. We recommend that these procedures be continued. With the cooperation of the Staff, the Board began the practice of ascertaining of each witness in a panel which portions of the prefiled testimony that witness personally sponsored. This information should be set forth in prefiled testimony.

We are troubled by one aspect of the Staff practice in presenting evidence that warrants some comment. Mr. Long of I&E, who prepares testimony for licensing hearings, testified that when the decision was made to support an application for a permit, the testimony would lean toward that support. Adverse information rarely if ever appeared in the testimony without accompanying resolution or identified corrective action. The testimony would work around problems by supporting an approach other than highlighting opposing views. Mr. Long rarely tended to discuss problems excessively—only those problems to which he saw no immediate resolution. While both favorable and unfavorable facts would be included, the emphasis would be to support the permit. Long, Tr. 2480-81; 2994-98.

We recognize that most differences between the Staff and an applicant are resolved before the hearing. If an application meets the Staff's requirements, the testimony properly should reflect that fact, but the Staff should not "support" an application. However, we are not seizing upon the word "support" in Mr. Long's testimony. Our concern is that the actual practice may be for the Staff to serve or to appear to serve as an advocate for the application.

We recommend that a determination be made as to whether we have correctly interpreted Mr. Long's testimony, and whether it reflects Staff practice. If so, we recommend that the practice be modified to require a correctly balanced, and accurate factual presentation.

Dr. J. Venn Leeds, Member

Glenn O. Bright, Member

Ivan W. Smith, Chairman

Dated at Bethesda, Maryland
this 13th day of July, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. George C. Anderson, Member
Dr. M. Stanley Livingston, Member

In the Matter of

**CONSUMERS POWER
COMPANY**

Docket No. 50-255 SP

(Palisades Nuclear Plant)

July 23, 1979

The Licensing Board grants petition for leave to intervene and orders a hearing to determine whether the licensee should be issued an amendment to its Provisional Operating License to permit the removal and replacement of the plant's steam generators. The Board denies petitioner's request for financial assistance.

ATOMIC ENERGY ACT: STANDING TO INTERVENE

To establish standing to intervene as a matter of right, a petitioner must show (1) injury in fact, and (2) that the injury is arguably within the zone of interest protected by the relevant statutes. *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 613-14 (1976).

ATOMIC ENERGY ACT: STANDING TO INTERVENE (INJURY IN FACT)

In order to meet the injury-in-fact test, an organization must demonstrate that either its organizational interest or the individual interest of at least one of its members may be affected. Where standing is in a representative capacity, the organization must identify at least one member whose interest may be affected. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377. The organization must also show that, either directly or presumptively, the identified

member has authorized the organization to represent his or her interest. *Id.* at 377.

ATOMIC ENERGY ACT: STANDING TO INTERVENE

An organization represented by one of its members must demonstrate that it has authorized that member to represent its interest. *Duke Power Company* (Oconee-McGuire), ALAB-582, 9 NRC 146, 151-52 (1979).

RULES OF PRACTICE: STANDING TO INTERVENE

It is well-settled that residence as far away as 40 or 50 miles from a reactor may provide a foundation for standing. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-107, 6 AEC 188, 193 (1973), *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 n. 4 (1977).

RULES OF PRACTICE: STANDING TO INTERVENE

There is a presumption of standing where an organization raises safety issues on behalf of a member or members residing in close proximity to a facility.

RULES OF PRACTICE: STANDING TO INTERVENE

It has never been necessary to establish as a precondition to intervention, that a petitioner's concerns are well-founded in fact.

RULES OF PRACTICE: STANDING TO INTERVENE

The magnitude of a petitioner's asserted injury is not controlling when determining whether petitioner has standing to intervene. *United States v. Students Challenging Regulatory Agency Procedures* (SCRAP), 412 U.S. 669, 689 n. 14 (1973).

RULES OF PRACTICE: STANDING TO INTERVENE

A statement of asserted injury which is insufficient to found a valid contention may well be adequate to provide a basis for standing.

RULES OF PRACTICE: STANDING TO INTERVENE

Failure to produce an environmental impact statement in circumstances where one is required has been held to constitute injury—indeed, irreparable injury. *Jones v. D.C. Redevelopment Land Agency*, 499 F. 2d 502, 512 (D.C. Cir. 1974).

ATOMIC ENERGY ACT: STANDING TO INTERVENE (ZONE OF INTEREST)

The economic concerns of ratepayers are not arguably within the zones of interest protected by the Atomic Energy Act or NEPA. The economic interests of ratepayers may *not* serve as a basis for standing.

RULES OF PRACTICE: STANDING TO INTERVENE

In order to be admitted as an intervenor, a petitioner must set forth at least one valid contention. 10 CFR 2.714 (b); *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-107, 6 AEC 188, 194 (1973). The bases for each contention must be set forth with reasonable specificity.

RULES OF PRACTICE: STANDING TO INTERVENE

In evaluating the adequacy of a petitioner's contentions a Board may take into account the circumstance that the petitioner is not represented by counsel.

LICENSING BOARD: RESOLUTION OF ISSUES

A Licensing Board has an obligation to resolve on their merits issues of potential significance to the public health and safety and the environment which are presented to the Board, notwithstanding certain technical deficiencies in their statements.

LICENSING BOARD: RESOLUTION OF ISSUES

A Licensing Board may not at the prehearing stage reject a relevant contention because it lacks merit. Such resolution may occur only after an evidentiary hearing or, where appropriate, summary disposition pursuant to 10 CFR 2.749.

NEPA: NEGATIVE DECLARATION

Although the determination whether to issue an impact statement falls initially upon the staff, that determination may be made an issue in an adjudicatory proceeding.

FWPCA: EPA AUTHORITY

Radioactive effluents discharged by a nuclear plant are not "pollutants" within the purview of the FWPCA. *Train v. Colorado Public Interest Research Group*, 426 U.S. 1 (1976).

FWPCA: EPA AUTHORITY

The responsibility for particular water quality matters under the FWPCA no longer resides with the Commission but has been allocated to EPA and the states.

FWPCA: SECTION 402 PERMITS

NRC licensing is in no way dependent upon the existence of a 402 permit. *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 58 (1974).

RULES OF PRACTICE: FINANCIAL ASSISTANCE TO PARTICIPANTS

The Commission's policy precludes the granting of financial assistance to intervenors for fees for attorneys, witnesses, and consultants in license proceedings.

SPECIAL PREHEARING CONFERENCE ORDER

This proceeding concerns the application of Consumers Power Company (hereinafter Licensee) for an amendment to its Provisional Operating License No. DPR-20 for the Palisades Nuclear Plant, a pressurized water reactor located in Covert Township, Van Buren County, Michigan. The Licensee is seeking permission to remove and replace the plant's steam generators. In response to the January 29, 1979 Notice of Opportunity for Hearing (44 Fed. Reg. 5732), a timely petition for leave to intervene was filed by the Great Lakes Energy Alliance (GLEA).

The Licensee and NRC Staff filed responses to the petition, opposing

GLEA's intervention. They each claimed that GLEA had not demonstrated standing to intervene and that it had not proffered a viable contention. In our Memorandum and Order of March 30, 1979, we alluded to certain deficiencies in the GLEA petition but, in accord with 10 CFR 2.714(a) (3) and 2.714(b), we permitted the Petitioner to amend its petition and the other parties to respond. GLEA filed a supplemental petition on April 20, 1979. The Licensee filed a response; the NRC Staff elected not to do so. We scheduled a special prehearing conference to consider the petition. See 44 Fed. Reg. 23953 (April 23, 1979).

At the conference on May 9, 1979, GLEA, the Licensee and the NRC Staff all appeared. The Petitioner was not represented by counsel but participated through one of its members. GLEA provided considerable additional information concerning its standing to participate in the proceeding but, after considerable questioning by the Board, it became apparent that the lay representative had little idea of the requisites for a valid contention (Tr. 70-74, 78-79). NRC rules mandate at least one valid contention as a condition precedent to intervention (see 10 CFR 2.714 (b)). Therefore, during the course of the conference, the Petitioner sought an opportunity to reformulate its contentions, and we permitted it to do so. (Tr. 80-85, 94). We discussed the amended contentions with the parties and permitted the Licensee and NRC Staff to respond in writing by May 30, 1979 (Tr. 138). Both did so. And both reiterated their previously expressed position that none of the contentions comports with the requirements of the NRC Rules of Practice. The Licensee also took that opportunity to expand upon its earlier statements on standing, repeating its view that GLEA had failed to demonstrate that it has standing of right and that GLEA should not be granted discretionary standing.

For reasons hereinafter set forth, we conclude that GLEA has standing of right, that it has advanced three valid contentions and, accordingly, that it should be admitted as an intervenor to this proceeding.

I

1. The first hurdle which a petitioner must pass in order to be admitted as an intervenor is a demonstration of its standing to participate. This requirement stems from the terms of Section 189a. of the Atomic Energy Act, 42 U.S.C. 2239(a), which provides a hearing only to those "whose interest may be affected" by a proceeding.

The Commission and Appeal Board have established that, in determining whether a petitioner has standing and may participate as a matter of right, the governing test is the one utilized in the Federal courts: the petitioner must demonstrate "that the outcome of the proceeding threatens one (or more) of its interests arguably protected by the statute being administered." *Houston*

Lighting and Power Company (South Texas Project, Units 1 and 2), ALAB-549, 9 NRC 644, 646 (May 18, 1979), relying on *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 613-14 (1976) and *Edlow International Company*, CLI-76-6, 3 NRC 563, 569-70 (1976). Stated another way, to establish standing a petitioner must show (1) injury in fact, and (2) that the injury is arguably within the zone of interest protected by the relevant statute (s) — in this proceeding, the Atomic Energy Act and the National Environmental Policy Act (NEPA). *Pebble Springs, supra*, 4 NRC at 613.

An organization such as GLEA may meet the injury-in-fact test in one of two ways. It may demonstrate an effect either upon its organizational interest or upon the individual interest of at least one member. GLEA has chosen the latter course. In so electing to assert standing in a representative capacity, GLEA must identify at least one member whose interest may be affected. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 390-395 (April 4, 1979). The organization must also show that, either directly or presumptively, the identified member has authorized GLEA to represent his or her interest. *Id.* at 395-397; *Allied-General Nuclear Services* (Barnwell Fuel Receiving and Storage Station), ALAB-328, 3 NRC 420, 422-23 (1976). Finally, where (as here) an organization is represented by one of its members, the group must demonstrate that the member has been authorized to do so. *Duke Power Company* (Oconee-McGuire), ALAB-528, 9 NRC 146, 151-52 (1979); *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), LBP-79-10, 9 NRC 439, 444, (April 3, 1979) affirmed, ALAB-549, *supra*.

2. As we pointed out in our Memorandum and Order of March 30, 1979, GLEA's statement of interest appearing in its February 27, 1979 petition was "fatally defective." The group supplied a general description of its organization and purposes. It alluded to members of constituent groups who reside "in close proximity" to the plant and stated that the groups have a "special concern in regard to the environmental and social impact of the replacement of defective steam generators." It also referred to certain groups which are ratepayers of the Licensee and who allegedly have an economic interest as well in the project. But it failed to identify any members or supply any authorization for GLEA to represent them. The person submitting the petition identified herself only as a "duly authorized spokesperson" who was "authorized to sign" the petition on behalf of GLEA.

Glea's April 20, 1979, supplemental petition (which Commission rules permit as a matter of right) added one crucial element to the statement of interest: the names and addresses of seven members residing "in the vicinity" of the plant. It also referred to steam generator degradation as a serious safety problem and stated that the named individuals are "deeply concerned"

about safety problems at the reactor. Finally, the GLEA member who signed both the original and supplemental petitions identified herself as a Vice President of GLEA. In response, the Licensee continued to find inadequate GLEA's statement of interest, because (1) it did not demonstrate that the named persons have interests within the zones of interest protected by the Atomic Energy Act or NEPA; (2) it did not indicate that the members' interests may be affected by the results of the proceeding; (3) it failed to show that a member has authorized GLEA to represent his or her interests (both in terms of the members' authorization of their constituent groups to represent them and the groups' authorization of GLEA to represent their interests); and (4) the authorization of GLEA's representative to represent the group and the constituent groups was not adequate.

At the prehearing conference, GLEA provided further information on the last two of these subjects. It turned out that GLEA has both individual members and constituent group members (Tr. 10). Four GLEA members who were present at the conference indicated that they desired GLEA to represent their interests (Tr. 7-8). Each of those four persons was among the seven who had been listed in GLEA's April 20 petition. In addition, GLEA's representative read into the record a letter from another GLEA member who resides approximately two miles from the plant and who sent the organization a contribution to assist in its endeavor to participate in this proceeding (Tr. 9-10). Furthermore, the GLEA representative stated that, as Vice President, she was authorized to appoint herself the organization's representative in the proceeding and, in any event, GLEA had voted at its January meeting to designate her as its spokesperson (Tr. 11). With this additional information, it is clear to us that GLEA has been adequately authorized to represent certain of its members' interests and its representative has been satisfactorily designated to act in that capacity. Indeed, the Licensee no longer appears to question these elements of GLEA's standing (see May 30, 1979 brief and Tr. 12-13).

Nor does the Licensee seriously contest that GLEA's named members possess interests which may confer standing on the organization. All of those members reside within 50 miles of the plant (Tr. 12) — indeed, their residences apparently are much closer, from approximately two to 15 miles from the plant. It is well settled that residence as far away as 40 or 50 miles from a reactor may provide a foundation for standing. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-107, 6 AEC 188, 193 (1973) (40 miles); *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 n. 4 (1977) (50 miles). Where, as here, the residences in question are located within 15 miles of the plant, it perforce follows that the requisite "interest" exists. *Virginia Electric and Power Company* (North Anna Station, Units

1 and 2), ALAB-522, 9 NRC 54, 56 (1979); *South Texas*, ALAB-549, *supra*, 9 NRC at 646, fn. 8.

Although the Licensee does not seriously question that GLEA may have an interest in the proceeding, it claims that there is yet another test which must be satisfied: a requirement that the petitioner delineate *how* its interest may be affected by the proceeding. The Licensee recognizes that in *North Anna*, ALAB-522, *supra*, the Appeal Board stated that “close proximity has always been deemed to be enough, standing alone, to establish the requisite interest.” 9 NRC at 56. But it claims that the authority upon which the Appeal Board relied in ALAB-522 founded standing not only upon proximity but also upon the petitioners’ “asserted concern that their physical and economic well-being might be adversely affected by the operation of the facility.” *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 224 (1974). According to the Licensee, such asserted concerns also were present in ALAB-522, but they are not expressed here with adequate particularity.

We disagree. To begin with, we would tend to read the Appeal Board decision in *South Texas* (ALAB-549), *supra*, as holding that there is a presumption of standing where an organization raises safety issues on behalf of a member or members residing in close proximity to a facility. Beyond that, it is clear to us that GLEA has set forth concerns with respect to health-and-safety and environmental aspects of the proposal under review. These concerns appear both in GLEA’s statements on standing and its contentions—both of which may be taken into account in ascertaining whether GLEA has satisfactorily complied with the interest requirements. We have earlier alluded to GLEA’s statements with respect to standing (p. 113, *supra*). In its contentions, as expressed both in its original petition and in its most recently revised version, GLEA refers, *inter alia*, to the somatic and genetic effects of radiation on both workers and the general public, the environmental impacts of construction, and the asserted lack of an environmental impact statement. Some of these concerns may not prove to be valid; but it has never been necessary “to establish, as a precondition to intervention, that [a petitioner’s] concerns are well-founded in fact.” *North Anna*, ALAB-522, *supra*, 9 NRC at 56. Some of GLEA’s concerns may also prove to be of little magnitude; but the magnitude of asserted harm is also not controlling. *United States v. Students Challenging Regulatory Agency Procedures* (SCRAP), 412 U.S. 669, 689 fn. 14 (1973). In fact, it appears to us that a statement of asserted injury which is insufficient to found a valid contention may well be adequate to provide a basis for standing.

Be that as it may, GLEA’s claim that an environmental impact statement should be issued in itself constitutes a showing how its members’ interests may be affected. Failure to produce an environmental impact statement in

circumstances where one is required has been held to constitute injury—indeed, irreparable injury. *Jones v. D. C. Redevelopment Land Agency*, 499 F.2d 502, 512 (D. C. Cir. 1974); *Sherr v. Volpe*, 466 F.2d 1027, 1034 (7th Cir. 1972); *Environmental Defense Fund v. Tennessee Valley Authority*, 468 F.2d 164, 1184 (6th Cir. 1972); *Izaak Walton League v. Schlesinger*, 337 F.Supp. 287, 295 (D.D.C. 1971); cf. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 633 (1977). Persons residing within close proximity to the locus of a proposed action, such as GLEA's members, constitute the very class which an impact statement is intended to benefit.

The Licensee relies on several decisions which appear to stress the specificity by which a petitioner's statement of interest is articulated and which conclude that a sufficient demonstration of standing had not been proffered. Those rulings are all distinguishable from the present factual situation and hence are not controlling. *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-536, 9 NRC 402 (April 5, 1979) involved the tardy claim of an organization to participate as *amicus curiae* on an issue which had been raised by another party. The petition recited the names of certain members residing within 40 miles of the site but it apparently made no claim that (or showing how) the individual interests of the members would be affected; rather, the petition was founded upon the *organization's* asserted concern with, and unique qualifications to address, a particular issue. Standing was found lacking on the authority of *Sierra Club v. Morton*, 405 U.S. 727 (1972). The same conclusion was reached for essentially the same reason in *Allied-General Nuclear Services* (Barnwell Fuel Receiving and Storage Station), ALAB-328, 3 NRC 420 (1976). There, in addition, the organization was essentially interested in civil liberties matters. Further specificity as to how an individual member's interests would be affected was clearly warranted. Finally, the portion of the *Allens Creek* decision relied on by the Licensee concerns only the requirement that an organization seeking intervention in a representational capacity identify particular members whose interests might be affected—a course of action which, unlike here, the organization in question there refused to follow. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1). ALAB-535, 9 NRC 377 (April 4, 1979). That decision has no bearing upon the question before us.

We recognize that GLEA's statement of interest might have been more precisely drafted if it had been the product of an attorney skilled in the conduct of administrative proceedings rather than by a lay member of the organization. We would be reluctant to deny intervention on that basis where, as here, it appears that the organization has indeed identified interests which may be affected by a proceeding. As the Appeal Board has stated,

It is neither Congressional nor Commission policy to exclude parties because the niceties of pleading were imperfectly observed. Sounder practice is to decide issues on their merits, not to avoid them on technicalities.

South Texas, ALAB-549, *supra*, 9 NRC at 650.

In short, we conclude that GLEA has adequately set forth how certain of its members' interests may be affected by the safety and environmental impacts of the proposal under review¹ and, accordingly, that GLEA has demonstrated its standing to participate in this proceeding.

II.

The second hurdle which a petitioner must pass in order to be admitted as an intervenor is the setting forth of at least one valid contention. 10 CFR 2.714(b); *Prairie Island*, ALAB-107, *supra*, 6 AEC at 194. The bases for each contention must be set forth with reasonable specificity. 10 CFR 2.714(b). In evaluating contentions, however, we may take into account the circumstance that the petitioner is not represented by counsel. *Public Service Electric and Gas Company* (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973). We also are aware of our obligation to resolve on their merits issues of potential significance to the public health and safety and the environment which are presented to us, notwithstanding certain technical deficiencies in their statements. *South Texas*, ALAB-549, *supra*, 9 NRC at 650. Furthermore, we may not at this stage reject a relevant contention because it lacks merit. Such resolution may occur only after an evidentiary hearing or, where appropriate, summary disposition pursuant to 10 CFR 2.749.

With that in mind, we have reviewed the contentions appearing in GLEA's initial petition, and the amended contentions² presented to us at the prehearing conference. We will treat each of them here.

1. One of the topics of greatest concern to GLEA is the total radiation

¹The economic concerns of its members set forth by GLEA are those of ratepayers and are not within the zones of interest arguably sought to be protected by the Atomic Energy Act or NEPA. Those concerns may not serve as a basis for standing, and we accordingly have disregarded them in reaching our conclusion. *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 613-14 (1976); *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1421 (1977).

²In referring to GLEA's amended contentions, unless otherwise noted, we will utilize the numbering and wording appearing in the retyped version circulated by the NRC Staff along with its "NRC Staff Further Response to Contentions Submitted at Prehearing Conference," dated May 29, 1979.

exposure which will accrue from the project, primarily to workers but to some extent to the public generally. This exposure is the foundation for two of GLEA's amended contentions—numbers 1 and 7—but it appeared first in GLEA's initial petition. There, the first contention stated that the replacement of the generators “will require exposing workmen to hazardous levels of radiation.” The second contention of the initial petition sought to raise an issue concerning the “environmental and safety review procedure” which will be used “to protect the public during the repair operations.”

At the prehearing conference, GLEA supplied further explanation of these contentions. When asked to provide additional specific information about the safety hazards, GLEA's spokesperson stated that the steam generators are “highly radioactive” and that “there will be people in this area who are workers at the plant . . . that will be exposed to *higher doses of radiation than is normal in an operating plant*” (Tr. 38, emphasis supplied). This exposure asserted would “impair” the workers' health and produce “genetic damage” (Tr. 38.). Further, “the steam generators which are very radioactive will have to be removed from the reactor and there is a chance of airborne emissions” which could affect “people living very close to that reactor” (Tr. 39). In addition, the only way for NRC radiation standards to be satisfied is assertedly “by having many workers *burnt out*, as it were,” inasmuch as “they will be in much higher levels of radiation exposure than normal plant operation” (Tr. 58, emphasis supplied).

As indicated earlier, at the prehearing conference, we gave GLEA the opportunity it requested to reformulate its contentions. We took this action because of the GLEA representative's obvious lack of familiarity with the requirements for a valid contention, when viewed against the background of the potentially serious safety and environmental questions which GLEA was apparently attempting to enunciate. The radiation exposure questions evolved into two amended contentions (numbers 1 and 7). For purposes of our discussion, we here set them forth in full:

1. Total man rem exposure according to the applicants will be 7342 man rem. When any Federal agency contemplates an action having this substantial human impact, there should be an Environmental Impact Statement (figure 4, 3-3) to consider both the [somatic] and genetic effects of this possibility.
7. The applicant will violate NRC regulations requiring occupational exposures to be kept as low as possible.

The basis of Contention 7 was said to be the same as for Contention 1—*i.e.*, the alleged total man-rem exposure of 7342 man-rem (Tr. 101, 123-126).

We had some trouble locating the source of the alleged 7342 man-rem exposure. It turned out that the source was Table 4.3.2 of the Licensee's Steam Generator Repair Report (SGRR) (Tr. 98, 103, 125). GLEA claims to have added up the total exposures appearing in Table 4.3.2 for various segments of the repair project (Tr. 97-98). Although we still have difficulty in ascertaining how the exact exposure of 7342 man-rem was reached, we note that Table 4.3.2 does indicate that, under the Licensee's first-mentioned replacement methodology, the resulting exposure is said to be 4993 man-rem (of which 4070 man-rem results from one work area alone). For purposes of evaluating GLEA's contentions, we will utilize the latter numbers which actually appear in the source cited.

This estimated radiation exposure to workers of about 5000 man-rem indicates that a large number of workers would be required to be employed in the project to keep the exposures to individual workers below the maximum permissible whole body dose of 1.25 rem per calendar quarter. 10 CFR 20.101(a).³ In addition, Commission regulations provide that licensees shall "make every reasonable effort to maintain radiation exposures . . . as low as is reasonably achievable" (ALARA). 10 CFR 20.1(c). The Licensee here claims that personnel exposure will be maintained in accordance with the ALARA requirement throughout the repair program, but to do so would likely still further increase the number of workers required to be used. In our opinion, the exposure of large number of workers to significant levels of radiation provides ample foundation for the Petitioner's contention that the Licensee's proposal would expose such a large number of workers to radiation approaching the maximum permissible dosage that it will produce a significant impact on the general public.⁴ Such exposure further provides adequate foundation for GLEA's claim that the proposal "violates" the ALARA requirements.

GLEA's amended Contention 1 claims that the referenced radiation exposures are sufficient to require the issuance of an environmental impact statement. At the prehearing conference, the Licensee appeared to defer to

³Even were the Licensee to use workers whose doses are computed under 10 CFR 20.101(b), a substantial number of workers nevertheless will be required to be utilized. The Commission has issued new regulations, effective August 20, 1979, which impose new requirements with respect to the application of the standards of 10 CFR 20.101(a) and (b). 44 Fed. Reg. 32349 (June 6, 1979). These new regulations are applicable to this proceeding. *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 82-83 (1974).

⁴We disagree with the Licensee's claim that adding together man-rem doses which will be received in different phases of the project does not produce a meaningful number. Such numbers have been relied upon by the Licensee in its project proposal. See, e.g., SGRR Table 4.3.2; Sections 8.5, 8.7 and Table 8.8-1; Section 9.2.

the Staff as to whether issuance of such a statement is required (Tr. 121-22). The Staff indicated that it presently planned to issue an environmental impact appraisal (Tr. 112).⁵ Under Commission rules, an impact appraisal must be issued in situations where an impact statement is not called for. 10 CFR 51.7. The Licensee in its May 30 response to the amended contentions flatly took the position that an impact statement is not required, but its sole basis for this position was the Staff's action in *Virginia Electric and Power Company* (Surry Station, Units 1 and 2), Docket Nos. 50-280, 50-281, where it issued an impact appraisal rather than a statement.

The Staff's action in the *Surry* case, or its proposed action here, is not dispositive of the question raised by GLEA. In the first place, we have no idea whether the impacts at *Surry* are at all comparable to those here. Furthermore, the *Surry* proceeding did not involve an adjudicatory hearing, so that the Staff's determination not to issue a statement has never been reviewed in an adjudicatory context.⁶ Although the determination whether to issue an impact statement falls initially upon the Staff, that determination may be made an issue in an adjudicatory proceeding. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), *et al.*, ALAB-455, 7 NRC 41 (1978). GLEA has raised just such an issue and, as we have seen, has provided a reasonable basis for it. In the last analysis, the significance of the impact of the project—in large part an evidentiary matter—will determine whether a statement must be issued. 10 CFR Sections 51.5(a) (10), 51.5(b) (2).⁷

Although Contention 7 is phrased in terms of "as low as possible," it became clear at the prehearing conference that GLEA was focusing upon the Commission's ALARA requirements (Tr. 58-59, 124-26). The Licensee and Staff each claim that the contention lacks specificity. And the Licensee refers to several ALARA measures which it is proposing to follow (SGRR Sections 4.3, 4.4, 4.9, 7.6, 8.7 and Table 4.3.2). But as we have stressed, the proposal—and particularly Table 4.3.2, upon which GLEA is relying—does nothing to indicate that each worker will not be exposed to the maximum

⁵The Staff did not discuss the impact statement issue in its May 29, 1979 "Further Response To Contentions Submitted at Prehearing Conference."

⁶The NRC has been asked for the third time to suspend further action on the *Surry* project pending preparation of an environmental impact statement. We understand that the Staff is looking again at its determination not to issue such a statement in that proceeding. See 44 Fed. Reg. 36522 (June 22, 1979). The Commission has postponed its review of two previous Staff rulings determining that an impact statement was not required. See, *e.g.*, Commission Orders dated May 15, 1979 and June 22, 1979.

⁷If the Staff should decide to issue an environmental impact statement, GLEA's contention might be ripe for dismissal pursuant to 10 CFR 2.749; new information raised in the statement might, of course, serve as a basis for additional contentions.

levels permitted under 10 CFR 20.101(a). Further, it strongly suggests that large numbers of workers will be exposed to radiation intensities approaching the maximum permissible levels. In addition, Table 4.3.2 summarizes the man-rem exposures for three alternate methods, of which the sum for the first-mentioned method is greater than for the two alternatives. (No cost information with regard to the alternatives is provided.) Finally, GLEA alluded peripherally (initial petition par. 4, 5, 6; Tr. 39, 83, 120) to the method of transportation or the storage of the radioactive generators. Selection of a method of transportation or storage is subject to ALARA considerations. See, e.g., SGRR, Sections 4.4.4, 4.4.6, 4.4.8, and Table 4.4-2. Several transportation and/or storage methods are identified, but the proposal does not specify which of them will be utilized, despite the dramatic differences in man-rem exposure which they entail. These matters are sufficiently specific to constitute an adequate basis for GLEA's contention on the ALARA requirements.

In that context, we note that at the present time the Commission has issued no regulations which delineate the manner in which a Licensee may conform to the ALARA requirements governing occupational exposures. There is no occupational exposure equivalent of 10 CFR Part 50, Appendix I, which prescribes standards for evaluating whether exposures of the general public conform to ALARA requirements. On at least one occasion, the Appeal Board has pointed to the need for the Commission to promulgate further guidance on compliance with the ALARA requirements for occupational exposures, *Prairie Island, ALAB-455, supra*, 7 NRC at 57-59, 60, but thus far the Commission has not done so. Evaluation whether an occupational exposure conforms to the ALARA requirements requires consideration of both the total amount of the exposure and the financial aspects of lowering that exposure, but the Commission has not spelled out the amount which it may require a Licensee to expend to achieve lowered radiation exposures. In dealing with the ALARA contention which we are admitting, we expect the parties to address such questions.

In sum, we admit GLEA's two contentions which raise questions about the man-rem impacts of the project, in terms of (1) the necessity of an environmental impact statement and (2) the conformance of the project with ALARA occupational exposure requirements. The two contentions stem from amended Contentions 1 and 7 (as well as original Contentions 1 and 2) and are to be construed in accordance with the foregoing discussion. They will be renumbered, respectively, as Contentions 1 and 2 and are reworded as follows:

- (1) The total man-rem exposure resulting from the steam generator replacement project, as set forth in Table 4.3.2 of the Licensee's SGRR, is of such significance, particularly with respect to the so-

matic and genetic impacts on large numbers of workers and the resultant impact on the community, as to call for the issuance of a NEPA environmental impact statement.

- (2) The Licensee's proposal is inconsistent with the Commission's requirement that occupational exposures be kept as low as is reasonably achievable, in that
 - a. it fails to specify that the alternatives outlined in SGRR Table 4.3.2 which produce the lowest man-rem exposures will be employed;
 - b. it will result in a situation where large numbers of workers will be exposed to maximum permissible levels of radiation; and
 - c. it fails to specify which transportation and/or storage method will be used or whether the method producing the lowest level of radiation exposure will be employed.

2. The only other contention we find acceptable is amended Contention 4, which, as submitted, states:

4. The impact of the construction such as noise, dust, etc., on the surrounding environment which is a prize resort area has not been considered. This area is used by people to rest and recover from work—to maintain and improve their health. This activity will seriously affect the public health and safety of the surrounding area from construction activities alone.

The Licensee would reject this contention on the ground that the impacts of construction (such as noise and dust) on the surrounding area are considered in SGRR Sections 7.4, 7.4.1, 7.4.2, and 7.4.3. It, as well as the Staff, asserts that there is no basis for the contention.

Our examination of the SGRR indicates that, although construction impacts are treated, there is no consideration of the effects, if any, of such impacts on the area's resort activities. That even standard construction activities might prove inimicable to a vacation area scarcely requires discussion. GLEA is focusing primarily on the implications of a major construction activity on a resort area. For that reason, it has provided an adequate basis for its contention.

We admit the following contention, renumbered as Contention 3:

3. The Licensee's SGRR does not adequately consider the impact of the construction (such as noise, dust, etc.) on the surrounding environment, which is a "prize" resort area.

3. We have reviewed GLEA's other contentions and find none of them to be acceptable,⁸ for the following reasons:

a. **Amended Contention 2** raises questions concerning the Palisades Plant's quality control record, and the plant's "history of frequent breakdowns and malfunctions." It also seeks examination of plant shut-down as a project alternative.

GLEA, however, fails to point to any deficiencies in the proposed quality assurance programs for this project, which are described in Section 4.7 of the SGRR. Its claim therefore has not relevance to this project.

Furthermore, plant shutdown is an alternative which is beyond our jurisdiction to consider. See *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, *supra*, 7 NRC at 46-47 n. 4. That case involved an application for a license amendment seeking expansion of the facility's spent fuel pool. If the amendment were not granted, the plant would have been required to be shut down. Nevertheless, plant shutdown was held to be an alternative which could not be considered. That same holding is even more called for in this case. For, if we should determine that the license amendment should be denied, the plant could continue to operate under its existing license using the presently installed steam generators.⁹

b. **Amended Contention 3** claims the SGRR is deficient for failing to discuss "how meteorological conditions will affect the population through airborne emissions, the local usage of ground and surface water, and other local conditions." These matters are dealt with in SGRR Sections 6.2.2.1, 6.2.2.2, 6.2.2.3, 6.2.2.4, and in Tables 6.2-2 and 6.2-5, and GLEA has failed to point to any deficiencies in that analysis. In any event, airborne emissions of interest to GLEA (Tr. 110) are in part comprehended by Contention 2, which we have admitted.

c. **Amended Contention 5** takes issue with the conclusion in the SGRR that there are no credible "accident" considerations associated with on-site storage of the steam generators that would result in the release of radioactivity. It faults the SGRR for failing to deal with seismic considerations, tornados, or erosion of the Lake Michigan shoreline.

As pointed out by the Licensee in its May 30, 1979 answer to the amended contentions, the SGRR discusses these matters in considerable detail. See

⁸ Contentions 3-9 of GLEA's initial petition do not appear to us to be contentions at all but, rather, areas in which GLEA has an interest. Some of the matters dealt with therein are included in the amended contentions with which we are dealing specifically. In any event, these contentions are not set forth with sufficient specificity to comply with the requirements of 10 CFR 2.714(b). 2.714(b).

⁹At some time in the future, the plant might have to be derated if its current steam generators remain in service. SGRR, Section 1.0. See also Tr. 106-107.

Sections 4.1.1.2.2, 4.4.2, 4.4.6, and 4.4.7. In addition, licensing regulations and guidelines of the original licensing of the Palisades Plant are, unless otherwise specified, assumed to apply here. SGRR Section 6.1.1. Seismic and hydrological aspects of the site, and tornado conditions, were evaluated in that earlier licensing. See, e.g., Staff's "Safety Analysis," dated February 7, 1967, pp. 7-9, 6. In SGRR Section 4.4.7, the conclusion is set forth that "there are no realistic accident scenarios which would result in the release of radioactivity from the generators during the onsite storage interval." The Board interprets the Licensee's analysis of accident scenarios to include events such as tornados, seismic activity, and shoreline erosion.

d. Amended Contention 6 raises two questions. First, it claims that no repository now exists for the safe disposal of any radioactive waste containing high degrees of radioactivity and of a size sufficient to accommodate the steam generators. But the SGRR identifies one such site (and others if the generators should be cut into sections). Section 4.4.3.3. GLEA has not shown that the SGRR statement is incorrect. It should be noted that the old steam generators will constitute low-level, not high-level waste.

Second, the contention claims that the SGRR fails to identify the particular licenses necessary to ship the radioactive steam generators by barge on the Great Lakes. There is no requirement that it do so.

e. Amended Contention 8 claims that the Federal Water Pollution Control Act (FWPCA) will be violated by the discharge of polluted effluents without a "valid permit." We presume that GLEA is referring to the discharge permit required in specified circumstances by Section 402 of the FWPCA. GLEA has identified the "polluted effluents" only in general terms, as radioactive discharges (Tr. 131, 136). Radioactive effluents discharged by a nuclear plant are not "pollutants" within the purview of the FWPCA. *Train v. Colorado Public Interest Research Group*, 426 U.S. 1 (1976). They thus are not covered by that Act's discharge permit requirement. In any event, the responsibility with respect to particular water quality matters covered by the FWPCA no longer resides with the Commission but, rather, has been allocated to EPA and the states. *Tennessee Valley Authority* (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 NRC 702 (1978). NRC thus has no authority to determine whether the Licensee might have to obtain a new FWPCA discharge permit for the project or whether an existing permit encompasses the discharges to be generated by the project. If a new permit must be obtained, it would have to be sought from an agency other than NRC. Furthermore, "[NRC] licensing is in no way dependent upon the existence of a 402 permit." *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 58 (1974) (footnote omitted).

III.

1. Because GLEA has demonstrated that it has standing and has set forth at least one valid contention, it is hereby admitted as a party to this proceeding. A Notice of Hearing, in the form of the attachment to this Order, is being issued. Discovery on the admitted contentions will commence immediately and will terminate 30 days following the issuance of the Staff's Safety Evaluation Report (SER) and Environmental Appraisal or Final Environmental Impact Statement. At a later date, the Board will establish a schedule for the filing of motions for summary disposition and, if necessary, evidentiary hearings.

2. At the prehearing conference, GLEA submitted a "Prehearing Conference Statement" which requested that the Commission provide it financial assistance in the form of fees for attorneys, witnesses, and consultants. The Commission, however, has precluded the granting of such requests in hearings of this type. *Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, 4 NRC 494 (1976). We are required to abide by this policy. *The Detroit Edison Company* (Greenwood Energy Center, Units 2 and 3), ALAB-376, 5 NRC 426, 428 (1977); *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-382, 5 NRC 603 (1977). GLEA's request accordingly must be denied.

For the foregoing reasons, the request for a hearing and petition for leave to intervene of the Great Lakes Energy Alliance (GLEA) is hereby *granted*. A preliminary schedule as outlined in Section III.1 of this opinion is *adopted*. GLEA's request for financial assistance is *denied*.

This Order is subject to appeal to the Atomic Safety and Licensing Appeal Board pursuant to the terms of 10 CFR 2.714a. An appeal must be filed within ten (10) days after service of this Order. The appeal and accompanying supporting brief. Any party other than the appellant may file a brief in support of or in opposition to the appeal within ten (10) days after service of the appeal.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Charles Bechhoefer, Chairman

**Dated at Bethesda, Maryland,
this 23rd day of July, 1979.**

Attachment: Notice of Hearing

ATTACHMENT
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

CONSUMERS POWER COMPANY

Docket No. 50-255 SP

(Palisades Nuclear Plant)

July 23, 1979

NOTICE OF HEARING

On January 29, 1979, the Nuclear Regulatory Commission published in the *Federal Register*, 44 *Fed. Reg.* 5732, a notice that the Commission had received a request for the Consumers Power Company (Licensee) for an amendment to Provisional Operating License No. DPR-20 to permit the removal and replacement of the steam generators at the Palisades Plant (the facility), located in Covert Township, Van Buren County, Michigan, and the return of the facility to operation using the new steam generators. The notice provided that by February 28, 1979, any person whose interest may be affected by the proceeding could file a petition for leave to intervene in accordance with the Commission's Rules of Practice, 10 CFR Part 2, particularly 10 CFR Section 2.714.

A timely petition for leave to intervene and request for a hearing in the proceeding was filed by the Great Lakes Energy Alliance (GLEA). An Atomic Atomic Safety and Licensing Board was established to rule upon such petition and to preside over the proceeding in the event that a hearing were ordered. After holding a special prehearing conference pursuant to 10 CFR Section 2.751a, the Atomic Safety and Licensing Board issued an order on July 23, 1979, granting the petition and admitting GLEA as a party to the proceeding.

Please take notice that a hearing will be conducted in this proceeding. The Atomic Safety and Licensing Board which has been designated to preside over this proceeding consists of Dr. George C. Anderson, Dr. M. Stanley Livingston, and Charles Bechhoefer, who will serve as Chairman of the Board.

During the course of the proceeding, the Board will hold one or more prehearing conferences pursuant to 10 CFR Section 2.752. The public is invited to attend any prehearing conferences, as well as the evidentiary hearing. During some or all of these sessions, and in accordance with 10 CFR

Section 2.715(a), any person, not a party to the proceeding, will be permitted to make a limited appearance statement, either orally or in writing, stating his position on the issues. The number of persons making oral statements and the time allowed for each oral statement may be limited depending upon the total time available at various sessions. Persons desiring to make a limited appearance are requested to inform the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Service Section. Written statements supplementing or in lieu of oral statements may be of any length and will be accepted at any session of the proceeding or may be mailed to the Secretary of the Commission.

For further details, see the Licensee's letter dated January 3, 1979 and the enclosed Steam Generator Repair Report, other material submitted by the Licensee in support of this action, and papers filed concerning the petition for leave to intervene, including the Special Prehearing Conference Order ruling upon the intervention petition, dated July 23, 1979, all of which are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, DC, and at the Kalamazoo Public Library, 315 South Rose Street, Kalamazoo, Michigan 49006. As they become available, the following documents may be inspected at the above locations: (1) the Safety Evaluation Report prepared by the Commission's Office of Nuclear Reactor Regulation; and (2) any environmental review documents which may be required by the Commission's regulations in 10 CFR Part 51.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland,
this 23rd day of July, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION
HAROLD R. DENTON, DIRECTOR

In the Matter of

**PUBLIC SERVICE COMPANY
OF INDIANA, INC.
WABASH VALLEY POWER
ASSOCIATION, INC.**

**Docket Nos. STN 50-546
STN 50-547**

**(Marble Hill Nuclear Generating
Station, Units 1 and 2)**

**(10 CFR 2.206)
July 6, 1979**

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations which requested reopening of the record in the Marble Hill proceeding and suspension or revocation of the Marble Hill construction permits.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Parties must be prevented from using a petition under 10 CFR 2.206 as a vehicle for reconsideration of issues previously decided.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

A petitioner under 10 CFR 2.206 must specify the facts that constitute the the basis for taking the proposed action.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By a filing which was referred to the Director of Nuclear Reactor Regulation by the Atomic Safety and Licensing Appeal Board,¹ Mr. Thomas M. Dattilo as attorney for Save the Valley / Save Marble Hill (STV) requested

¹*Public Service Company of Indiana, Inc.* (Marble Hill, Units 1 and 2), ALAB-530 (March 19, 1979). The Appeal Board denied the motion for lack of jurisdiction.

that the safety hearing held in connection with the application for construction permits for the two-unit Marble Hill facility be reopened. Mr. Dattilo addressed additional letters to the Director received April 4 and dated April 19, 1979, respectively, which requested that certain other information be considered by the Director as a basis for either reopening the safety hearings² or for issuance of an order to show-cause to revoke or suspend the Marble Hill construction permits. The various filings of STV have been considered as a request for action pursuant to 10 CFR 2.206 of the Commission's regulations. Notice of receipt of STV's motion which the Appeal Board referred to the Director and of STV's April 4th request was published in the *Federal Register*. 44 Fed. Reg. 23137 (April 18, 1979).

STV'S MOTION TO THE APPEAL BOARD

In the motion referred to the Director by the Appeal Board, STV asserted as bases for its request to reopen the safety hearings that subsequent to the issuance of construction permits³ (1) the herbicide "2,4,5-T" has been banned by the Environmental Protection Agency and (2) the Lewis Report (NUREG/CR-0400, Sept. 1978) has criticized the Rasmussen Report (WASH-1400) as a basis for reliance on the probability and consequences of reactor accidents. STV's request then asserted, without citation to the record or decisions in the Marble Hill proceeding, that 2,4,5-T and WASH-1400 were "fundamental determinants" in the Licensing Board's decision to grant construction permits, and therefore the safety hearing must be reopened to evaluate these matters. As discussed below, based upon the Staff's review of the record and decisions in this proceeding, STV is incorrect in its assertion. There was very little reliance on the matters identified by STV in the proceeding below, and such reliance as there was is not materially changed by the matters set forth in STV's request. Therefore, for the reasons detailed below, STV's request is denied.

In order to have a hearing reopened on the basis of new information, as STV seeks to do, the Appeal Board has held that the new information must identify a significant unresolved safety issue or a major change in facts

²STV has requested the Director himself to reopen the safety hearings. The Director, however, does not have the power to reconstitute the Licensing Board or Appeal Board to conduct further proceedings on the matters which STV raises. The Director could recommend to the Commission that the hearings be reopened or the Director could issue an order based on the matters raised by STV under which interested persons may have a right to request a hearing.

³Construction permits were issued in April, 1978.

material to the resolution of major environmental issues.⁴ Although the Director in considering a request for action under 10 CFR 2.206 is not bound by the Appeal Board's standard for reopening a licensing proceeding on the basis of new information, this standard is persuasive in considering requests under 10 CFR 2.260 because, as the Commission has indicated on another occasion, "[P]arties must be prevented from using 10 CFR 2.206 procedures as a vehicle for reconsideration of issues previously decided" *Consolidated Edison Company* (Indian Point Units 1-3), CLI-75-8, 2 NRC 173, 177 (1975).

STV's motion provides no explanation, by reference to the record or otherwise, why the two matters it identifies supports reopening of the record under this standard. This failure would justify denial of the request at the outset because the petitioner has not, as required by 10 CFR 2.206, specified the facts that constitute the basis for the request.⁵ However, the Staff has conducted its own review of the record in the Marble Hill proceeding in light of STV's request to reopen and has found no instance where matters concerning "2,4,5-T" or WASH-1400 were relied upon in the record leading to the two decisions of the Licensing Board involving radiological health and safety aspects of the Marble Hill construction permit proceeding.⁶ Accordingly, in the absence of any basis articulated by STV or ascertained by the Staff, the request to reopen the Marble Hill safety hearing must be denied.

Although not raised as an issue in STV's request to reopen the safety hearings, the *environmental* record leading to the Licensing Board's LWA-1 Partial Initial Decision⁷ contains references to WASH-1400, and the decision itself references use of 2,4,5,-T and other herbicides. Therefore, the Staff has reviewed the environmental record to determine whether it is appropriate to recommend that the environmental record be reopened or order suspension of the Marble Hill construction permits.

⁴*Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358 (1973); *Commonwealth Edison Company* (La Salle, Units 1 and 2), ALAB-153, 6 AEC 821 (1973). The Director of NRR has previously applied this standard in denying another petition under 10 CFR 2.206 which requested suspension of construction permits pending reconsideration of the need for power issue after the proceeding on issuance of construction permits for the facility had been closed, *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582 (April 13, 1979) (Docket Nos. 50-424 and 50-425).

⁵ See also the Director's denial of a petition under 10 CFR 2.206 in *Duke Power Company* (Oconee Nuclear Station, Units 1,2, and 3), DD-79-6661 (May 24, 1979) (Docket Nos. 50-269, 50-270 and 50-287).

⁶Those decisions were: "Partial Initial Decision—LWA-2," 6 NRC 1101 (December 9, 1977), and "Initial Decision—CP," 7 NRC 573 (April 4, 1978).

⁷6 NRC 294 (August 22, 1977).

HERBICIDES

The potential hazards of use of 2,4,5-T and other herbicides were discussed in Section 4.3.1.2 of the Staff's Final Environmental Statement for the Marble Hill facility (NUREG 0097) published in September, 1976. In addition, the use of herbicides for the maintenance of transmission line rights-of-way was a litigated contention in the environmental proceeding. 6 NRC at 318-19. Strict conditions on the use of all herbicides were recommended by the Staff in the FES and were incorporated by the Licensing Board as conditions of the limited work authorization (and later the construction permits). FES, Sections 4.3.1.2 and 4.5.2; 6 NRC at 318, 346-47. Significantly, the Licensing Board explicitly found that the Applicants' use of herbicides will be in adherence to the U.S. Environmental Protection Agency guidelines adopted pursuant to the Federal Insecticide, Fungicide, and Rodenticide Act of 1972. 6 NRC at 318. To the extent use of 2,4,5,-T is prohibited by the EPA's action, it simply means that the Applicants will not be able to use this particular herbicide. The Applicants can use other herbicides which are approved by EPA (some of which were listed in FES, Section 4.3.1.2) or other methods of defoliation which were approved in the FES (e.g., selective mechanical clearing to the fullest extent practicable).

WASH-1400

Although it was not expressly referenced in the environmental decision, WASH-1400 was referenced in the environmental record in two separate contexts. The Staff's Final Environmental Statement only references the study for its existence and states:

As with all new information developed which might have an effect on the health and safety of the public, the results of these studies will be assessed on a timely basis within the Regulatory process on generic or specific bases as may be warranted. [FES, page 7-2].

As is obvious from Chapter 7 of the FES, and as is expressly illustrated by the above quotation, no reliance was placed upon WASH-1400 for the Staff's conclusions on the environmental impacts of postulated accidents. Rather, the Staff relied upon the accident assumptions and guidance issued in the proposed Annex A to then Appendix D of 10 CFR Part 50 (now 10 CFR Part 51).

As part of its consideration of the contested issue of the alternative generation of electricity by a coal-fired facility, the Licensing Board considered the NRC Staff's testimony presented by Dr. R.L. Gotchy on the

comparative health effects of coal versus nuclear. 6 NRC at 321-323; *see also* Dr. Gotchy's testimony following Transcript at 4927. The Licensing Board found that:

“Notwithstanding conservatism in the extensive analysis by the Staff, it is clear that the nuclear fuel cycle is considerably less harmful to man than the coal fuel cycle. The Board so finds. Indeed, the coal alternative may be more harmful to man by factors of 4 to 250, depending upon the effect being considered, than the all-nuclear uranium fuel cycle, or factors of 3 to 22 with the assumption that all of the electricity used by the uranium fuel cycle comes from coal-powered plants (Staff Test., post Tr. 4972, p. 11).” [6 NRC at 322].

The upper bounds of these two ranges of factors (250 and 22) represent the excess mortality comparisons of coal and nuclear from Table 1 of Dr. Gotchy's testimony. The lower bound of these two ranges of factors (4 and 3) represent excess morbidity and injury comparisons from Table 2 of Dr. Gotchy's testimony.

Dr. Gotchy used the probability and consequences of reactor accidents, as set forth in WASH-1400, to derive the excess mortality factor (Gotchy testimony Table 1a) for his comparative health effects testimony. During cross-examination on possible uncertainties in the probability of reactor accidents, Dr. Gotchy testified that a factor of ten increase in accident risks assumed in his analysis would only change the overall uranium fuel cycle excess mortality rate per reference reactor year by approximately a factor of two (from 0.48 to 0.84 in Table 1a). (Tr. 5013). The WASH-1400 probabilities were not used to derive the excess morbidity and injury factors; therefore the lower bound of these two ranges of factors (4 and 3) would not be affected by changes to WASH-1400.

The Risk Assessment Review Group (Lewis Report, NUREG/CR-0400), while supporting the general methodology of WASH-1400 and recognizing its contribution to assessing the risks of nuclear power, found that it was unable to determine whether the absolute probabilities of accident sequences in WASH-1400 are high or low. The Lewis Report concluded that the error bounds on those estimates are, in general, greatly understated. If we assume a factor of 100 increase in the probability and consequences of reactor accidents from WASH-1400 in order to account for the uncertainties discussed in the Lewis Report, then the excess mortality from Table 1a would increase by a factor of five (0.48 to 2.44). By increasing this factor, the factors by which the coal alternative is more harmful to man than nuclear would change from ranges of 4-250 (all nuclear) and 3-22 (all coal power) to ranges of 4-49 (all nuclear) and 3-15 (all coal power). Therefore, even if we assume a large increase in WASH-1400 accident risks, this change does not have a material

effect on Dr. Gotchy's conclusions or the Licensing Board's findings that, "the nuclear fuel cycle is considerably less harmful to man than the coal fuel cycle." 6 NRC at 322. Accordingly, I would not recommend suspension of the construction permits or reopening the Marble Hill record for reconsideration of issues involving 2,4,5-T or WASH-1400.

STV'S REQUESTS CONCERNING THE THREE MILE ISLAND ACCIDENT

STV's April 4th and April 19th letters raised safety concerns related to the accident at Three Mile Island Unit No. 2. STV alleged that these concerns serve as a further basis for either reopening the safety hearings or for issuance of an order to show cause, to suspend, or revoke the construction permits.

The NRC Staff is currently conducting a thorough investigation of the March 28, 1979, accident at the Three Mile Island Power Plant, Unit No. 2. This investigation includes study of potential design deficiencies in the plant, plant operator response to the accident including operator errors and/or misinterpretation of plant instrumentation, and all other aspects of the accident which might lead to information that would improve the safety of nuclear power plants. For obvious reasons, the major emphasis of the current staff effort is focused on nuclear power plants that are presently licensed to operate. However, the results of the Staff's investigations will also be applied to plants that are currently under construction and plants for which construction permits have been applied for but not yet issued. It should be noted that the Marble Hill Station will utilize a Westinghouse reactor while the Three Mile Island plant utilizes a Babcock and Wilcox reactor. Therefore, some of the results and recommendations of the Staff's investigation may not be directly applicable to the Marble Hill Station.

Any new requirements for construction or operation of nuclear facilities that the Commission deems necessary as a result of the investigation of the Three Mile accident or any other NRC effort will be applied to the Marble Hill Station to the extent applicable. These matters will be included in our review of Public Service Company of Indiana's request for an operating license, which was tendered on June 1, 1979. Therefore, based on a preliminary assessment of the factors which contributed to the Three Mile Island accident and on a determination that any new requirements can be incorporated as necessary in the operating license review of Marble Hill, I do not find it necessary to stop construction or recommend the reopening of the safety hearing for Marble Hill at this time on the matters raised by STV regarding the accident at Three Mile Island.

CONCLUSION

For the reasons stated in this decision, I have determined that there exists no adequate basis for instituting a proceeding to suspend or revoke the Marble Hill construction permits or taking any further action to supplement the record in the Marble Hill proceeding with respect to the matters raised by STV. The requests of Save the Valley/Save Marble Hill are hereby *denied*.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and the Local Public Document Room for the Marble Hill Nuclear Generating Station, located at the Madison-Jefferson County Public Library, 420 West Main Street, Madison, Indiana 47250. A copy of this decision will also be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission twenty (20) days after the date of issuance, unless the Commission on its own motion institutes a review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 6th day of July, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

VICTOR STELLO, JR., DIRECTOR

In the Matter of

KANSAS GAS AND ELECTRIC
COMPANY
(Wolf Creek Generating Station,
Unit 1)Docket No. STN 50-482
(10 CFR 2.206)
July 12, 1979

The Director of Inspection and enforcement denies petitions under 10 CFR 2.206 of the Commission's regulations which requested suspension or revocation of the Wolf Creek construction permit on the basis of deficiencies in concrete and the licensee's quality assurance program as related to concrete work.

DIRECTOR'S DENIAL OF REQUEST UNDER 10 CFR 2.206

William H. Ward, by petitions dated January 11 and June 29, 1979, on behalf of the Mid-America Coalition for Energy Alternatives (MCEA), Richard P. Pollock, by petition dated December 27, 1978, on behalf of the Critical Mass Energy Project, and other persons¹ have requested that the Commission suspend or revoke Construction Permit No. CPPR-147 which authorizes construction of the Wolf Creek Generating Station Unit No. 1. Notices of receipt of MCEA's and Critical Mass' petitions were published in the *Federal Register*. 44 Fed. Reg. 6535, 10445 (February 1 and February 20, 1979) and all petitioners have been advised by letter that their petitions were being treated as requests for action under 10 CFR 2.206 of the Commission's regulations. At issue in the petitions is the acceptability of the concrete at the Wolf Creek facility. Specifically, the issues of concern are whether the base mat concrete is of sufficient strength for its intended function and whether

¹Wanda Christy of Burlington, Kansas; Max McDowell of Elmdale, Kansas; David McCullough of Emporia, Kansas; Tony White of Garnett, Kansas; Kaye Yoder of McPherson, Kansas; Ferdinand and Ivonne Burmeister of Otis, Kansas; Marvin Dawson, James Mason on behalf of Kansans for Sensible Energy, Janet Skiles, and Tom Wheeler of Wichita, Kansas. Steve A.J. Bukaty, by petition dated May 15, 1979, on behalf of the Kansas Building and Construction Trades Council, also requested that the Wolf Creek construction permit be revoked.

the quality assurance system at the facility is adequate to assure acceptable concrete work.

These matters have been reviewed and for the reasons given below I have determined that the December 19, 1978, Immediate Action Letter¹ as modified by the March 5, 1979, Immediate Action Letter² halting placement of concrete in the reactor containment building may be lifted and that suspension of construction at the Wolf Creek facility is not warranted at this time in the interest of public health and safety. Accordingly, the above petitions are denied.³

The facts surrounding this matter are detailed in Appendix C. Briefly, on December 12 and 13, 1977, the Wolf Creek building base mat was placed as a single monolithic pour of about 6600 cubic yards of concrete. Test cylinders were concurrently made from representative samples of the concrete. On March 14, 1978, the licensee notified NRC Region IV that some of the concrete cylinders which were tested (as specified) 90 days after the original placement did not meet the specified strength of 5000 pounds per square inch. The licensee initiated various efforts to identify the reasons for the low strength of some of the test cylinders, and on October 26, 1978 filed a final report which described the work performed, and which concluded that the low strength cylinder tests were not truly representative of the concrete in place, and that the concrete in place in the containment building base mat did in fact satisfy specification requirements.

In December, 1978 the licensee reported that some problems had been experienced placing concrete under steel inserts for access hatches. As a result, voids existed where there was no concrete or poorly consolidated concrete. In light of this occurrence, and the continuing delay in resolution of questions on the base mat concrete, NRC Region IV representatives met with the licensee, and expressed the opinion that further concrete work on the containment building should be suspended until concrete placing and consolidation procedures were improved, concrete placing crews were further trained, concrete inspectors and inspection procedures were upgraded, and questions on base mat quality were resolved. The licensee agreed, and the agreement was documented in a letter from Region IV dated December 19, 1978. This agreement was modified by a March 5, 1979 letter from NRC Region IV. A special NRC investigation was conducted under NRC Region

¹The December 19, 1978 letter is enclosed in Appendix A.

²The March 5, 1979 letter is enclosed in Appendix B.

³On the basis of the facts contained in his petition, Mr. Bukaty's petition on behalf of the Kansas Building and Construction Trades Council is denied by this decision. However, Mr. Bukaty indicated in the petition that further factual information may be available. Arrangements have been made to obtain such information, and this decision will be reconsidered with respect to Mr. Bukaty's petition should any new relevant and material information be obtained.

IV direction during the period from November 13 through 17, 1978, and December 6 through 9, 1979.⁵ The team was composed of inspectors from NRC Regions III and IV and Parameters, Inc., a consultant on concrete engaged specifically for this purpose. The team concluded that it could not agree with the licensee's opinion, and that the test data must be considered to accurately reflect the strength of the concrete in place. On the basis of the test data, it was determined that a maximum strength of 4460 psi could be justified. This was approximately 10 percent understrength from the design strength of 5000 psi. The licensee conducted a reanalysis by two alternative methods to determine whether a lower strength concrete might be acceptable for use at the Wolf Creek site. The reanalysis was submitted on June 6, 1979.

It should be noted that some of the ninety day cylinders showed lower strength than companion cylinders from the same batch of concrete tested after 28 days. There is some randomness in test results and, although concrete strength generally increases with age, some river gravel in the vicinity of the site is known to contain an ingredient which can cause loss of strength in concrete. The NRC consultant suggested that this might explain the apparently anomalous behavior of some of the test cylinders. To test the validity of this hypothesis, and to independently correlate the results of some of the tests performed by the licensee's consultant, the Construction Technology Laboratories of the Portland Cement Association, NRC arranged for the US Army Corps of Engineers Waterways Experiment Station to perform independent petrographic examinations of samples of concrete from the test cylinders. The Corps of Engineers' report is made part of this decision as Appendix D.

Results of the independent examination of the Corps of Engineers correlate closely with the results of the licensee consultant's examination. Both show that there is no evidence of contamination with adverse ingredients which may have caused a loss in strength of the concrete over time and that the samples are representative of sound, relatively high strength concrete. Thus the instances where the cylinders tested after 90 days showed lower strength than the cylinders of the same concrete batch which was tested after 28 days may be attributed to randomness in the testing process.

The licensee's reanalysis and the report of the Corps of Engineers have been reviewed. The result of that review is that the concrete base mat will withstand the specified design loads and loading combinations without impairment of its structural integrity or its safety functions.⁶

⁵See Inspection Report STN 50-482/78-13 (February 15, 1979).

⁶Evaluation Report Regarding the Concrete Strength of the Reactor Building Base Mat Wolf Creek Generating Station, which is made part of this decision and is attached as Appendix E. The evaluation report is based on the 0.12 g safe shutdown earthquake and the 0.06 g operating basis earthquake approved for the Wolf Creek site. The information concerning seismic forces

Continued on next page.

In response to our concerns about quality assurance resulting from the findings of the inspection conducted during November 13-16, 1978, and December 6-8, 1978,⁷ NRC Region IV representatives met with senior representatives of the licensee and its construction contractor.⁸ Agreements achieved during the meeting are documented in an Immediate Action Letter to the licensee dated December 19, 1978, including the licensee's commitment to suspend placement of safety-related concrete. Based on information obtained during follow-up inspections that were conducted to examine the licensee's implementation of these agreements,⁹ NRC Region IV concluded that the licensee had been responsive to the NRC's concerns and that modification of the December 19th Immediate Action Letter appeared appropriate, to permit placement of safety-related concrete except in containment.

Inspection Report No. STN 50-482/79-04 describes actions and findings of an inspection conducted on March 5-8, 1979, at the resumption of placement of concrete at Wolf Creek. During the inspection on March 8, 1979, the licensee notified the NRC that it had again terminated placement of concrete. The licensee's action was not inconsistent with NRC Region IV's modification of the December 19th Immediate Action Letter. The licensee's action demonstrated the licensee's adherence to its quality assurance program.

quality assurance program, NRC Region IV found noncompliance with the program as indicated in Inspection Report No. STN 50-482/79-04 and as discussed in the related enforcement letter dated April 11, 1979. Additional inspections were conducted specifically to observe concrete work in progress on March 26-29, 1979,¹⁰ April 9-12, 1979,¹¹ April 16-19, 1979,¹² and April 23-26, 1979.¹³ The results of these inspections indicate that Wolf Creek's quality assurance program is effective in correcting identified problems.

Accordingly, I find reasonable assurance that the licensee's quality assurance program is adequate to permit resumed placement of containment concrete. Thus, for the reasons stated in this decision, the petitions to suspend or revoke the Wolf Creek construction permit are denied.¹⁴ Nonetheless, the NRC will continue its inspection effort at the Wolf Creek facility

Continued from previous page.

contained in the June 29, 1979 letter from Mr. Ward has been previously considered by the staff and it does not alter the vibratory ground motion values for the Wolf Creek site.

⁷The findings are reported in Inspection Report No. STN 50-482/78-13. A Notice of Violation was issued on February 16, 1979, on the basis of this inspection.

⁸The meeting is reported in Inspection Report No. STN 50-482/79-1.

⁹The inspection findings are contained in Inspection Report Nos. STN 50-482/79-01 and STN 50-482/79-03.

¹⁰Inspection Report No. STN 50-482/79-05.

Continued on next page.

theless, the NRC will continue its inspection effort at the Wolf Creek facility to assure that the licensee correctly places concrete and properly maintains its quality assurance program.¹⁵

A copy of this determination will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and the Local Public Document Room for the Wolf Creek Generating Station at the Coffey County Courthouse, Burlington, Kansas 66839. A copy of this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's Rules of Practice, this decision will constitute the final action of the Commission twenty (20) days after the date of issuance, unless the Commission on its own motion institutes review of this decision within that time.

Victor Stello, Jr. Director,
Office of Inspection and Enforcement

Dated at Bethesda, Maryland
this 12 day of July, 1979.

[Appendixes A, B, C, D and E have been omitted from this publication but are available in the Public Document Room, 1717 H Street, N.W., Washington, D.C.]

Continued from previous page.

¹¹Inspection Report No. STN 50-482/79-07.

¹²Inspection Report No. STN 50-482/79-08.

¹³Inspection Report No. STN 50-482/79-09.

¹⁴Critical Mass has also suggested, without elaboration, that the circumstances surrounding construction problems at Wolf Creek indicate "significant weaknesses" in Region IV's inspection capabilities. Since potential problems with containment concrete were first identified in March 1978, Region IV has, in conjunction with I & E Headquarters, been continuously aware of the licensee's actions, has guided and required various actions by the licensee, and has obtained specialized assistance from other NRC offices and outside parties. Thus, I find no basis for the expressed concern about the adequacy of Region IV's inspection effort.

¹⁵NRC Region IV, in the enforcement letter accompanying Inspection Report No. STN 50-482/79-04, also expressed its view that the licensee had not assigned sufficient personnel to the project to implement an effective preventive quality assurance effort. As a result, a management meeting was conducted in Region IV's offices on April 28, 1979, which is reported in Inspection Report No. STN 50-492/79-10. The licensee has committed to assignment of additional staff. However, most of the new staff must be recruited and no firm schedule for implementation has been set.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**COMMISSIONERS:**

Joseph M. Hendrie, Chairman
Victor Gillinsky
Richard T. Kennedy
Peter A. Bradford
John F. Ahearne

In the Matter of**METROPOLITAN EDISON
COMPANY****Docket No. 50-289****(Three Mile Island Nuclear Station,
Unit No. 1)****August 9, 1979****ORDER AND NOTICE OF HEARING**

In an immediately effective order the Commission orders Three Mile Island, Unit No. 1 to remain in a cold shutdown condition until the issuance of a further order by the Commission following (1) satisfactory completion by the licensee of certain "short-term" actions and (2) reasonable progress by the licensee toward satisfactory completion of certain "long-term" actions. The Commission orders a hearing; and establishes a licensing board to rule on petitions to intervene, conduct the hearing, render an initial decision and, upon issuance of a partial initial decision or initial decision, to certify the record to the Commission itself for final decision. The Commission sets out guidelines on the conduct of the hearing including the raising of issues relating to the licensee's financial qualifications and specifying interlocutory consideration of issues such as the psychological distress and others arising from the continuing impact of aspects of the Three Mile Island accident unrelated directly to exposure to radiation on the part of citizens living near the plant. The Commission establishes a procedure to be applied in the event the Licensing Board issues a decision authorizing resumption of plant operation for determining whether the provision of the instant order requiring the plant to remain shutdown should remain immediately effective pending appellate review of the merits of the Board's decision by the Commission.

I.

The Metropolitan Edison Company (the licensee) is holder of Facility Operating License No. DPR-50 which authorizes the operation of the nuclear power reactor known as Three Mile Island Nuclear Station, Unit No. 1 (the facility or TMI-1), at steady state power levels not in excess of 2535 megawatts

thermal (rated power). The facility is a Babcock and Wilcox (B&W) designed pressurized water reactor (PWR) located at the licensee's site ten miles southeast of Harrisburg, Pennsylvania.

II.

On July 2, 1979, the Commission ordered that the facility remain in a cold shutdown condition until further order of the Commission and stated that a hearing will be conducted prior to any restart of the facility. On the basis of that hearing the Commission will determine whether any further operation will be permitted and, if so, under what conditions. The Commission herein specifies the basis for its concerns and the procedures to govern further proceedings in this matter. For the reasons later set forth, the Commission has determined that satisfactory completion of certain short-term actions and resolution of various concerns described herein are required to provide reasonable assurance that the facility can be operated without endangering the health and safety of the public. The Commission has determined that certain additional long-term actions are, for the reasons given below, required to be completed as promptly as practicable, and that reasonable progress on the completion of such actions prior to restart is required, in order to provide reasonable assurance that the facility can be operated safely over the long term. This Order and Notice of Hearing further establishes procedures for a hearing and decision on the particular issues identified in Section V of this Order. The Commission has determined that hearing and decision with review there of (as provided in Sections V and VI below) on the issues specified in this order is required and that such hearing, decision and review on the issues relating to the actions required prior to restart of the facility must be completed prior to any Commission Order lifting the suspension of operation.

Accordingly, the Atomic Safety and Licensing Board designated to conduct this proceeding should give priority to consideration of those issues which are related directly to suspension of operation. To the extent feasible, the Board should defer full review of the issues related to the longer-term actions until after the rendering of a partial initial decision regarding the suspension-related issues.

The Commission's July 2, 1979 Order recited that "the Commission presently lacks the requisite reasonable assurance that the . . . Licensee's Three Mile Island Unit No. 1 Facility . . . can be operated without endangering the health and safety of the public." The bases for that conclusion (which remains valid) are: In the course of its evaluation to date of the accident at the Three Mile Island Unit No. 2 facility, which utilizes a B&W designed PWR, the Nuclear Regulatory Commission staff has ascertained that B&W designed reactors appear to be unusually sensitive to certain off-normal transient conditions originating in the secondary system. The features of the B&W design that contribute to this sensitivity are: (1) design of the steam generators to operate with relatively small liquid volume in the secondary side; (2) the lack of direct initiation of reactor trip upon the occurrence of off-normal conditions in the feedwater system; (3) reliance on an integrated control

system (ICS) to automatically regulate feedwater flow; (4) actuation before reactor trip of a pilot-operated relief valve on the primary system pressurizer (which, if the valve sticks open, can aggravate the event); and (5) a low steam generator elevation (relative to the reactor vessel) which provides a smaller driving head for natural circulation.

Because of these features, B&W designed reactors place more reliance on the reliability and performance characteristics of the auxiliary feedwater system, the integrated control system, and the emergency core cooling system (ECCS) performance to recover from frequent anticipated transients, such as loss of offsite power and loss of normal feedwater, than do other PWR designs. This, in turn, places a large burden on the plant operators in the event of off-normal system behavior during such anticipated transients.

As a result of a preliminary review of the Three Mile Island Unit No. 2 accident chronology, the NRC staff initially identified several human errors that occurred during the accident and contributed significantly to its severity. All holders of operating licenses, except Metropolitan Edison, whose plants were already shut-down, were subsequently instructed to take a number of immediate actions to avoid repetition of errors, in accordance with bulletins issued by the Commission's Office of Inspection and Enforcement (IE). In addition, the NRC staff began an immediate reevaluation of the design features of B&W reactors to determine whether additional safety corrections or improvements were necessary with respect to these reactors. This evaluation involved numerous meetings with B&W and certain of the affected licensees.

The evaluation identified design features as discussed above which indicated that B&W designed reactors are unusually sensitive to certain off-normal transient conditions originating in the secondary system. As a result, an additional bulletin was issued by IE which instructed holders of operating licenses for B&W designed reactors to take further actions, including immediate changes to decrease the reactor high pressure trip point and increase the pressurizer pilot-operated relief valve setting. Also, as a result of this evaluation, the NRC staff identified certain other safety concerns that warranted additional short-term design and procedural changes at operating facilities having B&W designed reactors. These were identified as items (a) through (e) on page 1-7 of the Office of Nuclear Reactor Regulation Status Report to the Commission of April 25, 1979.

In addition to the items identified for the other B&W reactors, the unique circumstances at TMI require that additional safety concerns identified by the NRC staff be resolved prior to restart. These concerns result from (1) potential interaction between Unit 1 and the damaged Unit 2, (2) questions about the management capabilities and technical resources of Metropolitan Edison, including the impact of the Unit 2 accident on these, (3) the potential effect of operations necessary to decontaminate the Unit 2 facility on Unit 1, and (4) recognized deficiencies in emergency plans and

station operating procedures. Based on the above, the Commission's Director of Nuclear Reactor Regulation (NRR) has recommended that the following actions (the "short-term actions") be required of the licensee to resolve the concerns stated herein and permit a finding of reasonable assurance that the facility can safely resume operation.

1. The licensee shall take the following actions with respect to TMI-1:
 - (a) Upgrade the timeliness and reliability of the Emergency Feedwater (EFW) system by performing the items specified in Enclosure 1 of the licensee's June 28, 1979 letter. Changes in design will be submitted to the NRC staff for review.
 - (b) Develop and implement operating procedures for initiating and controlling EFW independent of Integrated Control System (ICS) control.
 - (c) Install a hard-wired control grade reactor trip on less of main feedwater and/or on turbine trip.
 - (d) Complete analyses for potential small breaks and develop and implement operating instructions to define operator action.
 - (e) Augment the retraining of all Reactor Operators and Senior Reactor Operators assigned to the control room including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident. All operators will also receive training at the B&W simulator on the TMI-2 accident and the licensee will conduct a 100 percent reexamination of all operators in these areas. NRC will administer complete examinations to all licensed personnel in accordance with 10 CFR 55.20-23..
2. The licensee shall provide for NRC review and approval of all applicable actions specified in IE Bulletins 79-05A, 79-05B, and 79-05C.
3. The licensee shall improve his emergency preparedness in accordance with the following:
 - (a) Upgrade emergency plans to satisfy Regulatory Guide 1.101 with special attention to action level criteria based on plant parameters.
 - (b) Establish an Emergency Operations Center for Federal, State, and Local Officials and designate a location and an alternate location and provide communications to plant.
 - (c) Upgrade offsite monitoring capability, including additional thermo-luminescent dosimeters or equivalent.
 - (d) Assess the relationship of State/Local plans to the licensee plans so as to assure the capability to take emergency actions.
 - (e) Conduct a test exercise of its emergency plan.

4. The licensee shall demonstrate that decontamination and/or restoration operations at TMI-2 will not affect safe operations at TMI-1. The licensee shall provide separation and/or isolation of TMI 1/2 radioactive liquid transfer lines, fuel handling areas, ventilation systems, and sampling lines. Effluent monitoring instruments shall have the capability of discriminating between effluents resulting from Unit 1 or Unit 2 operations.
5. The licensee shall demonstrate that the waste management capability, including storage and processing, for solid, liquid, and gaseous wastes is adequate to assure safe operation of TMI-1, and that TMI-1 waste handling capability is not relied on by operations at TMI-2.
6. The licensee shall demonstrate his managerial capability and resources to operate Unit 1 while maintaining Unit 2 in a safe configuration and carrying out planned decontamination and/or restoration activities. Issues to be addressed include the adequacy of groups providing safety review and operational advice, the management and technical capability and training of operations staff, the adequacy of the operational Quality Assurance program and the facility procedures, and the capability of important support organizations such as Health Physics and Plant Maintenance.
7. The licensee shall demonstrate his financial qualifications to the extent relevant to his ability to operate TMI-1 safely.
8. The licensee shall comply with the Category A recommendations as specified in Table B-1 of NUREG-0578.

The Commission has additional concerns, which, though they need not be resolved prior to resumption of operation at Three Mile Island Unit 1, must be satisfactorily addressed in a timely manner. The Commission's Director of Nuclear Reactor Regulation (NRR) has recommended that the following actions (the "long-term actions") be required of the licensee to resolve these concerns and permit a finding of reasonable assurance of the safety of long-term operation. These are:

1. submit a failure mode and effects analysis of the ICS to the NRC staff as soon as practicable;
2. give continued attention to transient analysis and procedures for management of small breaks by a formal program set up to assure timely action of these matters;
3. comply with the Category B recommendations as specified in Table B-1 of NUREG-0578; and,
4. improve emergency preparedness in accordance with the following:
 - (a) modify emergency plans to address changing capabilities of plant instrumentation,
 - (b) extend the capability to take appropriate emergency actions for the population around the site to a distance of ten miles.

III.

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's rules and regulations in 10 CFR, it is hereby ordered that:

- (1) the licensee shall maintain TMI-1 in a cold shutdown condition until further order of the Commission which will be issued following satisfactory completion of the required short-term actions and reasonable progress toward satisfactory completion of those required long-term actions referred to in section IV (such short-term and long-term actions to be considered "required" for purposes of this clause which are determined by the Commission, after review of the Licensing Board's decision, to be necessary and sufficient to provide adequate protection of the public health and safety); and
- (2) the licensee shall satisfactorily complete the long-term actions listed in Table B-1 of NUREG-0578 on the schedule set out in such table and such other long-term actions listed above as promptly as practicable.

IV.

The Commission has determined that, in light of the concerns listed above, the public health, safety, and interest require that the portion of the order referred to in clause (1) of Section III shall be immediately effective. The long-term actions referred to in such clause shall be those long-term actions listed in Section II as to which the Commission, prior to the date of this order, has issued immediately effective orders against other licensees. If the Commission issues immediately effective orders against other licensees imposing requirements with respect to other long-term actions, it will, to the extent appropriate in the circumstances, issue orders, effective immediately, to require that the licensee demonstrate reasonable progress toward completion of such other actions as a condition to restart. If the Board determines that operation can be resumed upon completion of certain specific short-term actions by the licensee, it shall consider the extent to which the licensee has demonstrated reasonable progress toward completion of the long-term actions described in this section. If it finds that the licensee has demonstrated reasonable progress, it shall recommend resumption of operation upon completion of the short-term actions. If it cannot make such a finding, it shall recommend that operation be resumed at a date that it believes appropriately reflects the importance of the action involved, the time lost because such progress had not been made on the prescribed schedule and the overriding need to provide adequate protection for the public health and safety.

V.

An Atomic Safety and Licensing Board consisting of Ivan W. Smith, Esq., Chairman, Dr. Walter H. Jordan, Member, and Dr. Linda W. Little,

Member, is hereby established to rule on petitions to intervene, to conduct the hearing ordered herein, and to render an initial decision in accordance with 10 CFR 2.760. The Atomic Safety and Licensing Board will issue a further order specifying the date and place of the hearing and any prehearing conferences. The Board should hold its sessions in the vicinity of the facility and it should attempt to schedule some of its sessions in the evening or on weekends to permit the maximum possible public attendance.

The hearing will be conducted in accordance with the applicable provisions of subpart G of the Commission's Rules of Practice set forth in 10 CFR Part 2. The provisions of 10 CFR 2.715a (consolidation of parties), 2.751a (special prehearing conference and order), 2.752 (prehearing conference and order) shall apply to this proceeding.

The Commission's primary commitment is to a fair and thorough hearing and decision. Given this overriding imperative, it is the Commission's expectation that the Board will conduct the proceeding expeditiously. The Board should as early as possible publish an appropriate schedule and attempt to meet it. A tentative schedule composed by the Commission is attached for the Board's possible use, although the Board should not be constrained by it. The Board is instructed to explore opportunities to shorten the time limits provided in the Rules pursuant to 10 CFR 2.711. The Licensing Board is hereby instructed to consolidate participation of parties pursuant to 10 CFR 2.715a to the maximum extent practicable consistent with the provisions of that regulation. In its review of the Initial Decision, the Commission will invoke 10 CFR 2.711 to shorten time limits where feasible. It is hereby directed, pursuant to 2.760(a), that, upon issuance of the initial decision (or partial initial decision) in this matter, the record be certified to the Commission itself for final decision. Any party may take an appeal directly with the Commission by filing exceptions to the initial decision (or partial initial decision) in accordance with the provisions of 10 CFR 2.762. Commission review of the initial decision will be conducted in accordance with 10 CFR 2.770.

In the conduct of this proceeding the Licensing Board should exercise its authority to seek to ensure that it receives all information necessary to a thorough investigation and resolution of the questions before it. However, it should use its authority under 10 CFR 2.757 to prevent any undue delay to the proceeding resulting from any cross-examination not required for the full and true disclosure of the facts or from other sources mentioned in that section.

The provisions for pre-hearing discovery set forth in 10 CFR 2.740-2.742 shall apply to this proceeding. Furthermore, in several locations, including the Commission's Public Document Room and the TMI Local Document Room in Harrisburg, the Commission will maintain and continuously update a compilation of all publicly available information on the Three Mile Island accident and related matters, and it will also permit informal access to NRC staff considerations of the issues involved in this hearing in the manner in which such access is permitted in reactor licensing proceedings. It shall be an adequate response to any discovery request to state

that the information or document requested is available in the public compilation and to provide sufficient information to locate the document or information. Moreover, as provided by 10 CFR 2.740(c) and 10 CFR 2.740(d), the Licensing Board may and should, when not inconsistent with fairness to all parties, limit the extent or control the sequence of discovery to prevent undue delay or imposition of an undue burden on any party.

The subjects to be considered at the hearing shall include:

- (1) Whether the "short term actions" recommended by the Director of Nuclear Reactor Regulation (set forth in Section II of this Order) are necessary and sufficient to provide reasonable assurance that the Three Mile Island Unit 1 facility can be operated without endangering the health and safety of the public, and should be required before resumption of operation should be permitted.
- (2) Whether the "long-term actions" recommended by the Director of Nuclear Reactor Regulation (set forth in Section II of this Order) are necessary and sufficient to provide reasonable assurance that the facility can be operated for the long term without endangering the health and safety of the public, and should be required of the licensee as soon as practicable.

As to the issue of financial qualifications mentioned above, a party wishing to raise this subject as a contention must clearly indicate why the licensee's financial condition might undermine the licensee's ability to operate the plant safely. Parties raising this issue should do so before the Special Prehearing Conference.

While real and substantial concern attaches to issues such as psychological distress and others arising from the continuing impact of aspects of the Three Mile Island accident unrelated directly to exposure to radiation on the part of citizens living near the plant, the Commission has not determined whether such issues can legally be relevant to this proceeding. Any party wishing to raise such subjects as contentions, or as aspects of separate contentions, should brief the Atomic Energy Act and National Environmental Policy Act issues he believes appropriate to the Board as part of the contention acceptance process set out in the Commission's regulations. The Board should then certify such issues to the Commission for final decision prior to the issuance of its prehearing conference order pursuant to 10 CFR 2.752(c), either with or without its recommendation on such issues, as it deems appropriate under the circumstances. At the time the Commission reaches a decision on these issues, it will also consider whether it can and should grant financial assistance to parties seeking to raise these issues in this case.

Satisfactory completion of the required actions will be determined by the Director of Nuclear Reactor Regulation. However, prior to issuing its decision the Board shall have authority to require staff to inform it of the detailed steps staff believes necessary to implement actions the Board may require and to approve or disapprove of the adequacy of such measures. With

respect to any uncompleted items the Board shall have authority similar to that provided in 10 CFR 50.57(b) to take such actions or to impose such limitations or conditions as it believes necessary to protect the public health and safety: Provided, that, as provided elsewhere in this order, restart shall not be permitted until satisfactory completion of all uncompleted short-term actions. Any affirmative determination by the Director will be based upon his finding that the actions specified by the Board, or by the Commission on review, have been taken, that the specified implementing procedures employed are appropriate, that the licensee satisfies the financial qualification criteria imposed on an applicant for an operating license, and that there is reasonable assurance that the facility can safely resume operation.

As noted above, the Atomic Safety and Licensing Board should accord priority to the consideration of matters relating to the need for continued suspension of operating authority. Within the limitations of 10 CFR 50.59 and 2.717(b) of the Commission's regulations, the licensee may commence modifications, such as those recommended above by the Director of Nuclear Reactor Regulation, during the pendency of this proceeding at its own risk.

VI.

If the Licensing Board should issue a decision authorizing resumption of operation upon completion of certain short-term actions by the licensee and a finding that in its judgment the licensee is making reasonable progress toward completion of the long-term actions specified in this order as to which the Commission has issued immediately effective orders against other licensees, and subsequently if staff certifies that those short-term actions have been completed to its satisfaction, the Commission will issue an order within 35 days after such certification deciding whether the provision of this order requiring the licensee to remain shut down shall remain immediately effective. Any motions relating to the lifting of immediate effectiveness must be received by the Secretary of the Commission within 10 days of issuance of the certification, and any responses to such motions must be received by the Secretary 7 days later. The Commission shall issue an order lifting immediate effectiveness if it determines that the public health, safety or interest no longer require immediate effectiveness. The Commission's decision on that question shall not affect its direct appellate review of the merits of the Board's decision.

VII.

By September 4, 1979, the licensee may file a written answer to this Order and any person whose interest may be affected by this proceeding may file a written petition to intervene. Petitions for leave to intervene must be filed in accordance with the Commission's Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a petition for leave to intervene is filed by the above date, the Atomic Safety and Licensing Board established by this Order will rule on the petition and issue an appropriate further order. An

order wholly denying a petition for leave to intervene shall be appealable by the petitioner to the Commission itself within ten days after service of the order. An order granting a petition for leave to intervene shall be appealable to the Commission itself by a party other than the petitioner on the question of whether the petition should have been wholly denied.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors:

- (1) the nature of the petitioner's right under the Atomic Energy Act to be made a party to the proceeding;
- (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and
- (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest.

The petition should identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene.

Not later than fifteen days prior to the first prehearing conference scheduled in the proceeding, the petitioner shall file a supplement to the petition to intervene which must include a list of contentions which are sought to be litigated in the matter, and the bases for each concern set forth with reasonable specificity. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

An answer to this Order or petition for leave to intervene should be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Section, or may be delivered to the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. by September 4, 1979. A copy of the petition should be sent to the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 and to Mr. George F. Trowbridge, Shaw, Pittman, Potts and Trowbridge, 1800 M Street, N.W., Washington, D.C. 20036, attorney for the licensee. Any questions or requests for additional information regarding the content of this Notice should be addressed to the Chief Hearing Counsel, Office of the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

Nontimely filings of petitions for leave to intervene, amended petitions or supplemental petitions will not be entertained absent a determination that the petitioner has made a substantial showing of good cause for the granting of a later petition. That determination will be based on a balancing of the factors specified in 10 CFR 2.714(a)(i)-(v) and 2.714(d).

VIII.

Copies of the following documents are available for inspection at the

Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. and are being placed in the Commission's local public document room at the State Library of Pennsylvania, Government Publications Section, Education Building, Commonwealth and Walnut Streets, Harrisburg, Pennsylvania 17126.

August 1 Commission Order

April 16 Ltr. Herbein to Denton (prior notice will be given before restart)

June 28 Ltr. Herbein to Denton (modifications to be completed before TMI-1 restart)

June 28 NRC Staff Meeting summary on TM-1 restart

NUREG-0578

I&E Bulletins 79-05A

79-05B

79-05C

FOR THE COMMISSION

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 9th day of August, 1979.

ATTACHMENT

Milestone	Time Consumed Days	Total Days Into Proceeding
Publication of Notice (Detailed Order)	0	0
Filing of Intervention Petitions	20	20
Answers to Petitions	15	35
Time for Amending Petitions and for Negotiations re Contentions	25	60
Time between filing Amended Petitions and Contentions and Special Prehearing Conference	15	75
Publication of Special Prehearing Conference Order (Discovery begins)	5	80
Discovery completed	60	140
During discovery period:		
- Objections to Special Prehearing Conference Order 10 days		
- Possible further refinement of contentions		
Prehearing Conference	—	140
Prehearing Conference Order	5	145
Filing of Testimony	20	165
(Assumes objections to prehear- ing Conference Order filed simultaneously)		
Begin Hearings	15	180
Complete Hearings	60	240
Filing of Proposed Findings	40	280
Reply to Proposed Findings	10	290
Decision by Board	45	335

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.**

**Docket Nos. 50-443
50-444**

**(Seabrook Station,
Units 1 and 2)**

August 6, 1979

The Appeal Board denies applicants' motion for summary disposition on the issue of an alternate site for the Seabrook facility and dismisses the issue as moot.

RULES OF PRACTICE: MOTION FOR SUMMARY DISPOSITION

Summary disposition of an issue may not properly be sought on the basis of evidence adduced on that issue at a hearing in the same proceeding. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-554, 10 NRC 15 (1979).

NEPA: INDEPENDENT INQUIRY BY FEDERAL AGENCY

Independent responsibilities have been vested in this Commission and its adjudicatory boards by the National Environmental Policy Act. Whether or not the parties to a particular licensing proceeding may agree that none of the alternatives to the proposal under consideration is preferable on a NEPA cost/benefit balance, it remains the Commission's obligation to satisfy itself (*if necessary to the disposition of the proceeding*) that that is so.

**Messrs. John A. Ritscher, Thomas G. Dignan, Jr., and
Robert K. Gad, III**, Boston, Massachusetts, for the
applicants, Public Service Company of New Hampshire,
et al.

Mr. Robert A. Backus, Manchester, New Hampshire,
for the intervenor, Seacoast Anti-Pollution League.

Mr. Lawrence Brenner for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

In ALAB-548, 9 NRC 640 (May 14, 1979), we took note of the decision of the Court of Appeals for the First Circuit in *Seacoast Anti-Pollution League v. Costle*, F.2d (No. 78-1339, decided May 2, 1979). The court of appeals there upheld the determination last summer of the Administrator of the Environmental Protection Agency that a nuclear facility on the Seabrook site would not require cooling towers; *i.e.*, that the once-through cooling system proposed by the applicants would be acceptable. Because of this development, we tentatively concluded that there was no necessity to continue to move forward with our then pending inquiry into whether there is an alternate site for a nuclear facility anywhere in New England which would be "obviously superior" to the Seabrook site were cooling towers to be needed in conjunction with such a facility at Seabrook.¹ Rather, we said,

our present intention is to suspend forthwith any further consideration of the alternate site issue. In the event that Supreme Court review of the First Circuit's decision in the EPA proceeding either is not sought or is denied, we would then issue an order terminating the exploration of that issue on the ground of mootness. On the other hand, should there be a grant of certiorari, we would resume our deliberations and hand down a decision as expeditiously as possible.

9 NRC at 642-643.

Acknowledging that this course might not meet with the approval of all of the parties, we invited the filing of objections to it. That invitation prompted the submission of a memorandum by the applicants. The staff (but not the intervenor Seacoast Anti-Pollution League (SAPL)) filed a response to that memorandum.

A. The applicants' memorandum was filed contemporaneously with a motion for summary disposition on the alternate site issue. Taken together, the two documents put forth the following line of argument: In *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87, 95-96 (1978), the First Circuit had specifically approved the Commission's ruling in this case² that, "in comparing construction costs of the proposed site and at alternate sites,

¹ As indicated in ALAB-548, prior to May 2, we had completed a three-day evidentiary hearing on that issue and had received the post-hearing submissions of the respective parties. Our independent review of the full record was in progress when the First Circuit's decision was brought to our attention.

² CLI-77-8, 5 NRC 503, 532 (1977).

actual completion costs should be used." Intervenor SAPL thereafter had conceded, in advance of the commencement of the evidentiary hearing we conducted in January on the alternate site issue, that Seabrook with cooling towers would prevail over any alternate site unless the First Circuit were to reconsider and withdraw its approval of the "completion cost" standard. SAPL had requested the court of appeals to take precisely that action in connection with its review of a June 1978 Commission decision.³ But the court (in the course of affirming the decision) left the "completion cost" standard intact. *Seacoast Anti-Pollution League v. NRC*, ___ F.2d ___, ___ n. 10 (No. 78-1172, decided May 30, 1979). Thus, according to the applicants, by virtue of SAPL's own concession the alternate site issue is now susceptible of disposition in the applicants' favor without regard to the disclosures in the record of last January's evidentiary hearing.⁴

We cannot endorse this approach. It does not perforce follow that, because "all parties concede that no site is obviously superior to Seabrook with cooling towers if 'sunk costs' are counted, . . . there is no longer any necessity for this Board to resolve any factual issues arising from the evidentiary hearing . . ."⁵ What the applicants' thesis appears to overlook is the fact that *independent* responsibilities have been vested in this Commission and its adjudicatory boards by the National Environmental Policy Act. Whether or not the parties to a particular licensing proceeding may agree that none of the alternatives to the proposal under consideration is preferable on a NEPA cost/benefit balance, it remains the Commission's obligation to satisfy itself (*if necessary to the disposition of the proceeding*) that that is so. Although not directly addressing the point, the staff may have had it in mind. For, in its answer to the applicants' submissions,⁶ it stresses that, all of the evidence having already been adduced, we could dispose of the alternate site issue favorably to the applicant "on the basis of a preponderance of [that] evidence, without having to find that [because of the SAPL concession] there is no genuine issue of material fact to be heard."

The staff may well be right. But the question persists: what advantage would be now served by expending the time and effort necessary to complete our scrutiny of the evidentiary record and to translate the results of the scrutiny into written findings? Neither the applicants nor the staff dispute that, absent a Supreme Court reversal of the First Circuit's May 2 decision

³ CLI-78-14, 7 NRC 952. In that decision, the Commission had, *inter alia*, terminated the comparison which it had earlier directed be made between certain alternate sites in southern New England and Seabrook with *once-through* cooling.

⁴ As we recently observed, summary disposition of an issue may not properly be sought on the basis of evidence adduced on that issue at a hearing in the same proceeding. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-554, 10 NRC (July 6, 1979).

⁵ Applicants' memorandum in response to ALAB-548, dated June 6, 1979, at p. 3.

⁶ Letter of July 2, 1979 from staff counsel to the members of this Board, at pp. 1-2.

upholding the EPA approval of the proposed once-through cooling system for Seabrook, it is at present wholly academic how the Seabrook site with cooling towers might compare with any alternate site. Both of those parties allude, however, to the possibility that, at some future date, EPA might order (upon its further examination of the effects of once-through cooling upon the marine environment in the area of the facility) the installation of cooling towers.

We referred to that possibility ourselves in ALAB-548 and suggested that is provided insufficient cause to decide the alternate site issue at this juncture. Our reasoning was that:

Were the Administrator on such reexamination to conclude that cooling towers must be installed, this Commission might be called upon to reinstate the alternate site inquiry. That inquiry would, of course, take place in a quite different setting. More particularly, the balancing of the Seabrook site with towers against alternate sites would have to take into account, *inter alia*, the status then of both the Seabrook facility (which likely would be substantially completed if not already in operation) and the alternate sites (which might well have become dedicated to other uses). To the extent, however, that they had not been overtaken by changed circumstances, the disclosures in the present record—together with the parties' commentaries on those disclosures—could still be put to useful purpose. For even though consideration of the alternate site issue may go no further at this juncture, the record which has been developed will be preserved for such future use as might be appropriate.

9 NRC at 642-643.

The papers of the applicants and the staff do not bring to light any flaw in that reasoning or the conclusion which we derived from it. And, upon reexamination of the matter on our own initiative, we continue unpersuaded that the contingency of an EPA change in position (many years hence) is *per se* a weighty enough consideration to warrant our determining—in abbreviated form or otherwise⁷—an issue which has been stripped of any current significance by recent judicial action.

B. We thus adhere to the course announced in ALAB-548. And the time has come to follow that course to its terminal point. The 90 day period within which to file a petition for a writ of certiorari from the May 2 decision of the First Circuit in the EPA proceeding⁸ has now expired. Neither a petition nor

⁷ In an endeavor to entice us into making the requested finding (albeit on the evidentiary record rather than by summary disposition), the staff suggests that this Board's "decision can be greatly abbreviated if it considers sunk costs in light of the views of the intervenors . . . that if sunk costs are counted there would be no justification for choosing an alternate site to Seabrook with cooling towers." July 2 letter, fn. 6 *supra*, at p. 2. We do not pause to consider whether, and if so to what extent, this might be true.

⁸ See 28 U.S.C. 2101(c).

an application for an extension of time⁹ was filed with the Supreme Court on or before the expiration date. Thus, the May 2 decision has become final and it is now appropriate to terminate the exploration of the alternate site issue on the ground of mootness.

The applicants' motion for summary disposition is *denied* and the alternate site issue is *dismissed* as moot.¹⁰

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁹ A Supreme Court justice may, for good cause shown, extend the time for the filing of a certiorari petition for a period not exceeding 60 days. *Ibid.*

¹⁰ All that is left before us is the generic radon issue which we were directed by the Commission to consider in this and a number of other proceedings. See ALAB-480, 7 NRC 796 (1978).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck

In the Matter of Docket Nos. STN 50-518
50-519
TENNESSEE VALLEY AUTHORITY 50-520
50-521
(Hartsville Nuclear Plant,
Units 1A, 2A, 1B, and 2B) August 14, 1979

The Appeal Board directs that the construction permits for the plant be modified to reflect the terms of a stipulation by the parties on a plan for monitoring the impact of discharge diffuser construction on an endangered specie of mussels, and grants judgment to the applicant on the issue.

Messrs. Herbert J. Sanger, Jr., General Counsel,
Lewis E. Wallace, Deputy General Counsel, **Alvin H. Gutterman** and **W. Walter LaRoche,** Knoxville, Tennessee, for the Tennessee Valley Authority, applicant.

Messrs. Leroy J. Ellis, III, and **Robert B. Pyle,** Nashville, Tennessee, for William N. Young, *et al.*, intervenors.

Messrs. William D. Paton and **L. Dow Davis** for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Our decision last month in this construction permit proceeding¹ called upon the applicant and the NRC staff to file supplemental memoranda addressed to a question raised by the intervenors William N. Young, *et al.*, on their appeal from the Licensing Board's approval² of the construction of the facility's discharge diffuser at a specific proposed location upstream from a bed of an endangered specie of mussels.³ The question related to a plan, agreed

¹ ALAB-554, 10 NRC 15 (July 11, 1979).

² LBP-78-35, 8 NRC 513 (1978).

³ *Lampsilis orbiculata*, commonly known as the pink mucket pearly mussel.

to by the parties below, for monitoring the impact upon the mussels of diffuser construction. With one modification, that plan had been approved by the Board and its text set forth in an attachment to the Board's decision. LBP-78-35, *supra* fn. 2, 8 NRC at 517, 523-26.⁴ Notwithstanding their prior acceptance of the plan, the intervenors insisted before us that it should be further modified to provide assurance that dredging activities in the course of diffuser construction would not result in the deposition on the mussel bed of sediment of more than 1/4 inch in thickness.

In lieu of submitting a memorandum on the appropriateness of the adoption of this "1/4-inch aggregate deposition standard," the staff has supplied us with a stipulation which has been executed by counsel for all of the parties to the proceeding. The stipulation calls for significant additions to that portion of the monitoring plan approved by the Licensing Board which is captioned *Diffuser Excavation Period*. See LBP-78-35, *supra*, 8 NRC at 525-26.

On an examination of the proposed revision, we conclude that it constitutes a satisfactory resolution of the issue of the effects of diffuser construction activities on the mussels. Accordingly, we hereby direct that the Hartsville construction permits be amended to reflect that revision⁵ and, on this basis, *grant* judgment to the applicant on the issue.⁶ In doing so, we bring to an end our appellate review in this proceeding except for the generic radon matter which still remains open. See ALAB-554, *supra* fn. 1, 10 NRC at 16, fn. 2.⁷

It is so ORDERED.

FOR THE APPEAL BOARD

Deborah V. Pulley
Secretary to the Appeal Board

⁴ The staff was directed to incorporate the substance of the plan in the Hartsville construction permits. 8 NRC at 523.

⁵ The text of the *Diffuser Excavation Period* portion of the monitoring plan, as thus revised, is set forth in an appendix to this opinion.

⁶ In ALAB-554, *supra* fn. 1, we entered judgment in the applicant's favor on the issue, also raised by the intervenors' appeal, of operational effects on the mussels.

⁷ Any question relating to an alternative downstream location for the discharge diffuser is now moot.

ATTACHMENT APPENDIX

As provided in the foregoing opinion, and in accordance with the stipulation of the parties, the Diffuser Excavation Period portion of the monitoring plan to be employed in connection with discharge diffuser construction (see 8 NRC at 525-26) is amended to read as follows:

Diffuser Excavation Period

1. Prior to initiation of the dredging activity, the Permittee shall give three weeks written notice of the planned construction schedule to the NRC Staff, the Intervenor, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, and the State of Tennessee.
2. Sedimentation traps will continue to be placed at the same stations used in the prediffuser excavation period. The traps will be returned twice per 8-hour dredging crew working shift (once after 4 hours and once after 8 hours) during excavation of approximately the first 1,000 cubic yards of material. Additional sedimentation traps will be placed at the same stations to provide a measure of the aggregate (total) deposition of silt which results from the construction activity during the excavation period. Applicant will determine the depth of sediment deposited in the traps. If one-quarter inch or more aggregate sediment is found to have been deposited in at least two sample traps, dredging will be stopped. Dredging may be resumed if later observation of sediment traps shows that the aggregate sediment deposition has been reduced to less than one-quarter inch. Before using any artificial means to remove the sediment, Applicant will obtain the concurrence of the Department of Interior.
3. Turbidity levels of the river above and below the dredging activities will be measured at 1-meter depth intervals from surface to the bottom and averaged over the water column to document changes in natural turbidity levels resulting from these activities. Samples will be taken hourly during excavation. Natural turbidity levels of record as defined in the Hartsville Nuclear Plant's ER will be the feedback criteria for regulating the rate of in-stream dredging. Maximum documented levels of turbidity are 85 ppm (JTU).
4. Measurement of light intensity in the water column will be performed with a submarine photometer both above and below the dredging activities. Measurements will be made hourly during excavation. A 50 percent reduction in the depth of 0.1 percent of the light transmission at some selected point at the mussel bed relative to an upstream location (above the dredging activities) will be the feedback criteria for instituting corrective mitigative actions.
5. Should the aggregate silt deposition or turbidity levels or light penetration data indicate a need for mitigative action, the inspector will

report his findings and make his recommendation to the project environmental engineer, who will present these findings and recommendations to the project manager. The project manager will make the decision on the mitigative actions to be taken, i.e., to slow down or halt construction.

6. Dissolved oxygen, pH conductivity, and temperature profiles will be made at upstream and downstream locations to document any perturbations of these parameters.
7. During blasting activities, mussels will be placed by scuba divers at established intervals from the area of the blasting to determine if mussels on the Dixon Island bed are harmed by shock waves from these activities. No threatened or endangered species will be used.
8. Within 30 days after completion of the dredging activity, the Permittee shall submit to the NRC Staff a summary report of the results of the monitoring plan with copies to the Intervenors, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, and the State of Tennessee.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

**Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar**

In the Matter of

**PUGET SOUND POWER AND
LIGHT COMPANY, et al.**

**Docket Nos. STN 50-522
STN 50-523**

**(Skagit Nuclear Power Project,
Units 1 and 2)**

August 31, 1979

The Appeal Board, with one member dissenting in part, affirms the Licensing Board's Order (LBP-79-16) denying the late intervention petition of three Indian tribes.

**RULES OF PRACTICE: NON-TIMELY INTERVENTION
PETITIONS**

Although the Indians occupy a special status *vis a vis* the United States, that relationship does not give them a license to sleep on their intervention rights over a protracted period.

**RULES OF PRACTICE: NON-TIMELY INTERVENTION
PETITIONS**

Petitioners for intervention who inexcusably miss the filing deadline by not merely months, but by several years, have an enormously heavy burden to meet.

**RULES OF PRACTICE: NON-TIMELY INTERVENTION
PETITIONS**

The promiscuous grant of intervention petitions inexcusably filed long after the prescribed deadline would pose a clear and unacceptable threat to the integrity of the entire adjudicatory process.

RULES OF PRACTICE: NON-TIMELY INTERVENTION PETITIONS

Although Section 2.714(a) of the Rules of Practice may not shut the door firmly against unjustifiably late petitions, it reflects the expectation that, absent demonstrable good cause for not doing so, an individual interested in the outcome of a particular proceeding will act to protect his interest within the established time limits.

Mr. Russell W. Busch, Seattle, Washington, for the Upper Skagit Indian Tribe and the Sauk-Suiattle Indian Tribe, and **Mr. Donald S. Means**, LaConner, Washington, for the Swinomish Tribal Community, appellants.

Messrs. F. Theodore Thomsen and Douglas L. Little, Seattle, Washington, for the appellees, Puget Sound Power and Light Company, *et al.*

Messrs. Richard L. Black and Daniel T. Swanson for the Nuclear Regulatory Commission staff.

DECISION

In ALAB-552, 10 NRC 1 (July 9, 1979), we considered preliminarily the appeal of three Indian tribes from the June 1, 1979 order of the Licensing Board denying their extremely tardy petition for leave to intervene in this construction permit proceeding involving the proposed Skagit nuclear facility.¹ Our focus was upon one of the several factors which 10 CFR 2.714(a) requires be applied in determining whether late intervention should be allowed: the sufficiency of the justification tendered by the tribes for their failure to have filed their petition on time. As we explained, it was appropriate to consider this factor at the threshold in light of our holding in prior cases that the substantiality of the excuse for lateness has a strong bearing on the showing which must be made by the tardy petitioner on the other factors enumerated in Section 2.714(a). See ALAB-552, 10 NRC at 5. In this connection, we observed:

In the instance of a very late petition, the strength or weakness of the tendered justification may thus prove crucial. For, obviously, the greater the tardiness the greater the likelihood that the addition of a new party will

¹LBP-79-16, 9 NRC 711. As noted in ALAB-552, the Licensing Board had initially granted the petition. LBP-78-38, 8 NRC 587 (1978). On the applicants' appeal, however, we had vacated that grant and remanded the matter for further consideration. Unpublished order of January 12, 1979, explained in ALAB-523, 9 NRC 58 (1979).

delay the proceeding—e.g., by occasioning the relitigation of issues already tried. Although the delay factor may not be conclusive, it is an especially weighty one. *Project Management Corporation*. (Clinch River Breeder Reactor Plant), ALAB-354, 4 NRC 383, 394-95 (1976).

Id. at 715 (footnotes omitted).²

A close look at the first two of the explanations given for the belated filing persuaded us that neither was meritorious. *Id.* at 715-717.³ What that left was the tribes' remaining claim which, as we understand it, came down to this:

Although in January 1975, they were fully aware of the proposal to build the Skagit facility in the vicinity of their fishery and community, they did not have at their disposal sufficient information on which to form an independent judgment respecting whether its construction and operation would adversely affect their interests. Rather than make their own endeavor to acquire such information, they chose to rely, as they assertedly were entitled to, upon the expressed opinion of both [the Department of the] Interior and the NRC staff that the aquatic and socioeconomic effects would be insignificant. As a consequence of such reliance, they neither sought to intervene in the proceeding themselves nor (apparently) specifically requested Interior to do so on their behalf. At some point in 1977, however, they became concerned that in reality their interests might be harmed by the proposed facility and then asked Interior "to consider the possibility of United States intervention" as their trustee. Only after Interior indicated that it would not pursue that course did they seek for the first time to look into the matter of intervention themselves.

ALAB-522, 10 NRC at 5.

We determined, however, that the record before us did not permit acceptance of that thesis. Noting that, from all that appeared, both Interior and the NRC staff had concluded after an actively pursued investigation that tribal interests would not be significantly affected by the construction and operation of the facility (and still adhered to that conclusion) we offered this analysis:

² We took note of the fact that, by the time the Licensing Board had its initial opportunity to consider the tribes' petition (which had been filed almost three and a half years after the prescribed deadline), extensive evidentiary hearings had already been conducted. Two of the three issues which the tribes now seek to litigate were treated during the course of those hearings. See ALAB-552, 10 NRC at 5, fn. 9.

³ In essence, those explanations were: (1) that the tribes' treaty fishing rights were first adjudicated in a case decided in their favor by a Federal district court in 1974 and the court of appeals in the following year; and (2) that the tribes were preoccupied with other matters. We need not here repeat the reasons why we found both of them to be insubstantial. Suffice it to say that further reflection has not led a majority of this Board to the same conclusion now reached by Mr. Farrar (see pp. 178-180, *infra*; viz., that there is at least some merit to the explanations. .

Neither the NRC nor Interior purported to guarantee the correctness of their ultimate conclusions regarding impact upon the tribes. And our examination of the relevant jurisprudence discloses no basis upon which such a warranty might be implied as a matter of law. Thus, it is not enough for the tribes simply to assert that they were lulled into a false sense of security by the appraisals of impact given them by Interior or reflected in the FES⁴ prepared by the NRC staff. What the tribes must additionally establish is that, whether because of inadequate investigation on the part of the Federal agency or for some other reason, they were furnished erroneous information on matters of basic fact and that it was reliance upon that information which prompted their own inaction prior to June 1978.

We find that, to this point at least, no such showing has been attempted. More specifically, the tribes have not endeavored to explain the respect(s) in which the NRC staff, Interior, or other Federal agencies misrepresented any fact (then known or ascertainable) which had a possible bearing upon the Skagit facility and the likely effects on its construction and operation upon tribal interests. Nor have we been pointed to any known or ascertainable material fact *not* disclosed by the agency which, had it been disclosed, might have induced the tribes to seek intervention at an earlier time.

Beyond these deficiencies, the tribes' papers do not present a clear picture as to precisely when, and by what means, they discovered (if they did) that a misrepresentation or non-disclosure of a material fact had occurred (and what it was). Needless to say, the time element assumes crucial importance in judging whether the tribes were justified in not merely failing to meet the January, 1975 filing deadline, but waiting until June, 1978 before seeking to intervene. If, for example, they had first become aware in 1976 that the factual information made available to them by Federal agencies might be materially inaccurate, there would remain the question why they had not then undertaken to assert their interests.

Id. at 9, 10.

As a matter of discretion, we decided to provide the tribes with an opportunity to fill these gaps in a supplemental memorandum. In doing so, we stressed that

in the instance of an asserted reliance on an erroneous statement of material fact, the memorandum should specify (1) where that statement appeared; and (2) when, and through what source, the tribes first learned that the statement was likely or possibly in error. If the claim is that there was a failure on the part of a Federal agency to disclose to the tribes a

⁴ Final Environmental Statement.

germane fact which either was or should have been known to that agency, and memorandum should similarly specify (1) the nature of that fact; and (2) when, and through what source, the fact first came to the tribes' attention.

Id. at 10, fn. 20.

That memorandum, and the responses of the applicants and the staff to it, have been submitted. Consequently, we are now in a position both to complete our appraisal of the adequacy of the tribes' lateness excuse and, upon a consideration of their showing on the other Section 2.714(a) factors in the light of that appraisal, to decide the appeal before us.

A. At an early point in their supplemental memorandum (pp. 2-3), the tribes explicitly disavow agreement with the analysis contained in ALAB-552 and take pains to inform us that the memorandum was being submitted simply "to insure any required exhaustion of administrative remedies." An examination of the balance of the submission illumines the reason why they were constrained to take this approach. In a nutshell, the memorandum does not disclose either the misrepresentation or non-disclosure by the NRC staff, the Department of the Interior, or any other Federal agency of a fact material to the assessment of the likely effects of the construction and operation of the Skagit facility upon tribal interests.

1. One of the concerns expressed in the tribes' intervention petition related to the possible unique genetic impact of plant radiation upon them due to their assertedly greater exposure risk and higher than average rate of intermarriage. See ALAB-552, 10 NRC at 3. We are referred to statements in the staff's FES (at pp. 5-15, 7-2 and 10-2) to the effect that "[e]ffluents from plant operation will . . . be an extremely minor contributor to the radiation dose that persons living in the area normally receive from background radiation"; that "[i]t is concluded . . . that the environmental risks due to postulated radiological accidents are exceedingly small and need not be considered further"; and that "[t]he staff does not believe that any adverse radiological effects will occur since the radioactive effluents from the plant will be less than proposed Appendix I design objectives." The tribes insist⁵ that, "[w]ithout an evaluation of the genetic and somatic susceptibility of Indian receptors," those conclusions were "judgmental and unsupported."

Whether or not that might be so, the fact remains that nothing in the FES gave the tribes the slightest cause to think that such an evaluation might have been undertaken in connection with the preparation of that document. Stated otherwise, although the tribes may believe there to have been warrant to look into the possibility that the plant's radiation releases might have an unusual

⁵ Supplemental memorandum, p. 5.

genetic or somatic impact upon Indian receptors,⁶ there is no room for any claim that they had been misled by the FES into believing that the staff had shared that view and, accordingly, had done so. It follows that none of the FES statements in question can serve to explain satisfactorily the interval between the issuance in May 1975 of the document and the filing three years later of the tribes' intervention petition in which the concern regarding Indian receptors was first raised.

2. The second concern advanced in the tribes' petition related to the socio-economic impact which the plant might have on Indian communities. See ALAB-552, 10 NRC at 3. On this score as well, the tribes point an accusing finger at the FES—more particularly, the statement (at p. 4-13) that

The staff concluded that the applicant has properly identified the potential social and economic impacts of plant construction, that these impacts will be small, and that the applicant has taken adequate measures in collaboration with the local government authorities to mitigate them.

We are told that this statement "is clearly erroneous with respect to the Tribes, as there was no identification of impacts upon them or their members, nor were any mitigation measures indicated." Supplemental memorandum, p. 5.

The staff's rejoinder (at p. 4 of its response) is that the FES reveals that an evaluation had been made of the socio-economic impact upon the communities surrounding the facility which would attend upon both construction activities and plant operation.⁷ The staff acknowledges that the assessment had been in terms of "the population in general" and had not singled out for special evaluation "a unique segment of that population, e.g. the Indians." It stresses, however, that the tribes have not identified the respects in which either (1) the stated conclusions were false or misleading or (2) the tribes had relied upon them to their detriment.

We need not pass judgment here on whether the staff correctly concluded that the socio-economic impacts upon the general population are small and that sufficient measures to mitigate them have been taken. Nor need we decide whether there is substance to the tribes' apparent belief that their members should not have been lumped together with other segments of the population in making the assessment. Be all that as it may, the pivotal consideration is that, insofar as appears from the tribes' filing, the staff neither misrepresented nor withheld any material fact pertaining to the scope or the fruits of its inquiry into socio-economic impacts. If the tribes thought that inquiry to have been incomplete because of its failure to have focused specifically upon tribal communities—and that as a consequence the staff conclusion on socio-economic impacts was not worthy of acceptance—they could have promptly

⁶ Even today, that seemingly remains a mere possibility. See p. 171, *infra*. In its response to the tribes' supplemental memorandum (at p. 3), the staff states that it now has the subject under study and, when completed, will make public its analysis and conclusions.

⁷ It cites Sections 4.5 and 5.6 in support of this assertion.

sought to intervene in the proceeding to make precisely that point. Instead, to repeat, they maintained their silence for several years, to a time beyond which the evidentiary hearing on this phase of the proceeding had been completed.

3. What has been said above applies equally to the tribes' third concern—the possible effects of various plant components and of construction work on the Skagit River environment and fish population. See ALAB-552, 10 NRC at 3. The tribes' supplemental memorandum rehearses their previous assertion that they had been left with the erroneous impression by both the FES and a Department of the Interior letter⁸ that the construction and operation of the Skagit facility would have a minimal adverse effect upon Skagit River resources. In common with their previous filings, however, the memorandum is singularly devoid of a citation to anything in either the FES or the Interior letter which conceivably might have misled them respecting a known or ascertainable fact relevant to the possible impact of the plant upon their fisheries. Once again, what is involved is simply their disagreement with the ultimate conclusion reached by the NRC staff and Interior—a disagreement which the tribes did not seek to inject into the licensing proceeding until long after the conclusion had been made public and they had become aware of it.

It is readily apparent from the foregoing that, in order to find that the tribes' extreme tardiness in seeking intervention was justified, we would have to accept their implicit (if not explicit) invitation to repudiate the views expressed by us in ALAB-552. See pp. 164, 165, *supra*. We decline that invitation. It seems just as manifest to us today as it did last month that *no* person potentially affected by the construction or operation of a proposed nuclear facility is entitled to pursue the course followed by the tribes in this instance.

The short of the matter is that the tribes do not deny that they were aware of the Skagit proposal when it was noticed for hearing at the end of 1974. They likewise knew or should have known no later than mid-1975 of the ultimate conclusions which the NRC staff's environmental review had produced. Notwithstanding the absence of any misrepresentation or non-disclosure by the staff of a fact crucial to an informed appraisal of the merit of those conclusions, another three years elapsed before the tribes sought to intervene in the licensing proceeding for the purpose of bringing the conclusions into question. This state of affairs would scarcely be countenanced in the instance of an intervention petitioner not occupying a special status *vis a vis* the United States. Although, as they have consistently stressed, the tribes do occupy such

⁸ See ALAB-552, 10 NRC at 7.

a status, we neither have been referred to nor have discovered on our own anything in the trustee relationship which might be thought to give them greater license to sleep on their rights over a protracted period.⁹

B. Against the background of our conclusion that the tribes have not established the existence of good cause for their lengthy delay in seeking intervention, we turn now to the other four factors enumerated in 10 CFR 2.714(a):

- (ii) The availability of other means whereby the petitioner's interest will be protected.
- (iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (iv) The extent to which the petitioner's interest will be represented by existing parties.
- (v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.¹⁰

More particularly, what must be decided is whether, notwithstanding the insubstantiality of the excuses offered for their extended period of inaction, the tribes' showing on those other factors is so compelling as to require a reversal of the result reached by the Board below.

1. There is sharp disagreement between the Licensing Board and the tribes respecting the availability of other means by which the tribes might protect the interests which they now seek to vindicate in this proceeding. The disagreement centers principally upon whether, as the Licensing Board suggested,¹¹ the tribes (1) might have asserted at least some of their concerns in certain earlier state and local site certification, NPDES¹² and zoning proceedings; (2) could now advance their "interest in radiation standards" by way of a request for rulemaking; and (3) may enforce in an independent judicial action their treaty fishing rights.

⁹ We reject the tribes' suggestion (supplemental memorandum, p. 2) that, even if none of their various assigned reasons for being late might be of itself sufficient, taken together those reasons "have the cumulative effect of excusing tardiness." In order to be accorded such effect, the offered explanations would have to possess at least marginal individual merit. We have found, instead, that each is wholly untenable.

¹⁰ Section 2.714(a) also calls for examination of three additional factors set forth in Section 2.14(d), which must be considered by licensing boards in passing upon *all* intervention petitions—whether timely filed or not. But these factors will rarely, if ever, be determinative on the question of whether an untimely intervention petition should be granted notwithstanding its tardiness. This is because they relate essentially to the matter of standing to intervene; *viz.*, the nature of petitioners' statutory right to be made a party to the proceeding; the nature and extent of his interest in the proceeding; and the possible effect of the outcome of the proceeding on that interest. In this instance, the tribes' standing is clear; thus, the focus of all of the parties in their briefs below and to us was understandably on the five Section 2.714(a) factors which bear importantly and exclusively upon the grant or denial of late petitions.

¹¹ LBP-79-16, *supra*, 9 NRC 715-717.

¹² National Pollution Discharge Elimination System.

The record at hand leaves us unclear as to the extent, if any, to which the tribes can be properly faulted for not pursuing their interests in the state and local proceedings cited by the Board. As we see it, however, the question is not whether at some time in the past other forums might have been available to the tribes; rather, it is whether there are *now* alternative means by which the identified tribal interests “*will* be protected.” On this score, we cannot concur in the Licensing Board’s view that the tribes might seek to have their radiation effects concern taken up in a rulemaking proceeding. For, if we understand the tribes correctly, they are not challenging existing generic radiation protection standards, but, instead, are claiming that those standards may not have been correctly applied to the allegedly unique circumstances obtaining in the case of their members. And, insofar as the existence of an independent judicial remedy to enforce treaty rights is concerned, the tribes might well be confronted with a reluctance on the part of a Federal district court to delve into the issue of the possible impact of the facility upon Skagit River fisheries, given the fact that that issue is one of the central questions being explored in this licensing proceeding. Beyond that, the rights conferred upon the tribes by treaty relate to fishing activities alone; thus, it likely would not be open to the court to adjudicate the other concerns which the tribes now wish to litigate in this proceeding.

If, then, there may not be sufficient alternative means by which the tribes can themselves adequately protect their interest, is that interest being acceptably represented by the existing parties to the proceeding? With regard to the fisheries and socio-economic impact issues, the Licensing Board noted the existence of an “obvious community of interests” between the tribes and the intervenor Skagitonians Concerned About Nuclear Power (SCANP) and that those interests have been prosecuted by SCANP through the introduction of its own affirmative evidence and the extensive cross-examination of the witnesses for the applicant and the staff. 9 NRC at 719, 720. In reply, the tribes dispute that SCANP has either “the resources or the expertise” to represent their particular interest and further maintain that that intervenor has not done so in the past. They also point to the Board’s acknowledgement that the radiation impact issue raised by them “would not rise as a major point of concern in the proceeding if the Indians did not become a party.” 9 NRC at 719, 720.¹³

It does seem reasonably apparent that, in a broad sense at least, the interest of SCANP and its members in the potential effect of the proposed facility upon the Skagit River and the surrounding communities is akin to that of other persons who reside in the area and may depend upon river resources for

¹³ The Licensing Board seemingly attached little significance to this acknowledgement because of its belief that, as framed by the tribes, the radiation impact issue is not cognizable in this licensing proceeding but is an appropriate subject for a generic rule making proceeding. See 9 NRC at 720. As earlier indicated (see p. 169, *supra*), we do not share that belief.

their livelihood. What is less certain is the extent to which, because of their assertedly unique situation, the tribes may have legitimate concerns on that score which either are not fully shared by the existing parties or have not been adequately addressed in the extensive evidentiary hearings already held on the environmental aspects of plant construction and operation. The most that can be said with any degree of confidence is that, as indeed all concede, SCANP has no discernible interest in the question whether radiation releases pose an unusual health risk to Indian receptors and that that question has not received attention in the hearings conducted to date.

2. The tribes also attack the Licensing Board's conclusion that "the extent to which the record would be improved if the [tribes] were allowed to intervene is problematical" 9 NRC at 718. They stress that the list of prospective witnesses which they supplied to the Board included experts in various disciplines relevant to the issues they seek to litigate and, further, that they have received several monetary grants (including one in the amount of approximately \$50,000 from the Department of the Interior) to conduct or complete fisheries, health, and socio-economic evaluations.

Past experience teaches that predictions on the ability of a prospective late intervenor to make a substantial contribution to the development of a sound record often rest upon little more than rank speculation. And so it is here. The tribes' participation in this proceeding might well be expected to shed light upon the respects, if any, in which the life styles or activities of their members might differ significantly from those of the general population in the vicinity of the proposed facility. But it is wholly conjectural whether they will be able, either through expert testimony or the results of the studies said now to be underway, to improve materially upon the record already adduced on the environmental effects of plant construction and operation. In this connection, the tribes' intervention petition—filed little more than a year ago—asserted (at p. 21) that the Upper Skagit Tribe was then "engaged in the design and *initial* phases of a study to determine the degree of intermarriage and the frequency with which recessive genes are manifested in the tribal population" (emphasis supplied). Even if that study is now well along the road to completion (and we have not been told that it is), it seems highly unlikely that the tribes are as yet in a position to supply any hard evidence bearing upon their hypothesis that "through exposure to radiation releases in the area a higher rate of birth defects may become apparent in the Indian population" (*ibid.*).

3. We agree with the Board below¹⁴ that the proceeding would be inevitably delayed were the now-completed environmental phase of the hearings to be reopened to allow the Indians both to relitigate two of the issues already fully tried and to raise a new one. True, the delay factor would not

¹⁴ 9 NRC at 720.

have loomed as large had the tribes been permitted to intervene immediately upon the filing of their petition in June 1978. But, contrary to their possible belief, we think it appropriate to apply that factor on the basis of the effect of a grant of intervention today, rather than 14 months ago. A person who endeavors to enter a proceeding three and a half years after the deadline for intervention petitions has no right to expect that his entitlement to do so will go unchallenged; rather, he has every reason to assume that one or more of the parties will both interpose and press a strenuous objection and that, before the matter is ultimately settled, the appellate process may be invoked. In this instance, regrettably, the controversy has taken an unusually long time to resolve—involving, as it has, two Licensing Board decisions and two appeals. But, although the second decision below might have been rendered more promptly,¹⁵ most of the interval between the filing of the petition and our action today may fairly be attributed to the difficulties inherent in the task of deciding whether a colorable basis exists for permitting an exceptionally tardy intervention.

C. On this analysis of all five Section 2.714(a) factors, we are constrained to conclude that the result reached by the Licensing Board should not be disturbed. To repeat, petitioners for intervention who inexcusably miss the filing deadline by not merely months, but by several years, have an enormously heavy burden to meet. This is particularly so where, as here, they call upon the Licensing Board to put aside the Commission's admonition that "[a] tardy petitioner with no good excuse may be required to take the proceeding as it finds it"¹⁶ and to allow them to traverse ground which has already been plowed (albeit not to their satisfaction). Even viewing the record in the light most favorable to the tribes, that burden has not been discharged by them. The most that can be said on their behalf is that (1) there may be no other effective means whereby they can now protect fully their interest; (2) that interest may not be adequately represented by the present parties to the proceeding; and (3) the possibility cannot be excluded that their participation might make some contribution to the development of a sound record. Whether taken singly or collectively, those considerations are, however, insufficient to overcome the high potential for delay which would attend upon a grant of intervention at this very late stage of an already protracted proceeding.

In this regard, we once again must record our belief that the promiscuous grant of intervention petitions inexcusably filed long after the prescribed deadline would pose a clear and unacceptable threat to the integrity of the entire adjudicatory process. See ALAB-552, *supra*, 10 NRC at 6-7, quoting

¹⁵ See ALAB-556, 10 NRC 30 (July 30, 1979).

¹⁶ *Nuclear Fuel Services, Inc. (West Valley Reprocessing Plant)*, CLI-75-4, 1 NRC 273, 276 (1975).

from *Duke Power Company*. (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-440, 6 NRC 642, 644 (1977). More specifically, persons potentially affected by the licensing action under scrutiny would be encouraged simply to sit back and observe the course of the proceeding from the sidelines unless and until they became persuaded that their interest was not being adequately represented by the existing parties and thus that their own active (if belated) involvement was required. No judicial tribunal would or could sanction such an approach and it is equally plain to us that it is wholly foreign to the contemplation of the hearing provisions of both the Atomic Energy Act¹⁷ and the Commission's regulations. Although Section 2.714(a) of the Rules of Practice may not shut the door firmly against unjustifiably late petitions, it assuredly does reflect the expectation that, absent demonstrable good cause for not doing so, an individual interested in the outcome of a particular proceeding will act to protect his interest within the established time limits.¹⁸

It need be added only that, in arriving at the foregoing conclusions, we have not overlooked the trustee relationship which obtains between the tribes and instrumentalities of the United States such as this Commission. Although not rendering the provisions of Section 2.714(a) inapplicable to the tribes,¹⁹ that relationship will, of course, have to be borne in mind by the Board when it embarks upon the discharge of its decisional responsibilities.

The June 1, 1979 order of the Licensing Board, LBP-79-16, is *affirmed*.
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

The opinion of Mr. Farrar, dissenting in part, follows, pp. 175-182, *infra*.

¹⁷ Section 189a., 42 U.S.C. 2239(a).

¹⁸ We have taken note, of course, of the two "compromise solutions" offered by Mr. Farrar (see pp. 180-181, *infra*). Neither warrants adoption. Without passing judgement at this interlocutory stage on the sufficiency of the evidence adduced on the now fully-tried fisheries issue, in the totality of circumstances it seems to us much too late in the day to allow the tribes to reopen that issue even on the limited basis which our dissenting colleague suggests. Once again, if the tribes thought themselves to possess a vital and possible unique interest in the fisheries matter, the time to have sought to insure that an adequate record was developed on it was when the matter was heard—not years later. With regard to Mr. Farrar's alternative proposal, as we understand it the tribes would be required to accept the record as it currently stands but would be permitted, in the

capacity of a party, to file proposed findings and conclusions and to appeal from any result deemed by them to be unsatisfactory. We perceive no good reason to confer such special rights upon one who, totally without justification, failed to participate from the beginning. It should be observed, however, that nothing will preclude the tribes from requesting leave to furnish their views to the Licensing Board, and (if thought necessary) to this Board, by way of an *amici curiae* filing.

¹⁹ ALAB-523, 9 NRC 58 (1979).

Opinion of Mr. Farrar, dissenting in part:

We face here what I believe to be the most difficult intervention question that has ever come before us. On the one hand, the Indian tribes' petition was so tardy—nearly three and one half years late¹—that it is somewhat surprising that there is still a hearing going on for them to intervene in.² On the other hand, there are some very good reasons for granting them a measure of relief, not only to allow them to protect their valuable interest in treaty-granted fishing rights but more importantly to assist the Board below and us in fulfilling our ultimate decision making responsibilities.

The Commission's Rules of Practice tell us to examine certain factors to determine whether late petitioners should be allowed to participate.³ Foremost among these is how good a justification they have for being late. On that factor and one other my views differ greatly from those of my colleagues. That is, I think more of the Indians' excuses for their lateness than the majority does,⁴ and I would weigh in the balance the vital nature of the interest that brings the tribes here.⁵ With respect to the other factors, it is more a matter of emphasis. For I do not disagree substantially with much of what the majority has to say in applying those factors to the circumstances presented

¹ To my knowledge, no petition this late has ever been granted. On one previous occasion, however, an intervenor was successful with a petition that was filed in an antitrust proceeding over two and a half years late. *Florida Power and Light Co.* (St. Lucie Unit 2), LBP-77-23, 5 NRC 789, *affirmed*, ALAB-420, 6 NRC 8 (1977), *affirmed*, CLI-78-12, 7 NRC 939 (1978). (Because there had been no other intervention petitions filed in that proceeding, no hearing had been convened prior to the filing of the belated petition, and none would have been held in its absence.)

² In the past, the Licensing Board laid the lengthy delay in bringing the hearing to a conclusion at the applicants' doorstep, stating that design changes and inadequate preparation on their part had been the cause of the problem. See, e.g., the February 28, 1978 letter from then Board Chairman Jensch to Governor Ray, and the original intervention ruling of the Board below, LBP-78-38, 8 NRC 587, 590 fn. 3, 592 fn. 5, 595, 597, 599 (1978). The applicants would assign different reasons for the delay. I have not analyzed the record thoroughly enough to form my own conclusions in this regard.

³ These appear in 10 CFR 2.714. Our decisions have generally focused on only five factors, i.e., the justification for the tardiness and the other four factors set out in paragraph (a)(1) of the rule. That paragraph, however, incorporates by reference the three additional factors contained in paragraph (d). Those have ordinarily, and understandably, received less attention from us. But one takes on major significance here. See Section I, *infra*, and ALAB-523, 9 NRC 58, 64, fn. 21 (1979); compare the majority's opinion, p. 169, *supra*, fn. 10.

⁴ See pp. 170-171 and 178-180, *infra*.

⁵ See pp. 176-178, *infra*; compare p. 169, *supra*, fn. 10.

(see pp. 169-172, *supra*); and even where we disagree, I recognize that my colleagues' opinion is balanced, measured and thoughtful. For example, the majority sums up its views this way (p. 172, *supra*):

The most that can be said on [the Indians'] behalf is that (1) there may be no other effective means whereby they can now protect fully their interest; (2) that interest may not be adequately represented by the present parties to the proceeding; and (3) the possibility cannot be excluded that their participation might make some contribution to the development of a sound record. With respect to these three factors, then, I need say little. I would simply weigh the first two more heavily in the Indians' favor than do my colleagues. As far as the third is concerned, I think the matter less speculative than do they,⁶ for I believe that we already have in hand evidence that the Indians are capable of assisting substantially in the development of a sound record on the fisheries issue.⁷

Particularly in light of the unique responsibility generally owed by the government to Indians, I thus cannot join the majority in holding that these petitioners must be entirely rebuffed. Yet their petition was so late that I do not think it warranted to let them intervene unconditionally. In order to minimize any possible short-term delay and perhaps to save time in the long run, I believe that what is called for is a compromise measure; *i.e.*, allowing them to intervene in a limited fashion, along the lines of one of the alternatives that I propose later in this opinion.

1. We decided last January that the Licensing Board had erred when, in granting intervention initially, it has in an entirely impermissible manner put the petitioners' status as Indians ahead of all other considerations.⁸ But we stressed then that this status could nonetheless legitimately come into play in certain ways.⁹ In this regard, one respect in which the tribes' status is relevant is in connection with the second of the three factors set forth in Section 2.714(d) of the Rules of Practice (and incorporated by reference in Section

⁶ See pp. 171, *supra*, and the summary quoted in the text above.

⁷ See pp. 178, *infra*.

⁸ Unpublished Memorandum and Order of January 12, 1979, pp. 1-2; ALAB-523, 9 NRC 58, 60-61. The Board below had said, for example (LBP-78-38, 8 NRC 587, 595): "Interesting as it may be to review the scope of the Commission's regulations on late filing of petitions to intervene, the precise issue is whether the Indians come within the broad scope of protection that the legislation and the court decisions have accorded them." It had gone on to hold (8 NRC at 597) that the tribes' petition should be treated as though filed by the United States on their behalf and that, consequently, "the factors recited in the Commission's regulations for a late filed petition to intervene [should] yield to the public interest which the government represents."

⁹ January 12th Memorandum, *supra*, p. 2, fn. 4; ALAB-523, *supra*, 9 NRC at 63 (fn. 16), 64 (fns. 20-21 and accompanying text).

2.714(a)).¹⁰ This has to do with the nature and extent of a petitioner's "interest."

The vital nature of the Indians' fishing rights—which are central to their way of life (see fn. 12 and p. 180, *infra*)—by itself makes the "interest" factor highly important here.¹¹ And no one can read the history, recounted in judicial opinions, of the Indians' endeavors to hold on to these valuable treaty rights against the "extraordinary machinations" the State of Washington went through in the past to deny them those rights, without realizing that the "interest" which brings them to this proceeding is precious in many ways.¹² Perhaps, in a legalistic sense, their efforts in securing this interest does not give it any more exalted status than the same interest would have when possessed by someone who could take it for granted. But, in a larger sense, the hard-earned quality of the interest should not be ignored when weighing its value in the balance.

¹⁰ See fn. 3, *supra*.

¹¹ In their intervention pleadings, the tribes advanced interests and contentions other than those related to fishing rights. But with respect to those other topics, the showing they have made on the relevant factors does not approach that made in connection with their fishing rights. Accordingly, I do not dissent from the majority opinion insofar as those other aspects of the case are concerned.

¹² See *United States v. State of Washington*, in which the district court analyzed the Indians' pre- and post-treaty fishing practices in exhaustive fashion. 384 F.Supp. 312, 350-58 (W.D. Wash. 1974). At one point, it found (384 F.Supp. at 357-58, citations omitted):

Subsequent to the execution of the treaties and in reliance thereon, the members of the Plaintiff tribes have continued to fish for subsistence, sport, and commercial purposes at their usual and accustomed places. *Such fishing provided and still provides an important part of their livelihood, subsistence, and cultural identity. The Indian cultural identification with fishing is primarily dietary, related to the subsistence fishery, and secondarily associated with religious ceremonies and commercial fishing.* Indian commercial fishermen share the same economic motivation as non-Indian commercial fishermen to maximize their harvest and fishing opportunities. Indians allow non-Indians to fish on their reservation in sport fisheries for which Indians serve as guides and charge a license fee. (Emphasis added.)

That helps to explain the nature of the interest. The fight to retain it was described by the appellate courts in subsequent proceedings in this fashion:

The state's extraordinary machinations in resisting the decree have forced the district court to take over a large share of the management of the state's fishery in order to enforce its decree. Except for some desegregation cases [citations omitted], the district court has faced the most concerted official and private efforts to frustrate a decree of a Federal court witnessed in this century. The challenged orders in this appeal must be reviewed by this court in the context of events forced by litigants who offered the court no reasonable choice.

Puget Sound Gillnetters Ass'n v. United States District Court, 573 F.2d 1123, 1126 (9th Cir. 1978), quoted in *State of Washington v. Washington Fishing Vessel Ass'n*, U.S. , 47 U.S.L. Week 4978, 4988 fn. 36 (July 2, 1979). The Ninth Circuit went on to point out that enforcement of the Federal decrees "is a problem because the state, its courts, and the non-Indian fishers have never fully accepted the principle that treaty rights can be claimed by a politically impotent minority." 573 F.2d at 1128.

In this regard, upon reflection I believe that our opinion last month did not give sufficient recognition to the extent of the legal battles the Indians have been fighting to retain their fishing rights in the past few years. That is, we placed great emphasis (in evaluating the tendered excuse for their late filing) on the formal adjudication of their fishing rights that they had in hand in the mid-1970's. See ALAB-552, 10 NRC 5, 6. I did not then fully appreciate how all-encompassing the enforcement efforts continued to be in later years.¹³ Had I understood that, I would not have joined my colleagues (ALAB-552, 10 NRC at 6, in applying to the Indians' situation what we had said elsewhere in rejecting the belated petition of a housewife who offered the excuse that she had been caught up in the performance of her domestic chores.¹⁴ To be sure, it now appears that the Indians might have been well advised to pay more attention to this nuclear licensing proceeding from its inception. But, from their perspective, our proceeding could have looked then like only a minor skirmish which did not warrant the diversion of their efforts—or which they did not have the capacity to deal with—while the major legal battle against those who were threatening their very way of existence was still going on.¹⁵ This excuse, therefore, has some merit.

As I see it, the Indians have attempted to atone for their late appearance. Since arriving, they have filed a number of papers with the Board below or with us. Many of these are quite lengthy and obviously took a great deal of effort to prepare. All appear to be relatively well thought out; in sum they reflect a reasonably thorough job of analyzing the record.¹⁶ I am prepared to take this as an indication that the tribes have the capacity and the willingness to make a valuable contribution to the development of the record on the matter of the plant's impact on the fishing rights granted them by treaty.

2. That brings me to a related point. I agree with the majority that short-term delay would result if we let the tribes intervene to press their contention on the nuclear plant's impact on fisheries. A record has already been made on

¹³ The rendition of the July 2nd Supreme Court opinion referred to in fn. 12, *supra* (which did not come to my attention until after our July 9th decision was issued), has led me to focus on the enforcement proceeding more closely than I had previously.

¹⁴ *Duke Power Company* (Cherokee Units 1, 2, and 3), ALAB-440 6 NRC 642, 644 (1977).

¹⁵ In this connection, see their June 13, 1978 Supporting Brief, pp. 6-7; see also the Department of Interior's letter of September 20, 1978 (other portions of which are quoted at pp. 179-180, *infra*), pointing out that "these tribes were involved in protracted and intense litigation to secure their treaty fishing rights" in *United States v. Washington* (fn. 12, *supra*) and that "the struggle to implement this decision continues." In light of this, it seemed to Interior "to ask too much to expect the tribes to anticipate and respond to such challenges to their rights [as posed by the nuclear plant] while they are still engaged in a struggle to establish their rights."

¹⁶ See Petition to Intervene and Supporting Brief (June 13, 1978); Reply Brief (September 5, 1978); Response to Board's Request and Preliminary Designation of Witnesses (October 27, 1978); Brief in Opposition to the Applicant's Appeal (December 26, 1978); Brief in Support of the Tribes' Appeal (June 14, 1979); and Supplemental Memorandum (July 30, 1979).

the effect the plant's cooling system may have in this regard. And because the tribes did not appear on the scene in timely fashion, they did not participate in the compilation of that record. But there are reasons, involving to some extent the Indians' peculiar status, why we ought not focus too sharply on that default.

Specifically, the tribes have repeatedly argued (1) that the Federal government generally has the duty to act as their trustee; (2) that consequently they were entitled to rely for the protection of their interests on particular Federal agencies, including the NRC; and (3) that these agencies did not fulfill their responsibilities in this respect. To be sure, the majority correctly points out that the tribes have not pointed to any misrepresentations in key documents "respecting a known or ascertainable *fact* relevant to the possible impact of the plant upon their fisheries." (p. 168, *supra*) (emphasis added). But that does not mean that the documents in question could not have misled them. For we should not overlook that the Final Environmental Statement for this facility, like others written in the same era, is not a model of full disclosure; the practice at the time seemed to be to avoid taking pains to highlight those areas where questions about the plant, or the adequacy of the staff's environmental review, might be raised.¹⁷ Again in keeping with what was then the norm, the FES is sometimes at crucial stages relatively short on facts.¹⁸ In that regard, it is not difficult to perceive how the tribes could have been misled by the soothing tenor of the *conclusions* used to describe the effect of plant construction and operation on fisheries; these do convey the impression that any adverse impacts would be negligible or temporary.

The government's failures to live up to the high standards demanded of a trustee were not limited to any possible problems with the FES. The Department of the Interior's Fish and Wildlife Service told the Indians in 1975 that there would be "minimal adverse impact on existing resources of the Skagit River."¹⁹ And that same Department's Bureau of Indian Affairs apparently did not fulfill its obligations. For Interior's Assistance Secretary for Indian Affairs eventually took the extraordinary step of writing to this Commission in 1978 to admit that his agency had not done its job properly:²⁰

We are also aware that, during the period set for petitioning for intervention, this Department's Bureau of Indian Affairs perhaps should have advised your agency of the potential for impacts on these tribes. In its

¹⁷ See *Florida Power and Light Co.* (St. Lucie Unit 2), ALAB-335, 3 NRC 830, 834-41 (1976); ALAB-435, 6 NRC 541, 543-44 (1977); and *Boston Edison Company* (Pilgrim Unit 2), ALAB-479, 7 NRC 774 (1978).

¹⁸ See e.g., *Pilgrim*, ALAB-479, *supra*, 7 NRC at 787.

¹⁹ February 28, 1975 letter from Northwest Fisheries Program Manager Heckman to Chairman Wilbur of the Swinomish Tribal Community.

²⁰ September 20, 1978 letter from Assistant Secretary Gerard to Commission Chairman Hendrie.

dealings with the Indian tribes, the United States is a trustee, and its representatives are to be held to "the most exacting fiduciary standards." *Seminole Nation v. United States*, 316 U.S. 286, 297 (1942). This trusteeship is not limited to the Department of Interior, but extends to the other executive agencies and the Congress. To deny the tribes' petition because the Federal trustee failed to ensure that tribal concerns were addressed would not measure up to "the most exacting fiduciary standards."

The fish in the Skagit River system are important to these tribes. Salmon have been the basis of tribal economies, cultures, and religions since time immemorial. Now that the tribes have established their treaty fishing rights, they have begun to make real progress toward self-determination and self-sufficiency. We ask that you give their petition to intervene the consideration it so deserves.

There appears, then, to be good reason to view the tribes' belatedness in a less severe light than we would use were non-Indian petitioners involved. More importantly, we might do ourselves a service by allowing them to participate in some fashion in the Licensing Board proceeding. This is because, as the last paragraph of the majority's opinion quietly reminds the Board below, it has—as do we—certain "decisional responsibilities" that must be fulfilled even if the Indians do not participate (p. 173, *supra*). My colleagues were referring, of course, to the duty imposed by the National Environmental Policy Act and the Commission's regulations on all boards—even in an uncontested case—to weigh carefully in the balance a proposed plant's likely impact upon aquatic life. It certainly would aid those endeavors to have the assistance of a vitally interested party who would be counted upon to point to any deficiencies in the proposed plans.

In the long run, it would save time for the Board below to have that assistance now. For whether or not the Indians are allowed to intervene, if their assertion that the record has not been adequately developed proves correct, either the Licensing Board or we will have eventually to say so. Experience teaches that the delay attendant upon reopening or remanding the proceeding at a later date would be far greater than would occur were the Board below to take up the matter at this point.

3. In these circumstances, two possible compromise solutions suggest themselves. Both recognize that a record on fisheries impact has already been made without the Indians' participation, and that in no event are they entitled to relitigate that matter fully.

The first would be to admit the tribes for the limited purpose of letting them try to convince the Board below that there are indeed serious gaps in the existing record or that they have additional evidence that deserves to be heard. If successful on that score, they would then be allowed to participate fully in the subsequent evidentiary sessions²¹ If unsuccessful, they would still be

allowed to file below proposed findings of fact and conclusions of law based on the existing record. In either event, if later dissatisfied with the ultimate decision on the merits of the fisheries issue, they would be accorded full appellate rights before us.

Adoption of this approach would, of course, leave open the possibility that the conclusion of the evidentiary hearing would be delayed beyond the time still needed to consider the other issues now pending. The other alternative I have in mind would not have that disadvantage. Under it, the Indians would be permitted to intervene but only for the more limited purpose of (1) filing proposed findings and conclusions based on the existing record and (2) appealing to us from a decision they deemed adverse to their interests. If we could be certain now that the record were fully developed, this approach would be ideal. For, without delaying the proceeding at all, it would serve to protect the tribes' fishing interests while at the same time assisting both the Board below and us in reaching the correct decision on a matter which will in any event come before us. The disadvantage of this suggestion, of course, is that it would not offer the Indians the opportunity to establish now that the record is less than fully developed; rather, it would put off any decision on that score until our review of the ultimate decision rendered below.

4. Before concluding, I must express my opinion about an aspect of this proceeding's evolution which, though important in any event, could become particularly significant if either of my compromise solutions were to be adopted. As already noted, when we vacated the initial grant of intervention we observed that the Board below had paid too little attention to the determinative factors set forth in the regulations (see fn. 8, *supra*). But to the extent the Board had touched on those factors in its opinion, it had generally found them to weigh in favor of the Indians. For example, with respect to the matter of the petitioners' likely contribution to the development of a sound record, it had found (8 NRC at 599-600) that

The petition with the supporting brief and the supplementary material filed which designate the areas of interest, the proposed witnesses who could be called, all combine to establish that the Petitioners can reasonably be expected to assist in developing a sound record in view of their commitment to submit witnesses with expertise in those areas of interest designated. . . . To some extent on the other factors as well, comments can be gleaned from the first opinion which are favorable to the tribes.²²

Later, however, the Board—under a new Chairman but with the other two members the same—found the relevant factors to weigh almost entirely

²¹ Of course, there would be no need to go into any special effect which damage to the fisheries would have on the Indians until there was an indication that the proposed plant would indeed have an adverse impact on the fisheries.

²² "Good cause" - 8 NRC at 597-98; "other means" - *id.* at 592, 593; "representation by existing parties" - *id.* at 598, 599; "extent of delay" - *id.* at 590 fn. 3, 592, 595, 597-98.

against the Indians.²³ Even giving full recognition to the impact of our intervening decision, I for one am unable to understand how a Board member could have subscribed both (1) to what was said about the relevant factors in the Board's first opinion and (2) to the almost diametrically opposed findings contained in the Board's recent decision.²⁴ This points to the unfortunate conclusion that in at least one instance that Board's decision was decreed by its Chairman alone. If this did happen—and I hope that I am wrong about it—I can only stress that on all questions in every proceeding, each member of a board has the right—and the obligation—to cast an independent vote based on his own appreciation of what the record establishes, and to express his views separately if they cannot be reconciled with those of his colleagues.

As I said at the outset, this is an extremely difficult case for me. At this late date, nothing we can do is entirely satisfactory. On the other hand, for the reasons the majority has spelled out, letting the Indians intervene without restriction is not desirable. But, on the other hand, keeping them out entirely may be costly in the long run, in terms either of delay or of the rendition of a decision which does not do justice to the important considerations involved here. And even though the compromise solutions I have suggested are less than optimal, I believe they offer the best approach now open to us.

²³ See, e.g., LBP-79-16, 9 NRC 717, 719.

²⁴ Lest I be misunderstood, I can understand how a Board member could have voted for a different *result* on the two occasions, the second time free of the undue significance earlier attributed to the Indians' status. It is the difference in the characterization of the relevant factors that concerns me.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Chairman
Dr. David B. Hall
Dr. Oscar H. Parls

In the Matter of

Docket Nos. 50-250 (SP)
50-251 (SP)

**FLORIDA POWER AND LIGHT
COMPANY**

**(Proposed Amendments to
Facility Operating License to
Permit Steam Generator
Repairs)**

**(Turkey Point Nuclear
Generating Station, Units 3 and 4)**

August 3, 1979

The Licensing Board, with one member dissenting, grants a more than one year-late petition to intervene in an operating license modification proceeding to authorize repairs to the facility's steam generators.

RULES OF PRACTICE: INTERVENTION (INTEREST)

Residence within 16 miles of a facility is sufficient to establish the interest of a petitioner who raises safety questions. *Virginia Electric Power Company* (North Anna Power Station, Units 1 and 2), ALAB-146, 6 AEC 631, 634 (1973).

RULES OF PRACTICE: INTERVENTION (INTEREST)

A petitioner who alleges that his opportunity for recreational activity may be diminished by a nuclear facility possesses adequate interest to allow intervention. *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-73-10, 6 AEC 173.

RULES OF PRACTICE: NOTICE OF HEARING

The Federal Register Act expressly provides that publication in the *Federal Register* constitutes notice to "all persons residing with the states of the Union." 42 U.S.C. 1508. Moreover, publication in the Federal Register gives legal notice to all citizens. *Federal Crop Insurance Corp. v. Merrill*, 332 U.S. 380-388 (1947).

ORDER RULING ON THE PETITION OF MARK P. ONCAVAGE

On December 13, 1977 the Nuclear Regulatory Commission noticed an amendment to the facility operating licenses of Florida Power and Light (FPL), Nos. DPR-31 and DPR-41, relative to proposed steam generator repairs at Turkey Point Nuclear Generator Unit Nos. 3 and 4, located in Dade County, Florida. (42 *Fed. Reg.* 62569). The notice stated that petitions to intervene should be submitted prior to the expiration of the thirty-day (30) period from the date of the Notice, or January 13, 1978. No petitions to intervene were filed during the intervention period.

On February 9, 1979, more than a year after the expiration of the intervention period, Mark P. Oncavage requested a "full hearing." He stated that the FPL letter of September 20, 1977, referenced in the *Federal Register* notice, did not arrive at the local docket room until January 22, 1979 and that this fact established "good cause" for the late filing. Mr. Oncavage's letter expressed environmental and safety concerns.

On February 22, 1979, Mr. Oncavage requested that his letter of February 9 be considered a petition to intervene. On February 27, 1979 an Atomic Safety and Licensing Petition Board was appointed to rule on the petition to intervene from Mr. Oncavage. (44 *Fed. Reg.* 12120).

On March 1, 1979 the NRC Staff responded to the petition, stating it should be denied because the petitioner did not make an adequate showing of the factors to support an out-of-time filing set forth in 10 CFR 2.714(a). Staff said that Mr. Oncavage could have contacted the NRC in a timely fashion if he had been genuinely interested.

On March 9, 1979 FPL responded to the petition, saying that the request for a hearing should be denied because it is untimely, fails to make a substantial showing of good cause for failure to file on time, fails to comply in form and content with basic requirements imposed by the Commission's rules for such requests, and fails to demonstrate any facts to support his standing to intervene. Further, the Licensee said that granting the request for a hearing at this late date would severely prejudice FPL. Attached to the filing were copies of the FPL letter of September 20, 1977, an affidavit of G. D. Whittier relative to a visit to the local library docket room, and an affidavit of H. D. Mantz relative to the scheduling of the steam generator repairs.

Shortly thereafter, in a conference call with the Board, the parties agreed that a prehearing conference would be held in Miami, Florida on May 2, 1979. The Petitioner, also, participated in the conference call.

On March 19, 1979 a revised petition to intervene was filed by Mark P. Oncavage. The petition reiterated environmental, health and safety, and economic concerns. It also responded to the factors justifying the granting of a late petition set forth in 10 CFR 2.714(a). Petitioner stated that the absence of FPL's letter of September 20, 1977, established good cause for his late filing,

that there is no other pending proceeding at the State level, that an effort will be made to assist in developing a sound record, that there are no other "existing parties" to represent his interest, and that any delay caused by his intervention would be more than offset by the value of a public hearing. An affidavit of Ms. Renee Daily, local docket librarian, and a motion to commence discovery were attached to the revised petition.

On March 30, 1979, FPL responded to the revised petition. The filing repeated FPL's position that the Petitioner had not met the burden in 10 CFR 2.714(a) for an untimely petition. The Licensee asserted that the initiation of a hearing at this late date would disrupt careful planning and considerable effort and could deny Licensee the ability to commence repairs without delay. FPL further stated that the petition fails to establish "interest" and does not contain an acceptable contention.

On April 6, 1979, the NRC Staff filed its response to the revised petition. It said that the petitioner had not established good cause for the late filing, but agreed with Petitioner that his interest would not be protected outside this proceeding. In addition, Staff said that Petitioner's claim of being able to assist in developing a sound record is unsubstantiated. With regard to factor three,¹ Staff said that while its mandate is to protect the interest of the public at large, there is room for the advancement of individualized interests in these proceedings. Staff agreed with Licensee that an evidentiary hearing at this date would have the potential for causing considerable delay in this proceeding. Finally, Staff concluded that Petitioner had at least minimally satisfied the interest requirement and had set forth at least one adequately pleaded contention.

When the Board met prior to the Prehearing Conference, it was learned that only Dr. Hall had received a pleading from the Petitioner dated April 24, 1979, entitled "Petitioner Reply to Licensee Response and NRC Staff Response." The pleading stated that Petitioner's "interest" would be affected and that this was sufficient to develop a sound record "irrespective of any expertise the Petitioner may or may not have."

During the Special Prehearing Conference on May 2, 1979, the Petitioner submitted a new list of contention to the Board and distributed copies to the parties. Both FPL and the NRC Staff protested that this filing was untimely and, therefore, not permitted by the regulations unless Petitioner was granted leave by the Board based on a balancing of the same factors which must be considered for an untimely petition for leave to intervene. (Tr. 92, 96).

On May 9, 1979, the Board issued an Order requesting a response from FPL and the NRC Staff as to what the expectations are that the new

¹ Factor three "(3)" under the 1977 rules was redesignated factor four "(iv)" in a revision of the rules that became effective in 1978.

contentions may contribute to a sound record. FPL responded on May 21, 1979 by stating that the motion to amend is untimely and that the new contentions indicate that the Petitioner still has not become familiar with essential, available information. FPL also pointed out that the presentation of a direct case is unlikely since Petitioner's two "firm" witnesses have expertise in areas not within the areas of the contentions. FPL stated that Petitioner's position at the Prehearing Conference was that an intervenor could present his case through cross-examination after discovery. FPL concluded that the Petitioner's participation would be unlikely to assist in developing a sound record, that the petition and the motion to amend were late, and that the requirements of Section 2.714(a) (1) (iii) and Section 2.714(a) (3) have not been met by the Petitioner.

On May 23, 1979 the NRC Staff responded to the Board's Order of May 9, 1979. The Staff stated that the Petitioner had been too vague in discussing the possibility of his contributing to a sound record so the Staff had no choice but to assume that his participation would not make a contribution. The Staff mentioned that many of the contentions contained references to the Federal Water Pollution Control Act (FWPCA). The Staff said since EPA issued a National Pollutant Discharge Elimination System (NPDES) Permit (No. FL0061562) for the Turkey Point facility on June 14, 1978, pursuant to Section 402 of FWPCA, those portions of the contentions alleging noncompliance with the FWPCA are inadmissible. The Staff contended that absent information about the identity and qualifications of witnesses, it did not believe that the contentions demonstrated that the Petitioner could reasonably be expected to assist in the development of the record in this proceeding.

On May 15, 1979 Staff issued the Safety Evaluation Report (SER) for the proposed steam generator repair at Turkey Point. In it Staff concluded: "(1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public." (at 4-1).

On May 23, 1979 the Board received a telegram from Dean Bruce S. Rogow, Nova Law School, Ft. Lauderdale stating that he and eight other Florida lawyers were committed to represent Mr. Oncavage if he is permitted to intervene. In addition, Dean Rogow requested seven (7) days after receipt of the filings by FPL and Staff in response to the Board's Order of May 9, 1979, in which to respond to those filings. The contents of the telegram were confirmed by a serviced letter from Dean Rogow dated May 24, 1979. Licensee responding by letter dated May 29, 1979 expressed opposition to Dean Rogow's request for leave to file a pleading "To the extent . . . that the letter and telegram constitute a request for delay of a decision on the petition

to intervene or for advance permission to file still another untimely petition . . .

In the interest of expediting the proceeding, the Board held a conference call with the parties and Petitioner on May 31, 1979. During the call it was agreed that Dean Rogow would be allowed until June 7, 1979 to file a response to the filings that FPL and Staff had submitted in response to the Board's Order of May 9. Further, it was agreed that Licensee would be allowed until June 20, 1979 to respond to Dean Rogow's filing and Staff would be allowed until June 25 to make a response. In addition, a member of the Board advised the parties that he had studied the SER in an effort to obtain answers to certain questions elicited by the list of contentions which Petitioner had submitted during the Prehearing Conference on May 2, 1979, but that he was not satisfied with regard to the adequacy of some of the information in the SER. Consequently, the Board requested Licensee to provide it with copies of the Steam Generator Repair Report (SGRR). Licensee agreed to comply and sent copies of the SGRR to the Board on June 5, 1979.

Dean Rogow submitted his Notice of Appearance on behalf of Petitioner and a filing entitled "Supplemental Submission of Petitioner Mark P. Oncavage" (Supplemental Submission) on June 5, 1979. The Supplemental Submission identified two expert witnesses who are committed to testify on behalf of Petitioner, gave their credentials, and indicated the contentions which their testimony would address. The three major areas to be addressed by these witnesses were identified as "(1) the long term on site storage of steam generator lower assemblies in an earthen floor facility; (2) the occupational radiation exposure; and (3) the release of liquid effluents containing radioactivity into a closed cycle cooling canal" (Supplemental Submission at 2). These three issues were focused on to show that Petitioner has the ability to contribute to a hearing, but contentions addressing the safety of the present operation of the plant or the potential for a recurrence of a need to make steam generator repairs are not being abandoned. (*Id. fn. 1*). Petitioner argues that he has complied with the need to provide information regarding witnesses and testimony and has demonstrated the contribution he can make to a sound record (*Id. at 7*). He says that serious delay in the proceedings can be avoided by a prehearing conference to narrow and define the scope of the hearing, by stipulations, and by submission of written materials without live testimony, and he maintains that any small time savings that would be gained by denying his petition for leave to intervene would be far outweighed by the benefit to be derived from ventilating his contentions (*Id. at 8*).

Licensee indicated its intention to respond to Petitioner's Supplemental Submission by letter dated June 8, 1979 and filed its response, entitled Licensee's Response to "Supplemental Submission of Petitioner Mark P. Oncavage" (Licensee's Response to Supplemental Submission), on June 20, 1979. FPL still contends that a hearing would be unlikely to assist in developing a sound record, would threaten to delay substantially the issuance

of the license amendment, and would deny FPL the flexibility needed for scheduling the steam generator repairs. With regard to the three areas of concern dealt with in the Supplemental Submission, FPL argues that the first, relating to occupational dose, should be disallowed because Petitioner would apparently have this Board impose a man-rem limit for the repair operation. Licensee claims that the Commission's regulations do not provide for the imposition of man-rem limits upon occupational activities. With regard to the second issue, storage of the radioactive steam generators in an earthen floored facility on-site, Licensee maintains that Petitioner fails to take issue with the technical information contained in the SGRR concerning measures which will be taken to avoid release of radioactive materials from the assemblies. Further, FPL says that Staff has found these measures to be in accordance with ALARA (as low as is reasonably achievable) philosophy. Finally, with regard to the release of radioactive materials from the cooling canals, Licensee argues that radioactive releases from the plant during the repair will be controlled pursuant to the plant's operating licenses and will meet the requirements of 10 CFR Part 20 and Part 50, Appendix I. Licensee concludes that the petition to intervene should be denied because Petitioner has not demonstrated good cause for untimeliness nor established that he is likely to assist in developing a sound record, and because his participation will broaden the issues and delay the proceeding.

The NRC Staff advised the Board of its intention to respond to Petitioner's Supplemental Submission by letter dated June 8, 1979 and filed said response on June 25, 1979. On the basis of Petitioner's identification of "two apparently qualified witnesses" who could testify on matters relating to several contentions advanced by Mr. Oncavage, Staff said it now "believes that Petitioner could reasonably be expected to contribute to the development of a sound record in this proceeding." Staff concluded that on balance the factors which must be considered for a late petition weigh in favor of granting Petitioner leave to intervene. Further, Staff urges that parties be allowed a limited but reasonable period of time to reach some form of multi-party agreement on the admissibility of the contentions or to file position statements on them, or both.

With this record before us we must now determine whether the untimely petition of Mr. Oncavage should be granted, by balancing the five factors set forth in 10 CFR 2.714(a) (1). In addition, we must determine whether Petitioner has an interest in the proceeding pursuant to 10 CFR 2.714(d) and whether he has set forth at least one cognizable contention and stated the basis for that contention with reasonable specificity, pursuant to 10 CFR 2.714(b). We must also determine whether the list of new contentions submitted out of time on May 2, 1979 should be admitted for consideration pursuant to 10 CFR 2.714(a) (3). We turn now to those tasks.

INTEREST AND CONTENTIONS

As we indicated earlier, in addition to determining whether Mr. Oncavage has satisfied the requirements for filing out of time, we must also determine whether he has shown that his interests may be affected by the outcome of this proceeding, whether he has satisfied the requirements for filing untimely amendments to his contentions, and whether he has advanced at least one cognizable contention and set forth the bases for that contention with reasonable specificity. We shall deal first with the matter of interest.

Interest of Petitioner

Mr. Oncavage has told us that he and his wife and two year old son live approximately 15 miles from the Turkey Point Station. He believes that his proximity to the station and the prevailing winds during eight months of the year would mean that radiocative material which might be released as a result of the repair operation might pose a health hazard to him and his family. (Revised Petition for Leave to Intervene). In addition, Petitioner owns a sailboat and often cruises the waters of Biscayne Bay near Turkey Point and engages in fishing, crabbing, swimming, skin diving, and underwater photography. He believes that a release of radioactive material as a result of the repair operation might adversely affect his recreational use of this area. (*Ibid.*)

Licensee argues that Petitioner has failed to set forth with sufficient particularity how radioactive releases might affect his interests and argues that any injury to Petitioner, either directly or through inhibiting his use of recreational facilities, is purely speculative. (Licensee's Answer to Motion of Oncavage, dated March 30, 1979). The NRC Staff, on the other hand, believes that Mr. Oncavage has satisfied the interest requirement as set forth in 10 CFR 2.714. Staff says "Petitioner's residence and considerable recreational activity is in close proximity (within 15 miles) to the plant and expressed concern over the possibility of radiological releases due to the proposed action presents a cognizable interest in the proceeding" (sic). (Staff Response to Revised Petition at 6-7).

The Appeal Board has held that residence within 16 miles is sufficient to establish interest of a petitioner who raises safety questions. *Virginia Electric Power Company* (North Anna Power Station, Units 1 and 2), ALAB-146, 6 AEC 631, 634 (1973). In addition, the Commission has ruled that a petitioner who alleges that his opportunity for recreational activity may be diminished by a nuclear facility possesses adequate interest to allow intervention. *Philadelphia Electric Company, et al.* (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-73-10, 6 AEC 173. With respect to Licensee's argument that any injury to Petitioner is purely speculative, we can look to a recent ruling by the Appeal Board in *North Anna. Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9

NRC 54 (1979). There the Appeal Board reversed an order by a Licensing Board which had denied a petition to intervene in a spent fuel pool modification proceeding; the Licensing Board's denial had been based on the failure of the Petitioner to particularize a casual relationship between injury to its interest and the possible outcome of the proceeding. (*Id.* at 56). The Appeal Board said that "close proximity has always been deemed to be enough, standing alone, to establish the requisite interest," and "the question of whether [Petitioner's] concerns are justified must be left for consideration when the merits of the controversy are reached." (*Ibid.*)

We conclude that Staff is correct. Mr. Oncavage clearly has satisfied the Commission's requirements with regard to showing an interest pursuant to 10 CFR 2.714(a) (2) and 2.714(d).

Untimely Supplements to Petition to Intervene

The supplements to Petitioner's original petition which were submitted at the Prehearing Conference and later, by Dean Rogow (Supplemental Submission), were untimely pursuant to 10 CFR 2.714(b). According to paragraph (b) additional time for filing a supplement may be granted by a Board upon a balancing of the factors in 10 CFR 2.714(a) (1).² We proceed now to a discussion of our consideration with respect to the admission of these untimely supplements.

Factor (i), the extent to which Petitioner has shown good cause for filing the supplements out-of-time, weighs against admitting the supplements because Petitioner has failed to show any valid reason for their lateness. We observe in this connection, however, that Petitioner was appearing *pro se* until just before the Special Prehearing Conference, and we do not demand that his early performance adhere rigidly to the Commission's standards. Therefore, we do not weight Factor (i) as heavily as we otherwise might.

Factor (ii), the availability of other means whereby the Petitioner's interest will be protected if the supplements are not admitted, weighs in favor of allowing their admission. There are no other means whereby Petitioner's interest will be protected, and the supplements are essential to the adequacy of his petition.

² The semantics of 10 CFR 2.714(b) do not make it clear, in our view, that the provision for granting additional time is applicable to the circumstances of this case. A reading of the Commission's Statement of Consideration for revision of Section 2.714, however, convinces us that we may apply the rule to this case. (43 *Fed. Reg.* 17798, April 26, 1978). The relevant language in the Statement of Consideration is as follows:

"Second, Section 2.714 is revised to specifically provide that late filed contentions (a contention or amended contention which is filed after 15 days prior to the special prehearing conference, . . .) will be considered for admission under the clarified criteria set forth in subparagraph (a) (1)."

Factor (iii), the extent to which the supplements may reasonably be expected to assist in developing a sound record, weighs heavily in favor of their admission in the opinion of Dr. Paris. The revised contentions and the bases thereof which are set forth in the supplements advance the issues which are the *sine qua non* for his belief that participation by Mr. Oncavage can be expected to assist in developing a strong record. Dr. Paris finds that Factor (iii) weighs heavily in favor of admitting the supplements for the same reason that he finds that Factor (iii) weighs heavily in favor of admitting the Petitioner, *infra*, in his Separate Opinion. Mrs. Bowers gives slight weight for the reasons stated on Factor (iii), *infra*, in her Separate Opinion.

Factor (iv), the extent to which Petitioner's interests will be represented by existing parties if the supplements are not admitted, weighs in favor of admitting them. The supplements are essential to his petition, and if his petition is denied there will be no hearing and no parties to represent his interests.

Factor (v), the extent to which admitting the supplements will broaden the issues or delay the proceeding, weighs against admitting them. Factor (v) again weighs lightly, however, because in our opinion the FPL schedule for the repair work is not fixed.

In conclusion, we find that Factor (i) weighs against admitting the supplements and Factor (v) weighs lightly against their admission. Factors (ii) and (iv) weigh in favor of their admission. Factor (iii) also weigh in favor of admission, but we are not in agreement as to the weight it should receive (see our separate opinions, *infra*). On balance we find that the factors in 10 CFR 2.714(a) (1) which must be considered for the admission of untimely supplements to a petition, pursuant to 10 CFR 2.714(b), weigh in favor of their admission. Consequently, the motions to admit the list of revised contentions submitted on May 2, 1979, and the Supplemental Submission filed on June 5, 1979, are granted.

UNTIMELINESS

Cause for Failure to File on Time - Factor (i)

At the Special Prehearing Conference on May 2, 1979, the parties and Petitioner were first given an opportunity to present argument with respect to showing good cause for the untimeliness of the petition. Petitioner argued that nothing concerning the proposed steam generator repair was published in local newspapers and that "mere notice in the Federal Register . . . is

inadequate notice" (Tr. 17-18). Mr. Oncavage first learned of the proposed repair through personal conversations in January 1979, after which he sought additional information in the public document room at the library of Florida International University in Miami (Tr. 21-22). It was then that he discovered that FPL's letter to the NRC, dated September 20, 1977, was missing from the public document room. A copy of the letter was requested by the library and was received on January 22, 1979 (Affidavit of Renee Daily dated March 16, 1979). Petitioner argued that having this "crucial document" missing from the public document room for 13 months constituted good cause for his untimely filing of petition to intervene (Oncavage revised Petition dated March 18, 1979).

Staff indicated that press releases usually are not issued in connection with applications for license amendments. (Tr. 18-19). But both Staff and Licensee pointed out that failure to read the *Federal Register* does not constitute legal grounds for a showing of good cause for untimeliness (Tr. 24, 29). On this ground they argue that the good cause factor weighs against Petitioner (Tr. 24, 30-31).

We have some sympathy for Petitioner's argument that the *Federal Register* is, from the point of view of many private citizens, an "obscure publication" (Tr. 18); as the Board observed during the Prehearing Conference, the "Federal Register is hardly a best seller" (Tr. 19). Be that as it may, however, we are bound by the law in reaching our decisions. The law required that the Nuclear Regulatory Commission publish once in the *Federal Register* notice of its intention to act on an application for an amendment to an operating license (The Atomic Energy Act of 1954, as amended, Sec. 189). The Appeal Board noted, in *Jamesport*, that "The Federal Register Act expressly provides that such publication constitutes notice to 'all persons residing within the States of the Union.' 44 U.S.C. 1508." *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2) ALAB-292, 2 NRC 631 (1975). Moreover, many years ago the U. S. Supreme Court ruled that publication in the *Federal Register* gives legal notice to all citizens (*Federal Crop Insurance Corp. v Merrill*, 332 US 380-388, 1947). For this reason we must conclude that Mr. Oncavage was provided legal notice of the proposed steam generator repair.

Were there other factors which made it impossible for Mr. Oncavage to file on time? We think not. He was in residence in Miami, Florida in December 1977 when the Federal Register notice was published. (Tr. 42). He also was residing in Miami in the spring of 1977, when articles concerning the proposed steam generator repair at Turkey Point were published in the Miami Herald (Tr. 31, 33).

Moreover, in connection with his studies as an environmental sciences student at Florida International University, Mr. Oncavage has been using the Public Document Room in the University's library since 1976 (Tr. 22). Although the letter from FPL to NRC dated September 20, 1977 apparently

was not filed properly in the Document Room until January 1979, the Steam Generator Repair Report was properly filed there in October 1977 and revisions to the report were filed subsequently in a timely fashion (Affidavit of G. D. Whittier dated March 8, 1979; Tr. 26). Presumably Mr. Oncavage was using the document room after these documents had been filed there, but he either failed to study them or to react to them until January 1979 when he was "simply informed by someone that there is a problem with the FPL steam generators, . . . (Tr. 22). Considering the facts that the Repair Report was readily accessible to Mr. Oncavage and there was newspaper coverage about the proposed repairs in the spring of 1977, we believe that his failure to act in a timely fashion resulted either from a lack of timely concern or a failure to be sufficiently alert. Neither explanation, in our view, provides an adequate excuse for his tardiness. We find, therefore, that Petitioner has not shown good cause for failure to file on time; this factor weighs against granting him leave to intervene.

Availability of Other Means Whereby Petitioner's Interest Will Be Protected - Factor (ii)

Counsel for Petitioner argued that "there is certainly no other forum available to this Petitioner to voice his concerns and participate in the adjudicatory process, because State and local governments are preempted from performing functions that are exclusively those of the Nuclear Regulatory Commission" (Tr. 46). Licensee argued that a hearing was not necessary to protect the interests of the Petitioner; in the opinion of Licensee the SGRR adequately accommodates Petitioner's interests by providing information which answers the questions he raised in his petition (Tr. 53). The NRC Staff, on the other hand, took the position that it was not apparent that there would be other means, such as State proceedings, by which Petitioner's radiological safety and environmental interests could be protected (Staff Response to Revised Petition dated April 6, 1979, at 4; Tr. 58-59).

We agree with Petitioner and Staff. Apparently there is no other forum in which Petitioner could protect his interests. In view of these considerations, we find that the second factor weighs in favor of Petitioner.

OPINION OF ELIZABETH S. BOWERS:

Extent to Which Petitioner's Participation May Reasonably Be Expected to Assist in Developing a Sound Record - Factor (iii)

These comments are not meant to be in any way derogatory to Petitioner, his counsel or his proposed witnesses. Time constraints and lack of specialized experience are often controlling factors.

It is a serious determination to weigh whether a petition should be accepted in a situation which would otherwise not require a hearing. The

determination is important to the Petitioner, FPL, and the NRC Staff and the Board.

My colleagues, Dr. Paris and Dr. Hall, have each written separate opinions on Factor (iii). As a member of a petition review board, I am very concerned about an untimely Petitioner's ability to develop a "sound record." I do not share Dr. Paris' opinion that this factor should weigh heavily in the Petitioner's favor. Dr. Paris has taken essentially non-specific "bare bones" contentions and has enhanced them with rather elaborate scenarios by delving into documents which are also available to Petitioner. He has put meat on the bones. Recognizing that the Petitioner is not required to plead the evidence in drafting the contentions, I think more is required than asking a series of questions without stating "the bases for each contention set forth with reasonable specificity." (2 CFR 2.714(b)). This is the responsibility of the Petitioner.

It is my opinion that Dr. Paris' labor has advanced information which, if fully ventilated in an evidentiary hearing, would result in a more detailed record than that existing at the present time and this would perhaps be in the public interest.

Considering the present situation, I would lean slightly toward the petitioner in this matter on the assumption that Dr. Paris' comments should be of value to the petitioner if he is able to proceed with relevant direct testimony and cross-examination.

The separate opinion of Dr. Oscar H. Paris on Factor (iii) is attached to this Order. Also, see dissenting opinion of Dr. David B. Hall. **This concludes separate opinion of Elizabeth S. Bowers.**

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The Extent to Which the Petitioner's Interest Will be Represented By Existing Parties - Factor (iv)

With regard to factor four, the extent to which Petitioner's interest will be represented by existing parties, Petitioner takes the position that his interest will not be protected if his petition is denied because there are no existing parties nor other petitions for leave to intervene (Revised Petition to Intervene at 12). Licensee, on the other hand, takes the view that this factor is not relevant in this case because no hearing is being conducted and other parties do not exist (Licensee's Response to Supplemental Submission at 18). Staff noted that Mr. Oncavage failed to explain why his interest, as well as that of the general public, will not be effectively served by the NRC, which has the statutory responsibility for ensuring the public health and safety and protection of the environment. Nevertheless, Staff recognized that there is room for the advancement of individualized interests in these proceedings, and concluded that the fourth factor weighs in favor of Petitioner. (Staff Response to Revised Petition at 5).

The basic question to be answered here, as we see it, is whether the fourth factor is applicable in a case in which no hearing will be held if the late petitioner is denied leave to intervene. If it is applicable, then logic leads inescapably to the conclusion reached by Petitioner and Staff: Petitioner's interest will not be protected by other parties and therefore the factor weighs in his favor. If the fourth factor is not applicable, on the other hand, then it should receive zero weight.

Unfortunately, NRC practice has failed to provide a clear-cut answer to the question of whether the fourth factor is applicable when there are no intervening parties and no petitioners other than the latecomer. Different licensing boards have decided this question in different ways based on the total circumstance in each case. In *St. Lucie and Turkey Point* the Licensing Board decided that the fourth factor was not directly applicable, but nevertheless it went on to note that without the petitioner's admission there would be no other party to protect petitioner's interest. Florida Power and Light Company, (*St. Lucie Plants, Units 1 and 2 and Turkey Point, Units 3 and 4*), LBP-77-23, 5 NRC 789, 800, April 5, 1977. In *Virgil C. Summer* the Licensing Board acknowledged uncertainty as to the applicability of factor number (iv), but it said that if the factor were applicable it would be given zero weight because of the particular circumstances of that case (South Carolina Electric and Gas Co., et al., *Virgil C. Summer Nuclear Station, Unit 1*, LBP-78-6, 7 NRC 209, 213-214, February 3, 1978). In *Kewaunee*, on the other hand, the Board concluded that petitioner's interest would not be represented absent a hearing and decided that the fourth factor weighed in favor of admitting them as intervenors. (Wisconsin Public Service Corp., et al., *Kewaunee Nuclear Power Plant*, LBP-78-24, 8 NRC 78, 84, July 12, 1978).

We are instructed to balance Factors (i) through (v), in addition to those set forth in subsection (d) of 2.714. We are not told to consider only applicable factors; we are instructed to consider them all. We believe that the Commission intended that all of the five factors should be balanced in every case involving an untimely petition. In the circumstances where denial of a late petition would result in no hearing and no parties to protect the petitioner's interest, the question, "To what extent will Petitioner's interest be represented by existing parties?" must be answered, "None".

The foregoing reasoning leads us to agree with Staff. Absent a hearing at least some of Petitioner's interests will be protected by no one. We find, therefore, that the fourth factor weighs in his favor.

The Extent to Which Petitioner's Participation Will Broaden the Issues or Delay the Proceeding - Factor (v)

The fifth, and last, factor to be considered for an untimely petition for leave to intervene is the extent to which the Petitioner's participation will broaden the issues or delay the proceeding. Petitioner acknowledged that his

participation would "create additional issues" but argued that "the benefit derived from hearing opposing contentions far outweighs any small time savings gained by exclusion of Mr. Oncavage." (Supplemental Submission at 8). In addition, Petitioner suggested several procedures which could serve to expedite a hearing should one be ordered; we interpret these suggestions as offers to proceed in this manner if the petition is granted. (*Ibid.*).

Licensee argued that initiating a hearing at this late date would disrupt its "careful planning and effort and could deny Licensee the ability to commence repairs without delay." (Licensee's Response to Untimely Request for Hearing, dated March 9, 1979, at 9-10). Such a delay would result in increased costs to Licensee and potential for decreased system reliability. (*Ibid.*; also, see Affidavit of H. D. Mantz, dated March 8, 1979). Although originally FPL planned to repair Unit 4 beginning in October 1978, it has changed its plans and does not expect to start that repair before the fall of 1979. (SER at 1-1). In response to questions from the Board during the Special Prehearing Conference, Licensee indicated its plans for initiating the work are indefinite. (Tr. 77-79). Mr. Coll stated, "We do not know at this time when it will be required to make the repairs," and went on to explain that the company's objective is "to be ready to perform the repairs when it becomes necessary or economically desirable to do so." (Tr. 78). According to Project Manager Mantz,

"... the exact date of initiation of the repair program will depend upon FPL's analysis of the extent of degradation of the existing steam generators, maintenance schedules and unplanned repair outages, refueling schedules, the availability of alternate oil fired generation, and other factors. (Mantz Affidavit at 3).

The NRC Staff, which originally opposed the admission of Petitioner, said that the commencement of an evidentiary hearing at this stage has "the real potential for considerable delay." (Staff Response to Revised Petition at 6). Later, when it concluded that Petitioner has set forth adequate justification for his untimeliness, Staff recommended certain actions which could be taken to prevent unnecessary delay, should we grant leave to intervene. (Staff Response to Supplemental Submission at 3).

It will be useful at this point to summarize the history of this case. The Licensee submitted its repair plan to the Commission in September 1977, at which time it planned to start the repair of Unit 4 in October 1978. (SER at 1-1). The Commission published the notice of amendment in December 1977. Subsequently, FPL pushed its schedule back *at least* 12 months; when the SER was issued in 1979 Licensee had deferred initiating repair of Unit 4 to the fall of 1979 or later. (*Ibid.*). In May 1979 we were told at the Prehearing Conference that FPL still did not know when it would be necessary or economical to initiate the repair program (Tr. 78). Finally, the NRC Staff issued the SER on May 15, 1979 and the EIA on June 29, 1979.

In view of this history, of what significance is the 13-month delay attributable to the tardiness of Mr. Oncavage in filing his petition? To begin with, we note that if Petitioner had filed on time and had been admitted in 1978, we still could not have gone to hearing until some time after Staff had issued the EIA. *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-277, 1 NRC 539, 546 (1975); also see *New England Power Company, et al.* (NEP, Units 1 and 2), LBP-78-9, 7 NRC 271, 292-294 (1978). The late issuance of the EIA resulted from Staff's uncertainty about whether an EIA or an Environmental Impact Statement (EIS) should be issued (Tr. 79-82). Be that as it may, by early 1979 FPL was already 12 months behind its original schedule through its own doing. Viewed in light of this circumstance, and considering the fact that a hearing could not have been held until an appropriate period of discovery had elapsed following issuance of the EIA, Petitioner's delay of 13 months wanes. If Petitioner had been timely and had been admitted in 1978, as of this writing the parties probably would still be engaged in discovery.

What prejudice would accrue to Licensee if the petition of Mr. Oncavage were granted? Licensee has told us of the possible consequences of a delay in the repair work. Because it is unable to predict when the repair must be initiated, however, it is not at all clear that a hearing at this late date would, in fact, delay the work itself. Licensee has said, further, that its careful planning and effort would be disrupted by a hearing but it is silent with regard to the injury such disruption would cause. We presume that it would include the expense and trouble of a hearing, conditions which might be imposed by us as a result of a hearing, and the risk that we might deny its request for an amendment. Against this concern, of course, must weigh the interests of the general public.

In conclusion, we believe that the Petitioner's participation would "create additional issues" and would delay the proceeding. The broadening of issues, in our view, could be in the public interest for the reasons we indicate in our separate opinions on Factor (iii). With respect to the delay of the proceedings, we believe that the *effective* delay of granting the petition would amount to a few months, at most. Finally, it is far from apparent that Licensee would suffer any injury from a hearing other than the inconvenience of having to modify its plans, and we consider that less important than the public interest that could be served by ventilating some of the issues raised by the Petitioner. We find, therefore, that the fifth factor weighs against Petitioner, because his participation will broaden the issues and delay the proceeding. We believe, however, that in the circumstances of this case, Factor (v) weighs lightly.

Balance of the Five Factors

We have found that Factor (i) weighs against the Petitioner; he has failed to show good cause for his untimeliness. Factor (ii), on the other hand, weighs in favor; there is no other forum in which his interests will be protected. Factor

(iii) in Dr. Paris' opinion weighs heavily in favor of the Petitioner since he believes his participation can reasonably be expected to assist in developing a sound record with regard to important issues which have been inadequately addressed, overlooked or ignored by FPL or the Staff or both. Mrs. Bowers believes that Factor (iii) weighs slightly in Petitioner's favor for the reasons stated, *supra*. Factor (iv) weighs in his favor, too; without his intervention there would be no hearing, no augmented record, and no parties to protect his interests. Finally, Factor (v) weighs against Petitioner, but in the circumstances of this case we do not weigh it heavily; his participation will broaden the issues and delay the proceeding, but a hearing on the issues would now be in the best interests of the public and the delay attributable to Petitioner's failure to file on time is of much less significance than might appear at first glance. This evaluation leads us to agree with Staff (NRC Staff Response to Supplemental Submission). On balance, the factors which must be considered for an untimely petition under 10 CFR Chapter 2.714(1) weigh in favor of our granting his petition.

STANDING

To qualify for standing Petitioner must, in addition to making a showing of interest and justifying his untimely petition, advance at least one cognizable contention and set forth the basis for that contention with reasonable specificity. Of the nineteen contentions listed in the submission dated May 2, 1979, we find that numbers 5, 6, 7, 12, and 18, when considered together with the bases set forth in the Supplemental Submission of June 5, 1979, are acceptable for litigation.³ Contention 18 questions the adequacy of the method proposed for storing the steam generator assemblies with regard to protecting the assemblies from storm floods. Contentions 5 and 12 question whether the occupational exposure during the repair, especially of transient workers, can be kept ALARA. Contentions 6 and 7 question whether the liquid effluent that will be discharged as a result of the repair will meet the requirements of Parts 20, 50, 51, and NEPA. In addition, Staff believes that Contention 2, which asserts that an environmental impact statement should be issued in connection with the repair, is acceptable, and we agree. Finally, we do not at this time rule on any of the other contentions. Whether any of them are acceptable remains to be determined in our role as the Licensing Board appointed to hear this case.

Having recognized that Petitioner's interest may be affected by the outcome of this proceeding and having accepted some of his contentions, we find that Mr. Oncavage has standing as an intervenor. Both the Intervenor and Staff have suggested that the parties should meet to try to reach

³ Mrs. Bowers is of the opinion that this situation has occurred primarily because of Dr. Paris' consideration of the contentions.

agreement on the other contentions, in the hope of reaching agreement on admissibility or entering into a stipulation. The parties should also try to agree on a realistic discovery schedule.

We urge the parties to meet as promptly as possible and request the Staff to keep the Licensing Board informed on progress.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Oscar H. Paris, Member

Elizabeth S. Bowers, Chairman

Dated at Bethesda, Maryland
this 3rd day of August, 1979.

The separate opinion concerning Factor (iii) of Dr. Paris and the dissenting opinion of Dr. Hall are attached and are a part of the Board's Order.

OPINION OF DR. PARIS:

I am in agreement with the Chairman on all matters except the weight to be given Factor (iii), the extent to which Petitioner's participation in this proceeding may reasonably be expected to assist in developing a sound record. I weigh that factor heavily in striking a balance of the five factors to be considered for an untimely petition, because I believe that the Petitioner has advanced some important issues and set forth their bases with sufficient specificity to significantly challenge the record in this case. Ms. Bowers, on the other hand, believes that Petitioner's contentions are 'bare bones' on which I have put the meat.

It is certainly true that the filings of Mr. Oncavage have been far less than perfect. Nevertheless, in my view he did succeed in advancing certain issues, especially the one concerning the proposed method for storing the steam generator assemblies, that strike one forcefully with their importance. Therefore, in dealing with the efforts of Mr. Oncavage, I have been mindful of a recent teaching of the Appeal Board in *South Texas*:

It is neither congressional nor Commission policy to exclude parties because the niceties of pleading were imperfectly observed. Sounder practice is to decide issues on their merits, not to avoid them on technicalities. [*Houston Lighting and Power Company, et al.* (South Texas Project, Units 1 and 2), ALAB-549,644 (May 18, 1979)].

To my mind the importance and immediacy of some of the issues raised by Mr. Oncavage override the deficiencies of his pleadings. Be that as it may, I am less concerned now about his ability to assist in developing a sound record than I was prior to the Special Prehearing Conference. While he came to us as a rank amateur, he has, I believe, demonstrated an ability and willingness to adapt to our procedural requirements.

In discussing the reasons that I assign a heavy weight to Factor (iii), I have, indeed, fleshed out some of the Petitioner's contentions; I cannot argue with the Chairman on that score. My detailed discussion of some of the contentions was originally developed in an effort to show my fellow Board members the importance of some of the issues raised by Mr. Oncavage. I am including those details in this separate opinion because

... it [is] the general duty of licensing boards to insure that initial decisions and miscellaneous memoranda and orders contain a sufficient exposition of any ruling on a contested issue of law or fact to enable the parties, and [the Appeal] Board on its own review, readily to apprehend the foundation for the ruling. [*Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-104, 6 AEC 179, fn. 2 (1973)].

Extent to Which Petitioner's Participation may Reasonably be Expected to Assist in Developing a Sound Record

At the Special Prehearing Conference Petitioner argued that "he will be represented by counsel" and that "he probably will be able to present witnesses who have technical expertise and are able to address the issues presented for review before the Licensing Board" (Tr. 47). Licensee said that Petitioner has failed to show how he or expert witnesses that might be presented by him could assist in developing any record involving the revised contentions (Response of FPL to Board Order of May 9, 1979, dated May 21, 1979, at 10). Licensee also claimed that commitments made to Mr. Oncavage by experts are tenuous and their areas of expertise do not coincide with matters which Petitioner wishes to litigate. (*Ibid.*) Staff said that, given the status of the record (following the Prehearing Conference), it did not believe that participation by Petitioner could significantly contribute to the development of the record (Staff Response to Board Order of May 9, 1979, dated May 23, 1979, at 1-2). Staff went on to suggest, however, that if Petitioner were to identify and give qualifications of persons committed to testify on his behalf, and to indicate the contentions they would address, it would be able to make an informed evaluation of this matter. (*Ibid.*)

Petitioner responded to Staff's suggestion in his Supplemental Submission dated June 5, 1979, telling us that Dr. Karl Z. Morgan, Neeley Professor of Nuclear Engineering at Georgia Institute of Technology, is committed to testify with regard to potential public health and safety dangers resulting from the possible escape of radioactive materials from the replaced steam generator lower assemblies, which are to be stored on the site, and also from the cooling canals, into which radioactive effluent resulting from the repair will be discharged. (at 2-4). Dr. Morgan is an internationally known health physicist with more than 300 publications in the field. He is past President of the Health Physics Society and the International Radiation Protection Association, an emeritus member of the National Council on Radiation Protection, and a member of the International Commission on Radiological Protection. (*Id.* at 2). In addition, Dr. Walter Goldberg, Associate Professor in the Department of Biology at Florida International University, is committed to present testimony with regard to possible consequences to marine life and the marine ecosystem of radioactive material which might escape from the stored replaced steam generator assemblies or from the cooling canals. (*Id.* at 3-4). Dr. Goldberg, who specializes in the study of radioecology of the marine environment, received his Ph.D. in Oceanography and is a member of the Health Physics Society. (*Ibid.*)

Petitioner implied that additional witnesses would be made available to address meteorological matters but said that names of these witnesses were not yet available. (*Id.* at fn. 2). At the Prehearing Conference we were told that Dr. Raymond McAllister, Professor of Oceanography at Florida Atlantic University, was also committed to present testimony on behalf of the Petitioner, but Dr. McAllister was not mentioned in the Supplemental Submission of May 5, 1979 (Tr. 51, 67). Apparently Dr. McAllister could

present testimony on the effect of hurricanes on water systems of the region (Tr. 51).

Finally, it is now clear that Petitioner will be represented by counsel. At the Special Prehearing Conference he was represented by an attorney who appeared for the limited purpose of that conference (Tr. 5, 55). Subsequently, Dean Rogow served his Notice of Appearance as counsel for Petitioner (see p. 186, *supra*); in addition, Joel V. Lumer and Richeard A. Marshall, Jr., filed Notices of Appearance on June 20 and July 25, 1979, respectively.

In Licensee's Response to Supplemental Petition, FPL argues at length to support its conclusion that "nothing in the Supplemental Submission indicates that the Petitioner is likely to make a contribution to a hearing, should one be conducted." (at 15; also see 2-13). Licensee focuses on the three major areas discussed in the Supplemental Submission: (1) on-site storage of the steam generator lower assemblies in an earthen floored facility, (2) occupational radiation exposure, and (3) release of radioactive effluent into the cooling canal system. (Id. 2-13). I turn now to a consideration of argument on these issues.

(1) On-site Storage of Steam Generator Assemblies

With regard to its plans to store the steam generator assemblies, Licensee argues that Petitioner has failed to indicate why its plans are inadequate, other than to point out that the assemblies will be stored in an earthen floored facility. FPL reviews the information contained in the SGRR and SER, including the facts that the facility will have a watertight roof and the steam generator assemblies will be welded closed so that "the steam generator itself will perform the function of radioactivity containment." (Id. 9-10). Licensee says that since Petitioner failed to take issue with these measures, we cannot judge that he is likely to make a significant contribution to the record with respect to this matter. (Id. 10-11).

In the list of contentions submitted by Petitioner at the Prehearing Conference on May 2, 1979, Contention No. 18 questioned whether the "proposed floorless steam generator disposal building" would be in compliance, *inter alia*, of 10 CFR Parts 50 and 51 and the National Environmental Policy Act (NEPA), but no basis for the contention was set forth. In his Supplemental Submission, however, Petitioner says, "... Professor Morgan's testimony will deal with the potential radiation dangers stemming from the method of on-site storage and release of radioactive effluent. That testimony will be elicited after laying a predicate built on meteorological data reflecting unique South Florida dangers caused by the possibility of surging tides and winds accompanying a major hurricane." (Supplemental Submission at 3, footnote omitted). With respect to Dr. Goldberg's testimony, Petitioner says, "obviously the integrity of the stored steam generator seals will be considered, since leakage upon the earthen floor, washed and drained by underground

flooding resulting from strong storm activity, could seriously damage Biscayne Bay and inland areas.” (Id. at 4). In my view the basis for Contention 18 is adequately set forth in these statements which suggest that the integrity of the proposed storage facility and of the stored assemblies could be threatened by storm tides.

Moreover, Petitioner referred to “The Licensee’s use of the 10.1 foot storm tide during Hurricane Betsy in 1965 . . .” in his Supplemental Submission (at p. 3, fn. 2). Licensee responded by pointing out that the historical 10.1 foot storm tide was mentioned in the FSAR, not the SGRR nor SER, and went on to indicate that the design of the plant safety systems is based on a predicted maximum flood stage, resulting from the maximum probable hurricane of 18.3 feet MLW. (Licensee’s Response to Supplemental Submission at 13, fn. 9; see Safety Evaluation for the Operating License, dated March 14, 1972, Section 3.4).¹ With a surge level of 18.3 feet, wave runup to above 22 feet is predicted. (*Ibid.*). The FSAR indicates that sustained winds exceeding hurricane force (75 mph) can be expected on an average of once every 7 years, and winds greater than 100 mph can be expected once every 25-30 years (FSAR, Section 2.6.6).²

The proposed storage compound for the steam generator lower assemblies will be located in the laydown area at the plant. (SGRR, App. A, “Responses to NRC Questions of 1/9/78” at A-46-1). The elevation of the laydown area is 5.0 feet. (FSAR, Fig. 1.2-1). The storage facility will be constructed of reinforced concrete walls which are designed as radiation shields, and it will have a watertight concrete roof. One end of the compound will be left open, presumably to provide access, and this end is to be closed with interlocking “stop logs.” (SGRR, App. D, “Responses to NRC Questions of 12/15/78” at D-1-1 and Fig. D.1-1). The dimensions of the facility will be 110 feet by 60 feet by 17 feet high. (*Id.*, Fig. D.1-1). There is no indication that the storage compound will be watertight to floods or that it will be designed to withstand stresses of storm surge, wave runup, or the impact of floating debris such as logs and broken timbers. Finally, I note that Licensee plans to store the steam generator lower assemblies for approximately 35 years before disposing of them off-site. (SGRR, Section 3.4.4).

The foregoing information causes me to believe it reasonable to expect that the steam generator assembly storage compound with the enclosed radioactive assemblies would be subjected to hurricanes about five times during its functional life, and I would further expect at least one of those

¹ At this stage of the proceeding, when the information on which we must base our opinion is not evidentiary, I believe that we may consider any of the information which is contained in the existing record on Turkey Point, Units 3 and 4.

² The chance of hurricane force winds occurring in any given year at Miami is 1 in 6, according to statistics presented in *Climates of the States*, Vol. 1 (Gale Research Co., Detroit, 1978; at 217, Table 2). Miami is only 25 miles north of the site.

storms to have winds in excess of 100 mph. Conceivably such a storm could produce the projected 18.3 foot tidal surge with wave runup to about 22 feet. The scenario generated by these considerations is that the storage compound would be inundated in 13 feet of moving water with waves possibly breaking over its roof. This scenario brings many questions to mind. Would the storage compound be watertight, or would the assemblies also be immersed in 13 feet of sea water? Would the walls withstand the stress imposed by moving water and wave action? Would the walls withstand the impact of floating debris thrown against them by waves? How bouyant would the sealed steam generators be?³ Might they move and consequently impact the wall from within the compound? If the walls should collapse, could the wind driven water move the assemblies away from the compound? The ability of the steam generator storage compound to withstand stresses imposed by hurricanes is not addressed in the SGRR, the SER, or the Environmental Impact Appraisal (EIA).⁴

Although the SGRR, SER, and EIA do not address the type of severe hurricane-caused accident just postulated, the SGRR and EIA do consider a breach of a steam generator seal while the assemblies are in the storage building (SGRR, Section 3.4.7; EIA, Section 4.4). This issue was raised by Petitioner in his Supplemental Submission where he discussed Professor Goldberg's testimony. (at 4). Presumably such a leak could result from corrosion caused by sea water coming into contact with the assemblies during a storm flood. Moreover, on the basis of the information available to this Board, it appears to me that the assemblies might become wet even absent a flood. They are to be stored on bare earth which almost certainly will contain moisture. In the enclosed compound I would expect the moisture content of the air to be high enough to cause dew point to be reached from time to time as temperature fluctuated. Consequently I would expect moisture to condense on the assemblies. It is common experience to persons who live and work in the vicinity of large bodies of sea water that salt spray in the air causes rapid and extensive corrosion of unprotected metal, even if the metal does not come into direct contact with sea water. Apparently the steam generator storage compound will not be airtight. (See SGRR, D.1-1). It seems reasonable to expect, therefore, that the seal welds of the assemblies may begin to corrode very soon after they are placed in the storage compound and that they could

³ A rough calculation, based on the scaled dimensions of the steam generator assemblies illustrated in Figs. 3.2-4 and A.6-3 of the SGRR and the estimated weight of 100 tons for an assembly given on p. 3-1 of the SGRR, yields an estimated specific gravity of about 0.9. If this value is reasonably accurate, the assemblies could float.

⁴ NRC Staff issued its Environmental Impact Appraisal (EIA) on June 29, 1979 [negative declaration pursuant to 10 CFR 51.5(c)].

continue to corrode more or less continuously thereafter.⁵ The stored assemblies will be surveyed quarterly. (SER at 2-16). It seems reasonable to postulate, therefore, that a breach of an assembly could occur and go undetected for many days or weeks.

Licensee says that breaching the lower assembly need not be considered because it is highly unlikely that "more than an insignificant amount of radioactivity would be dislodged from a primary side surface" of an assembly (SGRR at 3-22a). It points out that the majority of the radioactivity in an assembly is on the surfaces of the primary side in the form of a film of metal oxides which is very adherent and very refractory. (*Ibid.*) For a leak to occur, not only must an assembly be breached, but this radioactive film must be dislodged. (*Ibid.*) According to the SGRR, the three mechanisms which could dislodge radioactive material within the assemblies are: (1) thermal shock, (2) chemical/corrosive attack, and (3) mechanical shock. (*Ibid.*) FPL dismisses thermal shock because temperature changes would occur too slowly to produce it, chemical/corrosive attack because the assemblies will be seal welded, and mechanical shock because they will be surrounded by the walls of the storage compound. (*Ibid.*) Licensee concludes, therefore, "that there are no radiological accident considerations, associated with onsite storage." (*Ibid.*)

Apparently Staff was unwilling to reach such a conclusion. In the EIA it did analyze the environmental impact of a postulated breach of the seal of one steam generator assembly during storage. (Section 4.4). In the analysis Staff assumed that the radioactive material on the primary side of the assembly would be dried in place so that any that might be dislodged would come loose in flakes or pieces. Staff believes that such dislodged material would tend to remain trapped within the steam generator because of the complexity of the assembly's internals. Any flakes or pieces that might escape would, in Staff's view, tend to remain on the surface of the earthen floor of the compound, so that they "could be removed if necessary." (*Id.* at 4-13). For the purpose of its assessment, Staff assumed that only 0.1% of the total activity (1400 Ci) estimated to be in one assembly would escape through a breach. If this amount of activity were released to surface water by flooding, Staff believes that it would be diluted by the flood waters to within the maximum allowable concentration of Co-60 in water.⁶ Further, the contaminated flood water would eventually be carried to Biscayne Bay where it would be diluted still more. If, on the other hand, the released radioactivity entered ground water

⁵ The steam generator assemblies are fabricated from steel which is highly susceptible to corrosive attack by chloride ions in sea water and salt spray.

⁶ No explanation was offered by Staff for not considering the other corrosion products expected to be on the primary side of the steam generators (see Table 5.2-1 in the SGRR). Presumably it selected Co-60 because it will be the most abundant long-lived radionuclide present.

via the floor of the compound, it would migrate downward until it reached the Biscayne aquifer. (*Ibid.*) It would then migrate seaward with the hydraulic gradient. Staff says that some of the radioactive material would become fixed by ion exchange as it dispersed through the soil and notes that the radioactivity would be diluted by ground water. (*Ibid.*)⁷

I do not agree with Licensee's conclusion that the Board cannot make the judgement that Petitioner's participation in this proceeding will be likely to make a significant contribution to the record (Licensee's Response to Supplemental Submission at 11). Petitioner has alerted us to the fact that apparently neither Licensee nor Staff has considered the effect of a severe hurricane on the stored steam generator assemblies and suggested that a storm surge could cause radioactive material to be released to the environment from the storage compound. Staff's environmental assessment did address the impact of leakage from *one* of the stored assemblies, but there will be *six* assemblies in the compound when repairs have been completed on both units. If more than one assembly leaked, would the total amount of radioactivity released still fall below the maximum allowable release permitted by 10 CFR Part 20? Staff's analysis leaves other, related, questions unanswered, in my opinion. Could sea water or salt spray, or both, cause corrosion of the assemblies to occur more or less continuously after they are placed in the earthen floored compound? If so, could a leak or leaks go undetected for days, weeks, or months, in view of the fact that Licensee proposes to conduct surveillance on a quarterly schedule? Is Co-60 the *only* radionuclide that could be dislodged from the primary surface and leaked from the assemblies? If not, what justification is there for disregarding the others? I believe that these questions should be addressed by Licensee and Staff.

The foregoing consideration has convinced me that the existing record is inadequate. By raising the issue of whether the proposed plan for storing the steam generator assemblies will provide adequate protection of them from storm tides, Petitioner has, in my view, shown that his participation in this proceeding can reasonably be expected to contribute significantly to the record.

(2) Occupational Radiation Exposure

With regard to Petitioner's contention that Licensee has not shown that it will comply with the ALARA requirement of 10 CFR 20.1(c), Licensee argues that the ALARA concept "has been used by the NRC as a means of measuring environmental impacts and not as a limit upon an activity or operation." (Licensee Response to Supplemental Submission at 6). To support this

⁷ Only radioactive material in solution could undergo ion exchange, and presumably most of the material released from a steam generator would be insoluble. Fine particles could, of course, become fixed in the soil by adsorption.

argument, Licensee cites *Florida Power and Light Company* (St. Lucie Nuclear Power Project, Unit No. 2, 5 NRC 1038), in which the Licensing Board reversed its own earlier decision to impose an in-plant occupational guideline dose limit in man-rems/yr as a condition of the construction permit. FPL's argument appears to stand on a statement by the St. Lucie Board saying, "The man-rem estimate is intended as a tool for comparison with other environmental impacts of the FES." (*Id.* at 1064; see Licensee's Response to Supplemental Submission at 7). The Board, however, went on to provide a detailed explanation of why it found the establishment of a man-rem/yr limit as a condition of the construction permit inappropriate, and concluded that by requiring the Applicant to meet the requirements of Regulatory Guide 8.8, Staff could assure that the Applicant's occupation doses during operation were ALARA. (*Id.* 1062-1064).

Thus, the St. Lucie decision must be interpreted in terms of the contents of Regulatory Guide 8.8, "Information Relevant to Ensuring That Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable (ALARA)." There one finds the following statement of policy: "Merely controlling the maximum dose to individuals is not sufficient; *the collective dose to the group (measured in man-rems) also must be kept as low as is reasonably achievable*" (p. 3; emphasis added). Clearly FPL's claim that only individual dose in rems is used as a measure of occupational exposure for limiting activity, and that the man-rem concept is used only for measuring environmental impacts, is in error (Licensee's Response to Supplemental Submission at 6). Indeed, the Commission's regulatory practice requires the Licensee to take measures to assure that the man-rem dose to the population of workers who carry out the repair be ALARA.⁸ Moreover, I doubt that it is FPL's intention to practice at Turkey Point what it preaches in this proceeding, for the SGRR says, "Personnel exposures will be maintained as low as is reasonably achievable (ALARA) in accordance with 10 CFR 20.1(c) and the guidance provided by Regulatory Guide 8.8 . . ." (Section 3.3.5); also, Section 3.3.7 of the SGRR provides a man-rem assessment of the activities associated with the proposed repair.

Licensee recognizes only one of the contentions submitted by Petitioner at the May 2, 1979 Prehearing Conference as referring to occupational exposure, namely No. 5, which asks "Whether the steam generator repairs proposed by the utility [will] comply with CFR Part 20 [or] NEPA . . . ?" (Licensee's

⁸ For the record, I also believe that Licensee erred in telling us that we could not impose a man-rem limit on occupational activities absent an exception granted by the Commission under 10 CFR 2.758 (see Licensee's Response to Supplemental Submission at 8, fn. 5). An extension of that argument would prohibit Licensing Boards from imposing any condition not explicitly provided for in the regulations.

Response to Supplemental Submission at 3-4.)⁹ I agree with FPL's interpretation of this contention, but I also read Contention 12 as referring to occupational exposure (Appendix to Transcript of May 2, 1979 Prehearing Conference at 4). That contention asks, "whether the use of transient workers with unknown radiation exposure histories is in compliance with 10 CFR Parts 20, 51, or NEPA?" A basis for this contention is set forth by Petitioner on p. 3 of his Supplemental Submission where he tells us that Staff's acceptance of FPL's estimated 1300 man-rem exposure per unit as tolerable will be challenged by the testimony of Dr. Morgan, who Petitioner says recommends a 500 man-rem limit.

The NRC Generic Estimate of collective occupational whole body dose expected from a steam generator repair is 3380 man-rem. (SER at 2-9, EIA at 4-20. The difference between FPL's estimate, 1300 man-rem, and the generic estimate results from (1) the use of lower dose rates measured at Turkey Point than those used in the generic estimate and (2) the use by FPL of more dose reducing measures than were considered in the generic estimate. Staff believes that the FPL estimate is more realistic for the Turkey Point steam generator repair than the generic estimate. (EIA at 4-3). Staff reviewed Licensee's documentation of the consideration given to the guidance provided by Regulatory Guide 8.8 and concluded that FPL's effort to maintain occupational doses ALARA are acceptable. (SER at 2-10 and 2-11, EIA at 4-2).

With regard to Petitioner's Contention No. 12, which raises the question of whether the use of transient workers with unknown radiation exposure histories will be in compliance with 10 CFR Part 20, I am prompted to take notice of the publication on June 6, 1979, by the Commission of an amendment to Part 20 which is designed to control the radiation exposure of transient workers. (44 FR 32249). That amendment becomes effective on August 20, 1979. It will require Licensee to obtain information from each prospective employee as to the occupational dose received by the person during the current calendar quarter from sources outside Licensee's control, if there is a chance that the prospective employee may receive a dose in excess of 25% of the standards specified in 10 CFR 20.101(c).¹⁰ If a worker has received any occupational dose during the quarter, then the total occupational dose to the whole body which the prospective employer could permit would be determined by the limits set forth in Sections 20.101(a) and 20.101(b). Thus, the maximum *total* whole body dose that a worker could receive in one calendar quarter would be 3 rems.

⁹ Licensee also observes that Contention 1 raises the question of occupational exposure in the context of continued operation of the plant. (Licensee's Response to Supplemental Submission at 4, fn. 2). I agree with Licensee that this matter is outside the scope of this proceeding because it does not deal with an issue related to the proposed steam generator repair.

¹⁰ That threshold dose to the whole body would be 25% of 1-1/4 rem, or about 0.31 rem.

The time period within which the steam generator repair is to be carried out, 6 to 9 months, and the foregoing requirements of 10 CFR Part 20 will make it necessary for Licensee to hire a large number of workers to complete the repair. (See SER at 1-1). If, to be conservative, one assumes that one unit can be repaired in 6 months and that the total group exposure will be 1300 man-rem, Licensee would have to be able to hire a minimum of 217 workers, all of whom report to work with (1) zero exposure during the calendar quarter in which the repair job is initiated and (2) an accumulated occupational whole body dose which is at least 6 rems less than the limit calculated according to the formula set forth in Section 20.101(b) (2).¹¹ Licensee has estimated that the repair will require about 300 workers (SGRR at 6-1, Section 6.3). Presumably this estimate did not account for the recent amendment to Part 20 which controls the total occupational dose of transient workers and therefore the total number of workers that will be required could be greater than 300. Will it be possible for Licensee to recruit the number of skilled workers required for the job so as to be assured of complying with the standards set forth in 10 CFR 20.101? I believe that this question should be addressed by Licensee and Staff.

Is the estimated group exposure, 1300 man-rem, ALARA pursuant to 10 CFR 20.1(c)?¹² Staff believes that it is. (SER at 2-10 and 2-11). Petitioner has indicated his disagreement (Supplemental Submission at 3). Is this issue litigable, and, if so, has Petitioner shown that it can be reasonably expected that his participation will contribute significantly to the record? First, I note that any decisions with regard to whether occupational exposure is ALARA, whether Staff's, Petitioner's, or this Board's, must be reached subjectively. There are no guidelines for evaluating occupational exposure such as the guidelines for evaluating radiation exposure to the general public that are set forth in 10 CFR Part 50. In *Prairie Island* and *Vermont Yankee* (Northern States Power Co. and Vermont Yankee Nuclear Power Corp., ALAB-455, 7 NRC 41, 57-59) the Appeal Board looked at this problem and in conclusion said,

In sum, whatever might be the merit of simply carrying over the Appendix I monetary values into Part 20, it cannot be done unless and until the Commission sanctions it. Our point here, once again, is that, whether or not that course is followed, there appears to be manifest justification for providing utilities, the Staff, the concerned public, and the adjudicatory boards with considerably more guidance than is now contained in Part 20 with respect to how the ALARA standard should be applied for the purposes of occupational exposure. (*Id.* at 59).

¹¹ This section of Part 20 sets the limit for accumulated whole body dose at 5(N-18), where "N" equals the individual's age in years.

¹² Licensee believes that the group exposure could range from 650 to 1450 man-rem per unit, because of uncertainties with regard to man-hour requirements and radiation fields. (SGRR, Section 3.3.7.1).

Given the uncertainty which surrounds the issue of applying the ALARA principle to occupational exposure, I believe that the issue deserves litigation. In addition, I believe that the testimony which would be developed in connection with Petitioner's Contention Nos. 5 and 12 can be expected to contribute significantly to the record with regard to whether the radiation exposure of transient workers and the total occupational exposure of the group of workers will comply with the Standards contained in 10 CFR Part 20. I conclude, therefore, that there is reasonable expectation that Petitioner's participation will assist in developing a sound record with regard to occupational exposure.

(3) Release of Radioactive Effluent Into the Cooling System

In Contentions 6 and 7, Petitioner questions whether primary coolant and laundry waste water which must be stored or discharged as a result of the steam generator repair will comply with the requirements of Parts 20, 50, 51, or NEPA (Appendix to Transcript of the May 2, 1979, Prehearing Conference at 3). Further, in the Supplemental Submission Petitioner contends that hurricane tides surging over the cooling canal system could result in the escape of radioactive materials into the surrounding environment. (at 3-4). Licensee responded by telling us that any liquid effluent released into the canal system will be controlled so as to meet the Turkey Point Technical Specifications under the plant's Operating Licenses. (Licensee's Response to Supplemental Submission at 12). According to the SER, the projected releases due to the repair program are expected to be well within the plant's Technical Specification limits. (at 2-13). Staff added, however, that it had not completed its evaluation of the Appendix I information provided it by Licensee. (*Ibid.*). To the extent that Staff has not determined whether the current Technical Specifications will be reduced as a result of its review of the Appendix I evaluation, it appears that ventilation of the issues raised by Contentions 6 and 7 would contribute to the soundness of the record. If that situation has changed, this matter could be settled by stipulation or summary dismissal.

I conclude that the record with regard to the release of radioactive material to the cooling canal system is incomplete. Therefore I find that there is reasonable expectation that Petitioner's participation with respect to his Contentions 6 and 7 would assist in developing a sound record.

Conclusion with Regard to Factor (iii)

Based on the foregoing considerations, I conclude that the participation in this proceeding by Mr. Oncavage can reasonably be expected to contribute significantly to the development of a sound record. Accordingly, I find that the third factor weighs heavily in his favor.

Dissent by Dr. David B. Hall

The question before this Board is not should the petitioner be admitted to a hearing, but rather should a hearing be convened to resolve contentions advanced by the petitioner. I submit that an affirmative finding on the latter question requires a stronger showing than has been put forth by Mr. Oncavage.

I believe the request for a hearing by Mark P. Oncavage should be denied. The petition for a hearing is admittedly very late. The sole justification for lateness is that crucial documents were missing from the local Public Document Room. The crucial document to which Petitioner refers is a letter from FPL to NRC transmitting a proposal for replacement of deteriorating steam generator assemblies. Petitioner does not explain the "crucial" nature of the letter nor why it was needed to initiate his petition for a hearing.

Petitioner has not demonstrated to my satisfaction that his participation in a hearing will make a useful contribution to the record. He has not controverted any fact, statement or conclusion made by the Staff in its SER or by the Licensee in its SGRR. In his original (revised) petition to intervene and in subsequent submissions. Petitioner has posed questions asking for information without claiming that the information sought was not available to him or that there were omissions in the Staff or Licensee documents.

Many of the questions posed by the petitioner as his "list of contentions" have reference to the compliance, or lack thereof, with the Federal Water Pollution Control Act (FWPCA) and, as such, is not within the jurisdiction of the NRC. Other questions imply that an environmental impact statement (EIS) should be prepared for the proposed action. No basis is given by the petitioner for such a requirement. At the time of the prehearing conference, the Staff counsel discussed the status of the environmental evaluation (Tr. 79). Although a determination as to the form of its appraisal was not available at that time, the Staff subsequently (June 29, 1979) published an Environmental Impact Appraisal and a determination that an EIS need not be prepared. This conclusion was challenged by the petitioner in advance during the prehearing conference (Tr. 61, 84). The Staff ambivalently concludes that "... contention 2, which asserts that an environmental impact statement should issue in connection with the proposed action, forms the basis for an acceptable contention . . ." I do not agree. There is nothing in the record to support a conclusion of major impact on the environment within the meaning of 10 CFR 51.5(a) (10).

The supplemental submission of petitioner Mark P. Oncavage informs us that Professor K. Z. Morgan will address the occupational radiation exposure problem created by the proposed repairs. In this submission, Petitioner compares an estimated 1300 man-rem exposure with Professor Morgan's recommendation of 500 man-rem contained in a recent *New Scientist* article. This is either a careless misquotation or a deliberate distortion. Dr. Morgan,

in the cited article, proposes "500 man-rem *per 1,000 megawatt (electrical) years*" [emphasis added]. Licensee has estimated (and the Staff has accepted the estimate) that the repair of the steam generators will allow the occupational dosage to be reduced from its present experience of 500 man-rem per year to 100 man-rem per year.

Professor Morgan is a well known authority on the effects of low level radiation, but that is not at issue here, nor is the effect of radiation on marine life, the specialty of Professor Goldberg. The regulations in 10 CFR 20 give the Commission standards for protection against the effects of radiation. Licensee has stated its intention to comply with the requirements of the Commission Regulations including the provisions to maintain exposures as low as reasonably achievable (ALARA). Absent a specific challenge, I see no reason to question the full compliance on the part of the Licensee with the applicable Regulatory Guides and Commission Regulations.

In considering the criteria for granting untimely petitions for intervention, as promulgated in 10 CFR 2.714(a), my analysis of the record before us can be summarized as follows:

(i) Good cause, if any, for failure to file on time. Petitioner has not given any good cause for his untimely filing.

(ii) Availability of other means of protecting interest. Petitioner has no other forum to protect his interests.

(iii) Extent to which petitioner may be expected to assist in developing a sound record. The principal documents comprising the record of this Proceeding, viz., the SER, SGRR, and EIA, give evidence of the concern on the part of the Licensee and of the Staff for protection of the environment and for limiting occupational exposure in accordance with 10 CFR 20.1(c) (ALARA). It is obvious that the record can be expanded but nothing which has been submitted by the petitioner convinces me that his participation will improve the record. In my opinion, the record as it stands is sufficient to support the conclusion arrived at by the Staff in its Safety Evaluation (p. 4-1).

(iv) Representation of petitioner's interest by existing parties. This is not applicable since there is no hearing yet, thus no parties.

(v) Broadening the issues or delaying the proceeding. If a hearing were granted, the Board would have discretion to admit only those contentions it regards as valid, thus the extent to which the issues are broadened will ultimately rest with the Board. It is possible that a hearing may result in a delay of the Licensee's current schedule but, as of August 1, 1979, that schedule is not known to the Board.

I would deny the late petition to intervene by Mark P. Oncavage as being without substance or merit.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Glenn O. Bright
Frank F. Hooper

In the Matter of

Docket No. 50-358 OL

CINCINNATI GAS AND ELECTRIC
COMPANY, et al.

(William H. Zimmer Nuclear Station)

August 7, 1979

The Licensing Board admits three new contentions to operating license proceeding.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

The factual accuracy of a petitioner's contentions is a matter to be resolved at an evidentiary hearing or through summary disposition procedures, not through rejection of a pleading.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

New information may justify admission of late-filed contentions. *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2), CLI-72-25, 5 AEC 13, 14 (1972).

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

The "lateness" factors specified in 10 CFR 2.714(a) are applicable only to contentions submitted by parties admitted under that section of the rules; however, a municipality admitted as a party under that section has a right to raise other issues under 10 CFR 2.715(c). It is therefore not appropriate to apply strictly the 2.714(a) factors to a municipality seeking admission of late-filed contentions.

MEMORANDUM AND ORDER ADMITTING NEW CONTENTIONS

We have before us requests by two parties to this operating license proceeding to admit three additional contentions. Miami Valley Power

Project (MVPP) on April 30, 1979 asked us to admit a proposed Contention 17, dealing with the adequacy of fire protection insulation material (Kaowool) planned to be used in the electrical cable trays. The city of Cincinnati, in a motion dated May 18, 1979, sought admission of two new contentions seeking continuous radiological air monitoring (to be referred to herein as proposed Contentions 18 and 19). Later, during the course of the evidentiary hearings in June, 1979, Cincinnati submitted new versions of both of its proposed new contentions (Tr. 2074-75).

The Applicants oppose the admission of all three contentions (memoranda dated May 9, 1979 (MVPP contention), June 4, 1979 and July 16, 1979 (Cincinnati contentions)). The NRC Staff opposes the admission of the MVPP contention (memoranda dated May 7 and May 15, 1979), but it would admit the revised versions of Cincinnati's contentions (Tr. 2077). We held oral argument with respect to these contentions (Tr. 164-177, 463-465, 2070-89). For reasons hereinafter set forth, we admit all three of them.

1. In opposing the proposed MVPP contention, the Applicants emphasize its lateness. Both they and the Staff would balance the five factors specified in 10 CFR 2.714(a) for dealing with late-filed contentions (see 10 CFR 2.714(b)) against admission of the contention. Our balancing of those factors, however, leads us to a different conclusion.

The first factor is whether or not there is "good cause" for the delay. It is true that the contention was not submitted until April 30, 1979, more than years after the initiation of this proceeding. MVPP bases its contention, however, on tests performed during September, October, and November, 1978, and January, 1979, the results of which were transmitted to the Commission (and the parties) on March 1, 1979 and presumably did not reach the parties until March 6, 1979 (see 10 CFR 2.710). MVPP claims that the test report was examined in mid-March by Mr. Edwin Hofstadter, a former employee of the company which performed the test (who has appeared for MVPP as a witness with respect to other contentions) and that Mr. Hofstadter's examination revealed that tests on insulation material were inadequately performed. Thereafter, MVPP asserts, Mr. Hofstadter confidentially secured details of another, earlier test of the insulation material by Underwriters Laboratories, about which he previously had been unaware, and discovered that "the test of the material was actually a failure." This course of events, according to MVPP, constitutes "good cause" for its delay to April 30, 1979 in filing the proposed contention. We agree.¹

With respect to the second factor, MVPP claims that, because no contention regarding the adequacy of the insulation material is being

¹ We find nothing to support the Applicants' suggestion (Tr. 168) that Mr. Hofstadter knew anything about the Kaowool test by Husky Products as a result of his employment there. Mr. Hofstadter left Husky Products on August 4, 1978 (Tr. 1471), prior to the conduct of the test in question

considered, there is no other means available to protect its interest in seeing that all safety requirements are met. This argument may be more relevant to the fourth factor (concerning whether another party will represent MVPP's interest in this contention). But, in any event, MVPP does not appear to have available to it any other means to protect its interest.² With respect to both the second and fourth factors, the Applicants claim that the Staff will represent the public interest and, by inference, MVPP's interest as well. Although the Staff clearly represents the public interest, it cannot be expected to pursue all issues with the same diligence as an intervenor would pursue its own issue. Moreover, unless made an issue in this proceeding, it would not attempt to resolve the issue in an adjudicatory context. Giving all possible deference to the adequacy of the Staff's review, we conclude that the Applicants' reliance on the Staff review gives inadequate consideration to the value of a party's pursuing the participational rights afforded it in an adjudicatory hearing.

The Applicants and Staff each stress that MVPP has failed adequately to address the third factor — the extent to which its participation may reasonably be expected to assist in developing a sound record. They each emphasize that the test reflected by the March 1 report, upon which MVPP relies, is not relevant to this proceeding inasmuch as the Staff, by letter to the Applicants dated April 19, 1979, declined to accept its results as fulfilling applicable requirements. The Staff, however, has qualified this position by stating that if MVPP were also challenging an earlier test upon which the Staff is relying, the contention would be relevant. At oral argument, MVPP in fact confirmed that it is indeed challenging such earlier test (Tr. 175). Moreover, it is clear to us that MVPP is raising a question as to adequacy of the cable tray insulation material generally and that the Staff is not yet entirely satisfied with the proposals heretofore submitted by the Applicants (Tr. 174). We note that the Applicants recently sent us (as well as the Staff and other parties) copies of a report of yet another test of the insulation material, performed in June, 1979 — clearly reflecting that the issue raised by MVPP is still open.

The Applicants and Staff also indicated that MVPP had not demonstrated that it would produce an expert witness with adequate credentials to address the proposed contention. MVPP advised the Board, however, that it would rely on Mr. Hofstadter's son, who assertedly was formerly the project engineer in the fire protection department at Underwriter's Laboratories (Tr. 176). We are not prepared to find MVPP's proposed witness to be unqualified on the basis of what is now before us.

² A limited appearance statement would clearly not suffice. *Nuclear Fuel Services, Inc.*, (West Valley Reprocessing Plant), CL1-75-4, 1 NRC 273, 276 (1975); *Duke Power Company* (Oconee-McGuire), ALAB-528, 9 NRC 146, 150 (1979).

In addition, the Applicants contest the factual accuracy of a number of MVPP's assertions. This is a matter to be resolved at an evidentiary hearing, or through summary disposition procedures, not through rejection of a pleading.

Finally, turning to the fifth factor, the Applicants claim that admission of this contention will delay the proceeding. At the time they made this claim, the evidentiary hearing on all issues was scheduled for late June, 1979, and the contention could clearly not have been heard at that time. But, as reflected in our Pre-hearing Conference Order of June 4, 1979, hearings on many issues have been deferred until the fall of 1979, and admission of the contention would not appear to preclude its being heard along with other issues scheduled at that time.

In short, *all* of the factors of 10 CFR 2.714(a) balance in favor of admitting this contention. Given the potential importance of the questions raised, we admit the contention.

2. Cincinnati's two proposed contentions were submitted at an even later date, but the factors governing their acceptance differ from those which we discussed in conjunction with the MVPP contention. For, as the Staff has pointed out (Tr. 2077), Cincinnati would have the right to raise these issues as an "interested . . . municipality," within the meaning of 10 CFR 2.715(C). The "lateness" factors specified in 10 CFR 2.714(a) are applicable only to contentions submitted by parties admitted under that section of the rules. Cincinnati, of course, was admitted as a party under 10 CFR 2.714(a).³ But it nevertheless has a right to raise other issues under 10 CFR 2.715(c). *Project Management Corporation* (Clinch River Breeder Reactor Plant), ALAB-354, 4 NRC 383, 392-93 (1976). For that reason, we agree with the Staff that it is inappropriate to apply strictly the Section 2.714(a) factors in determining whether to accept Cincinnati's contentions.

As the Staff also has pointed out, monitoring of the facility's radioactive releases is the subject of one of Dr. Fankhauser's contentions already accepted in this proceeding — namely, Contention 2. The evidentiary hearing on this contention has been deferred pending the completion of certain Staff studies undertaken in response to the Three-Mile Island accident. The Commission may well develop new standards to govern this area. In these circumstances, admission of Cincinnati's new contentions should not unduly broaden the issues to be heard or result in any substantial delay in the proceeding.⁴

³ At the time of Cincinnati's admittance, the provisions of Section 2.715(c) extended only to "interested States" and did not include cities or municipalities.

⁴ It is true that Cincinnati's contentions overlap Dr. Fankhauser's Contention 2 to some extent. The Commission had held, however, that the representative of a private party cannot be expected to represent adequately the presumably broader interests represented by a governmental body. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975).

Although we are not required to balance the factors in 10 CFR 2.714(a) with respect to Cincinnati's late-filed contentions, we believe that a brief comment on certain of the Applicants' claims made in balancing those factors would be in order. First, they claim that Cincinnati's reliance on the Three-Mile Island accident as reason for raising the late contentions is misplaced, inasmuch as the Zimmer station's emergency plan (appearing in the FSAR) is designed to accommodate an accident with consequences more severe than occurred at Three-Mile Island. While that may be so, it misses the point that Cincinnati is making: that the response to the accident at Three-Mile Island (which presumably was also designed to accommodate a greater accident) was so inadequate as to give rise to a need for further study of the imposition of additional requirements (monitoring and otherwise). In our view, the Three-Mile Island accident provided a sufficiently different focus for viewing monitoring and emergency response plans as to constitute new information of the type which can justify admission of late-filed contentions. See *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2), CLI-72-25, 5 AEC 13, 14 (1972).

Second, the Applicants would condition the admission of any new air monitoring contentions on adoption by the Commission of new regulations. Any such new regulations must, of course, be taken into account in reaching our decision. But the Commission's current regulations do not appear to be so restrictive as to preclude granting of the relief sought by Cincinnati.

Finally, the Applicants claim that Cincinnati has not sufficiently specified the monitoring equipment it would have installed and whether the monitoring requirements it seeks concern routine releases or accident conditions. At the oral argument, Cincinnati made it very clear that it sought monitoring of all releases exceeding the levels specified in 10 CFR Part 50, Appendix I (Tr. 2087-88). Whatever category those releases fall into — at their upper limit, they certainly would encompass accident situations — Cincinnati has adequately defined the releases it wishes to be monitored. Moreover, Cincinnati has specifically stated that it desires continuous monitoring with readouts directly to the City (Tr. 2088). Whether equipment is available to accomplish such monitoring, and whether such monitoring would be useful or necessary, are evidentiary matters going to the merits of the contentions.

In short, we find ample reason to accept Cincinnati's new contentions, even if a balancing of the 2.714(a) factors were required.

3. The following schedule will govern the consideration of these contentions:

1. Discovery commences Issuance of this Order.

- | | |
|--|---|
| 2. Last day for submission of discovery requests | August 24, 1979 or (with respect to Contentions 18 and 19) 10 days following service of the Staff's recommendations for monitoring and emergency plans arising from the TMI accident, whichever is later. |
| 3. Responses to discovery requests | Within 15 days after service of request. |
| 4. Requests for summary disposition | Not later than 45 days prior to scheduled hearing dates. |
| 5. Responses to requests for summary disposition | Within 20 days after service of request. |
| 6. Filing of testimony | 15 days prior to start of evidentiary hearings. |

For the foregoing reasons, the three new contentions listed in the Attachment to this Memorandum and Order are *admitted*.⁵

IT IS SO ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland, this 7th day of August, 1979.

Attachment:
New Contentions

⁵ This Memorandum and Order was drafted prior to our receipt of the city of Cincinnati's "Response to Applicants' Supplemental Response to city of Cincinnati's Motion for Leave to Amend Its Petition For Leave to Intervene," dated July 31, 1979. Because such pleadings are not authorized without prior leave from the Board (see 10 CFR 2.730(c)), and because Cincinnati did not seek such leave, we grant the Applicants' August 2, 1979 motion to strike Cincinnati's "Response."

ATTACHMENT NEW CONTENTIONS

17. Fire insulation material which is being used to protect the cables in the cable trays from fire is inadequate to protect the cables in light of the cable tray installation design and cable tray load. The tests of the fire insulation material were improperly performed in that conditions which will exist during operation were not adequately simulated.
- 18-19. Adequate regard for the health and safety of the citizens of Cincinnati requires that the Zimmer Nuclear Power Station not be licensed for operation with an early warning and detection system which provides for:
 18. The continuous transmittal of monitoring data capable of showing releases from the plant in excess of 10 CFR Part 50, Appendix I levels, with the capability of making a permanent record thereof, to the appropriate city agencies from continuous stack monitors already provided for at the station, and from any such other known paths of radioactive emissions into the air from the plant.
 19. A system of continuous air monitors to be situated in such a manner as to have the capability of detecting the direction and radioactive content of airborne radiation or radioactive plumes from plant releases in excess of the levels prescribed in 10 CFR Part 50, Appendix I, which monitors shall have the capability of making a permanent record of the monitoring data received and analysed on a continuous basis, and the data from which can be transmitted continuously to appropriate city agencies.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

**Hugh K. Clark, Chairman
Dr. Donald P. de Sylva
Gustave A. Linenberger**

In the Matter of

**PHILADELPHIA ELECTRIC
COMPANY
(Fulton Generating Station,
Units 1 and 2)**

**Docket Nos. 50-463
50-464**

August 8, 1979

The Licensing Board denies petitioner's request for an order to show cause why the application in this case should not be terminated. Treating petitioner's request alternatively as a motion under 10 CFR 2.605, the Board also denies that request without prejudice to renewal at an appropriate time.

NRC: JURISDICTION

The Commission need not promulgate general rules to exercise its powers. *Union Electric Company* (Callaway Plant, Units 1 and 2), ALAB-527, 9 NRC 126 (1979).

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

In the context of proceedings before the Commission, an order to show cause is a remedial step in dealing with failure to meet required standards of conduct.

SITE SUITABILITY: EVALUATION

A partial decision on site suitability is not a sufficient basis for the issuance of a construction permit or for a limited work authorization. Neither of these steps can be taken without further action which includes the full review required by Section 102(2) of NEPA and by 10 CFR 51.

LICENSING BOARD: DISCRETION IN MANAGING PROCEEDINGS

Licensing Boards have wide authority over the parties, including the staff, on matters pertaining to the hearing; but only in most unusual circumstances, should a Board interfere with the staff's review functions. *Offshore Power Systems*, ALAB-489, 8 NRC 194 (1978).

MEMORANDUM AND ORDER REPETITION TO TERMINATE DOCKET AND TO QUASH PREAPPLICATION AND EARLY REVIEW OF SITE SUITABILITY

On July 3, 1973, Philadelphia Electric Company (Applicant) filed an application for a permit to construct two 1160 MWe high temperature gas cooled reactors (HTGRs) in Fulton and Drumore townships, Lancaster County, Pennsylvania. The application was docketed on November 16, 1973 and subsequently a Notice of Hearing on Application for Construction Permit was published in the Federal Register.¹ Pursuant to that notice, a number of persons or groups filed petitions to intervene and were admitted as parties to the proceeding. In addition, the States of Pennsylvania and Maryland were admitted as interested states.

During 1974 and part of 1975, there was extensive discovery among the parties as well as detailed negotiations relating to stipulations on contentions. Also during this period, the Commission's Staff (Staff) prepared and issued its Safety Evaluation Report and Supplement and the Draft and Final Environmental Statements on construction of a facility utilizing the HTGRs proposed by Applicant.

By letters dated September 17, 1975 and February 19, 1976, Applicant informed the Atomic Safety and Licensing Board (Board) that its nuclear steam supply system vendor would no longer proceed with work relating to the Fulton facility, that Applicant had suspended design and analysis work on the facility, and that it would undertake an evaluation of available options for baseload generating capacity for the period from the mid-to-late 1980's. The Fulton construction permit proceedings, as well as the Staff review of the Fulton application, thereupon assumed a suspended, inactive status, and remained inactive until the latter part of December 1978.

On December 29, 1978, Applicant filed Amendment No. 32 to its construction permit application. Therein, Applicant sought an adjudicatory early site suitability review for the Fulton site pursuant to 10 CFR 2.101(a-1) and Subpart F to 10 CFR Part 2.

On May 14, 1979, the Save Solanco Environment Conservation Fund (Petitioner), an admitted intervenor and party to this proceeding, filed a "Petition to Terminate Docket and To Quash Preapplication and Early

¹ 38 Fed. Reg. 34484 (December 14, 1973).

Review of Site Suitability.” The Petitioner requests that the Board order the Applicant to show cause why its application, including the application for an early site review, should not be terminated. While not very clearly worded, the Petitioner’s contentions may be summarized thus:

(a) The application for an early site review is defective because no specific reactor type is proposed.

(b) The accident analysis relied upon for demonstrating site suitability is invalid.

(c) Objections of local governing bodies show that an early site review is not in the public interest.

(d) An early site review would be so incomplete as to be a violation of the National Environmental Policy Act (NEPA).

Petitioner erroneously assumes that Applicant’s request for adjudicatory early site review falls under Appendix Q, 10 CFR Part 50. Actually, as stated hereinabove, the current proceedings are pursuant to 10 CFR 2.101(a-1) and Subpart F of 10 CFR Part 2. We will proceed as though the Petition cited the applicable regulations.

The Petitioner’s prayer for relief requests an order on Applicant to show cause why its application should not be terminated, including the application for an adjudicatory early site suitability review. No such order is mentioned specifically in the Commission’s regulations. However, the Commission need not promulgate general rules to exercise its powers.² Moreover, if the Commission has provided rules for the use of orders to show cause, such rules should provide clues as to the type of situations in which it deems such orders to be appropriate. Subpart B of Part 2 of the Commission’s Rules of Practice, 10 CFR 2.200 *et seq.*, authorizes certain members of the Staff to issue orders to show cause in situations where licensees have failed to live up to standards of conduct required of them by statute, regulation, rule, board action, or licensing conditions. The order must state the remedy, allege facts deemed sufficient grounds for the proposed action, inform the licensee of its right to demand a hearing before a board appointed for that specific purpose, and other details, all as set forth in 10 CFR 2.202. Also an individual who knowingly makes, or knowingly causes to be made, an *ex parte* communication in violation of 10 CFR 2.780 is subject to an order to show cause why remedial action should not be taken. 10 CFR 2.780(h) (amendment May 4, 1979, Supplement Number 9 to 10 CFR issued May 10, 1979). Although not called an order to show cause, a similar procedure is provided in dealing with

² In the Matter of *Union Electric Company* (Callaway Plant, Units 1 and 2), ALAB-527, 9 NRC 126 (1979).

attorneys who appear before boards and who fail to comply with required standards of conduct. (10 CFR 2.713). In other words, in the context of proceedings before the Commission, an order to show cause is a remedial step in dealing with failure to meet required standards of conduct. The Petition dealt with herein does not make allegations of any such failure. It must be denied.

In dealing with a pleading such as this Petition, an effort should be made to deal with its merits and to avoid an abrupt denial solely because of form. Both the Applicant and the Staff have filed briefs in which they have addressed themselves to the merits as though the pleading had been a motion under 10 CFR 2.605 to request that the Commission decline to initiate an early hearing or render an early partial decision on an issue or issues of site suitability. The pleading will be considered as though it were such a motion.

In its response, dated June 4, 1979, to the Petition, the Staff stated that it was currently reviewing Applicant's early site review application for acceptability; that it had not yet determined whether the application is sufficiently complete under 10 CFR 2.603(b)(1); and had not issued the notice of acceptability on the application in accordance with 10 CFR 2.603(c).

These early site review regulations provide for a detailed review of site suitability matters by the Staff, an adjudicatory hearing directed toward the site suitability issues proposed by the Applicant, and the issuance by a licensing board of an early partial decision on site suitability issues. It should be noted that a partial decision on site suitability is not a sufficient basis for the issuance of a construction permit or for a limited work authorization. Neither of these steps can be taken without further action, which includes the full review required by Section 102(2) of the National Environmental Policy Act of 1969, as amended (NEPA), and by 10 CFR 51 which implements NEPA (see 10 CFR 2.606). In other words, the early partial decision on site suitability does not authorize or license the Applicant to do anything. It does provide Applicant with information of value to Applicant in its decision to either abandon the site or proceed with plans for the design, construction, and operation of a specific nuclear power plant at that site. Implementation of any such plans is dependent upon further review by the Staff and approval by a licensing board.

Petitioner's contentions (a), (b), and (c) address the substance of the Applicant's request for an adjudicatory early site suitability review. At the present time the Board does not have before it the results of the Staff's docketing and review activities. The Board is not in a position to act on these contentions until the Staff has first performed its duties. Moreover, the docketing and review activities of the Staff are not under the supervision of the Board.

In a context different from the present proceeding, the nature of the licensing process has been well summarized by the Supreme Court³:

In order to obtain the construction permit, the utility must file a preliminary safety analysis report, an environmental report, and certain information regarding the antitrust implications of the proposed project. See 10 CFR 2.101, 50.30(f), 50.33(a), 50.34(a). This application then undergoes exhaustive review by the Commission's staff and by the Advisory Committee on Reactor Safeguards (ACRS) . . . Both groups submit to the Commission their own evaluation, which then becomes part of the record of the utility's application. See 42 U. S. C. 2039, 2232(b). The Commission staff also undertakes the review required by the National Environmental Policy Act (NEPA), 42 U. S. C. 4321, *et seq.*, and prepares a draft environmental impact statement, which, after being circulated for comment, 10 CFR 51.22-51.26, is revised and becomes a final environmental impact statement. 10 CFR 51.26. Thereupon the three-member Atomic Safety and Licensing Board conducts a public adjudicatory hearing, 42 U. S. C. 2241, and reaches a decision which can be appealed to the Atomic Safety and Licensing Appeal Board, and, in the Commission's discretion, to the Commission itself. 10 CFR 2.714, 2.721, 2.786, 2.787. The final agency decision may be appealed to the courts of appeals. 42 U. S. C. 2239; 28 U. S. C. 2342.

A more detailed analysis of the relationship between the Staff and licensing boards has been made recently by the Atomic Safety and Licensing Appeal Board.⁴ This analysis indicates that licensing boards have wide authority over parties to a hearing, including the Staff, on matters pertaining to the hearing. Only in most unusual circumstances (not present here) should a licensing board interfere in the review activities of the Staff. A ruling on the Petitioner's contentions (a), (b), and (c) would be premature and an infringement on the Staff's function. Treating the Petition as a motion under 10 CFR 2.605, the Motion is denied as to contentions relating to substance. This denial is without prejudice to renewal at a more appropriate time.

Petitioner's contention (d) appears to be an attack on the Commission's regulations as being inconsistent with NEPA. Attention is directed to 10 CFR 2.606, which requires full compliance with NEPA, and which regulation is discussed briefly above. A licensing board is without authority to rule on such an attack. See 10 CFR 2.758. As to this contention, the Motion is denied.

The Petition also requests certification to the Commission of such of the issues presented as this Board deems necessary. After consideration of the

³ *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U. S. 519, 526-27 (1978) (footnotes omitted). See also *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 523-526 (1977).

⁴ In the Matter of *Offshore Power Systems*, ALAB-489, 8 NRC 194 (1978).

issues presented and the Board's rulings on such issues, certification to the Commission is not deemed necessary as to any of them. As to this request, the Motion is denied.

In Summary:

(1) The Petitioner's request for an order to show cause is denied.

(2) Treating the Petition as a motion under 10 CFR 2.605:

(a) As to matters of substance, the Motion is denied without prejudice to renewal thereof.

(b) As to the challenge to the Commission's regulations, the Motion is denied.

(c) As to the request for submission of issues to the Commission, the Motion is denied.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Hugh K. Clark, Chairman

Dated at Bethesda, Maryland
This 8th day of August, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Frank F. Hooper, Member
Glen O. Bright, Member

In the Matter of

**CINCINNATI GAS AND
ELECTRIC COMPANY,
et al.**

**Docket No. 50-358 OL
70-2838**

**(Materials License
SNM-1823)**

(William H. Zimmer Nuclear Station)

August 15, 1979

The Licensing Board denies intervenors' motion to delay delivery of unirradiated fuel to the facility.

LICENSING BOARD: JURISDICTION

Under 10 CFR 2.717(b) a Part 70 license is an "order" which may be "modified" by a licensing board delegated authority to consider a Part 50 operating license.

RULES OF PRACTICE: CONTENTION, ADMISSIBILITY OF

The economic costs of unirradiated fuel shipments, storage and insurance, in themselves, may not be considered in an NRC licensing proceeding either under NEPA or under the Atomic Energy Act. Under the latter act, economic costs become relevant only insofar as they bear on an applicant's financial qualifications.

ATOMIC ENERGY ACT: EMERGENCY MEASURES

As a matter of law, there are no requirements for training of the populace in the communities through which unirradiated fuel will be shipped, to cope with transportation accidents involving such fuel.

APPEARANCES

Mr. Troy B. Conner, Jr., Washington, D. C. For the Cincinnati Gas and Electric Co., *et. al.*, Applicants

Ms. Leah S. Kosik and Mr. James H. Feldman, Jr., Cincinnati, Ohio

For the Miami Valley Power Project, Intervenor

Dr. David Fankhauser, Intervenor, *pro se*

Mr. Peter Helle, Cincinnati, Ohio

For the City of Cincinnati, Intervenor

Mr. Lawrence Brenner

For the Nuclear Regulatory Commission Staff

MEMORANDUM AND ORDER DENYING MOTION TO DELAY DELIVERY OF FUEL TO THE SITE

During the course of the evidentiary hearing on August 7, 1979, the Miami Valley Power Project (MVPP), an intervenor in this operating license proceeding, filed a motion to "delay delivery of fuel" to the site of this facility. Later the same day, Dr. Fankhauser, another intervenor in this proceeding, orally stated that he was seeking similar relief (Tr. 2323). On August 9, 1979, we held oral argument on these motions (Tr. 2988-3042). The Applicants opposed the motions, both on jurisdictional grounds and on the merits. The NRC Staff supported our jurisdiction to consider the motions but urged that we deny them on the merits. The city of Cincinnati supported the motions. As we announced at the hearing on August 10, 1979 (Tr. 3046-49), we agree with the Staff both that we have jurisdiction to entertain the motions and that the motions should be denied. Our reasons for these conclusions (which we set forth in outline form at the August 10 hearing) follow.

1. What is involved in these motions is unirradiated fuel. As all parties recognize, shipment of the fuel to the Zimmer site was authorized by a Commission license issued pursuant to 10 CFR Part 70 on June 26, 1979 (Materials License SNM-1823).¹ MVPP's motion was based on its belief that the fuel is to be shipped to the site in the near future (a premise which we accept for the purposes of this motion) and its further belief that, because of the Applicants' announced delay of the fuel loading date until July, 1980, no shipment in the near future is required. According to MVPP, shipment will result in increased storage and insurance costs for the Applicants (and, more particularly, its ratepayers, including MVPP members). Further, the presence of "highly toxic" nuclear fuels assertedly constitutes "an inherent risk to the health and safety of area residents." If the operating license is eventually

¹ On June 19, 1979, the Staff advised the Board and the parties of the existence of this license (Tr. 551). By letter dated July 3, 1979, the Staff furnished a copy of this license (and two amendments) to the Board and the parties.

denied, the “costs and risks of fuel delivery” will allegedly have been “unnecessarily born” (sic) by Applicants’ customers. Finally, failure to grant the motions is said to constitute a prejudgment of issues in this proceeding. Only Dr. Fankhauser supplied a concrete example: his Contention 5, dealing with the lack of training of the populace in communities through which “radioactive materials” will be transported.

2. Turning first to the question of our jurisdiction, the Applicants claim that proceedings under 10 CFR Part 70 for the issuance of materials licenses are separate and distinct from those under Part 50 relating to the issuance of operating licenses, and that a Part 50 licensing board (such as we) does not normally have jurisdiction over a Part 70 proceeding. While there may be some truth to this proposition, at least from the standpoint of an initial materials license issuance, it fails to take into account the provisions of 10 CFR 2.717(b), which reads:

(b) The Director of Nuclear Reactor Regulation or Director of Nuclear Material Safety and Safeguards, as appropriate may issue an order and take any otherwise proper administrative action with respect to a licensee who is a party to a pending proceeding. Any order related to the subject matter of the pending proceeding may be modified by the presiding officer as appropriate for the purpose of the proceeding.

As the Staff points out, the Commission has ruled that a Part 70 materials license may be regarded as “integral” to the consideration of an operating license. *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-76-1, 3 NRC 73, 74 n. 1 (1976). The Commission explained that, if and when an operating license is issued, it would include authority to transport and store fuel; the Part 70 license, which is required for those purposes prior to the issuance of an operating license, becomes superfluous. *Id.* at 74, n. 2. Under 10 CFR 2.717(b), therefore, a Part 70 license is an “order” which may be “modified” by a licensing board delegated authority to consider a Part 50 operating license.

The cases cited by the Applicants do not lead to a different conclusion. The first, *Public Service Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167 (1976), stands for the principle that a licensing board’s jurisdiction is defined by the notice of hearing under which it is operating, including the delegation of authority appearing therein. We have no quarrel with that general proposition. But *Marble Hill* is quite distinguishable from the situation before us. It involved an attempt by a petitioner to raise anti-trust issues in a proceeding convened to consider the radiological health, safety, and environmental aspects of an application. The Appeal Board noted that the Commission has established entirely separate procedures for the two types of issues, that a notice of opportunity for a hearing on antitrust issues had previously been published, and that an

antitrust proceeding might yet be instituted to review the issues sought to be raised by the petitioner. Moreover, although Section 2.717(b) was not discussed in *Marble Hill*, it is apparent that there is no relationship between antitrust and health and safety and/or environmental issues of the type required to invoke that Section.

The other two precedents relied on by the Applicants bear even less relevance to the current factual situation. In *New England Power Company* (NEP, Units 1 and 2), LBP-78-9, 7 NRC 271 (1978), the Licensing Board held that it did not have the power to exercise supervisory authority over the Staff in the performance of its independent responsibility of preparing an environmental impact statement. That question is not before us here. What we are being asked is to review an action previously taken by the Staff — a function which the NEP Licensing Board expressly acknowledged that it possessed. *Id.* at 279. And the Commission's decision in *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), CLI-77-13, 5 NRC 1303 (1977), in pertinent part deals only with the question of whether a construction permit antitrust proceeding could be commenced after the close of the health and safety and environmental proceeding which had culminated in the award of a construction permit. At the time, there was no ongoing proceeding in which jurisdiction under 10 CFR 2.717(b) could be founded. Further, in holding that the Licensing Board lacked authority to reopen the construction permit antitrust proceeding, the Commission appeared to be particularly motivated by the NRC's antitrust jurisdiction and the lack of continuing antitrust supervisory authority by NRC — a situation not analogous to that presented here.

Finally, the Applicants would limit the review authority provided by 10 CFR 2.717(b) to orders directly pertinent to contentions at issue in the ongoing proceeding. That apparently was the situation which existed in *Consolidated Edison Company of New York, Inc.* (Indian Point Station, Units 1, 2, and 3), ALAB-357, 4 NRC 542 (1976), where applicants invoked 2.717(b) to place into issue a condition in their previously issued operating licenses bearing on the subject matter of the particular proceeding. But we do not believe that 2.717(b) requires such a close relationship.

Rather, we accept the analysis urged by the Staff, which portrays three discrete situations. On the one extreme, an activity may be so closely related to the subject matter of a proceeding, as in the *Diablo Canyon* proceeding (CLI-76-1, *supra*), that any Staff order may normally not be issued (or, if issued, must be stayed pending resolution to the contested issue²). At the other extreme, a particular subject may be so far removed from a pending

² That situation apparently obtained in *Indian Point*, ALAB-357, *supra*, 4 NRC at 549-50. See also, generally, *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-214, 7 AEC 1001 (1974).

proceeding that its consideration is inappropriate — such as the antitrust issues sought to be raised in the *Marble Hill* safety and environmental proceeding. Finally, there are matters with respect to which independent Staff action is entirely appropriate but which bear enough relationship to the subject matter of a pending proceeding that review by the Licensing Board in that proceeding is appropriate. The materials license here in question is of that type.

Jurisdiction under 10 CFR 2.717(b) is clearly granted in the latter situation. Accordingly, we conclude that we have jurisdiction to entertain MVPP's and Dr. Fankhauser's motions.

3. On the merits, however, we have been provided with no information which would warrant our taking the action requested. The outstanding materials license permits the shipments and on-site storage which we are being asked to delay. In considering what in effect amounts to a request for a stay of this license, the Applicants would have us apply the stay standards as set forth in 10 CFR 2.788(e). As the Staff pointed out, however, when assuming jurisdiction under 10 CFR 2.717(b) in the *Indian Point* proceeding (ALAB-357), the Appeal Board declined to apply the stay standards despite the similar presence there of a valid outstanding license.³ Although there are weighty reasons which suggest that the stay standards should govern a situation such as that before us, or at least should be used as guidance, we need not decide the question here. For under the more lenient standards applied in *Indian Point*, we nevertheless have been furnished no facts which would cause us to suspend the outstanding materials license.

To begin with, no affidavits have been submitted in support of the motions. NRC rules provide that motions are to be "accompanied by any affidavits or other evidence relied on." 10 CFR 2.730(b). But even treating the factual assertions of counsel as if they had been submitted in affidavit form, we nevertheless have been presented with no information which could justify suspension of the materials license.

The primary thrust of MVPP's concerns appears to be the economic costs of shipment, storage, and insurance which assertedly will be borne by the Applicants' ratepayer-customers. The Applicants respond that, if fuel shipments were barred, the costs would be even higher. We need not resolve that factual dispute, however. For such costs, in themselves, may not be considered in an NRC licensing proceeding. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 161-63 (1978). Under the National Environmental Policy Act (NEPA), they (together with the benefits of shipment) may perhaps be factored into a cost-benefit balance. But no such balance need normally be undertaken for a shipment of unirradiated

³ The dissenting member of the Appeal Board in ALAB-357 would have applied the stay standards. ⁴ NRC at 553.

fuel. 10 CFR 51.5(d)(4). Nor are there any assertions in this proceeding that the cost-benefit balance for this facility would require license denial (either because of these shipment and storage costs or otherwise).

Under the Atomic Energy Act, economic costs become relevant only in terms of an applicant's financial qualifications. But, although MVPP has raised an issue as to those qualifications, it has made no assertion (nor supplied information) that the shipment and storage costs would have any material bearing upon those qualifications.⁴ And the benefits or lack of benefits of shipment of unirradiated fuel is outside the scope of the Atomic Energy Act. All that is relevant under the Act is whether, in undertaking their planned shipments and storage of fuel, the Applicants will abide by applicable regulatory requirements and the terms of their materials license. The question before us is not, therefore, that which the city of Cincinnati has posed — *i.e.*, whether, unless some benefit be shown, the shipments should be halted.

Considering the motions in the above framework, it is clear that no information has been presented by MVPP or Dr. Fankhauser (or, for that matter, the city of Cincinnati) which would indicate that the Applicants' proposed action fails to conform with the requirements of regulations or the outstanding materials license. The Staff itself has found certain matters which must be taken care of prior to the shipment of the fuel or its storage onsite. See letter dated August 7, 1979 from W. T. Crow, Division of Fuel Cycle and Material Safety, NRC, to Cincinnati Gas and Electric Company.⁵ Furthermore, we have been given no information which would suggest to us that the Staff is failing to exercise properly its authority in this area. Indeed, as far as we can see, the contrary is true.

With respect to MVPP's asserted concerns with respect to the security of the shipments or the storage facility, we similarly have been provided no information which could suggest that these matters are not being considered or will not be taken care of adequately. We note that the Applicants have taken great care not to reveal the exact date or time of shipment (see Tr. 2321-23).

Furthermore, contrary to Dr. Fankhauser's claim, our denial of his motion will not impinge on our resolution of his Contention 5, which asserts that "[t]here are no plans to provide knowledge and training of the populace in communities through which radioactive materials will be transported sufficient to allow them to be able to cope with transportation accidents." The Applicants have filed two motions for summary disposition of this contention

⁴ Whether or not the Applicants' customers will have to bear those costs is a matter for State or local agencies, not for us, to determine. See 42 U.S.C. §2018.

⁵ The Staff furnished the Board and the parties with a copy of this letter (Tr. 2431).

(the second taking into account newly issued Commission regulations). We have not yet ruled on those motions. But, insofar as unirradiated fuel shipments are concerned, we hold that, at the present time, as a matter of law, there are no requirements for training of the populace in the communities through which such fuel will be shipped. (The above-referenced new regulations address only *spent* fuel. 44 *Fed. Reg.* 34466 (June 15, 1979). We express no opinion at this time on whether training may be required for spent fuel shipments.)

4. Finally, the claim has been made that our denying the motions will somehow indicate that we have made up our minds on other issues in controversy (Tr. 3014, 3018). We, of course, can do little to affect how others will view our actions. But the claim itself ignores the nature of an operating license proceeding. We are not here charged with a general overview of the operating license. Rather, our duty is to resolve discrete contentions or issues. 10 CFR 2.760a. General responsibility for operating licenses rests with the Staff, which must make the specific findings required for such licenses (subject to the terms under which specific issues may have been resolved by a licensing board). Nothing provided in support of the motions would constitute a sufficient basis for us even to admit a new contention dealing with the shipment or storage of unirradiated fuel.

For the reasons stated, the motions of MVPP and Dr. Fankhauser to delay delivery of unirradiated fuel to the Zimmer site are *denied*.

In accordance with the Commission's ruling in *Pacific Gas and Electric Company* (Diable Canyon Nuclear Power Plant, Units 1 and 2), CLI-76-1,3 NRC 73, 74 (1976), orders of this type have sufficient finality to be appealable. Pursuant to 10 CFR 2.762, appeals from this Memorandum and Order are to be submitted directly to the Commission.⁶ Appeals may be taken by the filing, within ten (10) days after service of this Memorandum and Order, of exceptions. A brief in support of the exceptions must be filed within thirty (30) days thereafter (forty (40) days in the case of the Staff). Within thirty (30) days of the filing and service of the brief of the appellant (forty (40) days in the case of the Staff), any other party may file a brief in support of, or in opposition to, the exceptions.

⁶ The Appeal Board has not been granted general review authority over Part 70 decisions. See 10 CFR 2.785(a). In *Diablo Canyon, supra*, the Commission delegated authority for that proceeding alone to the Appeal Board.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Dr. Frank F. Hopper, Member

Glenn O. Bright, Member

Charles Bechhoefer, Chairman

**Dated at Bethesda, Maryland,
this 15th day of August, 1979.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Valentine B. Deale, Chairman
Ernest E. Hill
Quentin J. Stober

In the Matter of
VIRGINIA ELECTRIC AND
POWER COMPANY
(VEPCO)
(North Anna Power Station,
Units 1 and 2)

Docket Nos. 50-338-SP
50-339-SP
Proposed Amendment to
Operating License NPF-4

August 25, 1979

Following up its decision on August 6, 1979, granting VEPCO's motion for summary disposition of its spent fuel pool modification proposal, the Licensing Board, in keeping with its August 6 announcement, set forth the reasons for its decision through its Order of August 24. This Order was supplemented by an Addendum dated August 25.

RULES OF PRACTICE: MOTION FOR SUMMARY DISPOSITION

Should it appear from the affidavits of a party opposing a motion for summary disposition that he cannot present facts essential to justify his opposition, the presiding officer may refuse the application for summary disposition, order a continuance to permit affidavits to be obtained, or make such other order as is appropriate. 10 CFR 2.749(c).

In this case, the Licensing Board extended the time for the intervenors to answer VEPCO's motion for summary disposition, determined to reconsider its earlier order partially granting VEPCO's motion for summary disposition, and rescheduled to a later date the time for prehearing conference and hearing.

RULES OF PRACTICE: MOTION FOR SUMMARY DISPOSITION

A party opposing a motion for summary disposition may not rest on mere allegations or denials; his answer by affidavit or otherwise must set forth specific facts showing that there is a genuine issue of fact. 10 CFR 2.749(b).

ORDER GRANTING VEPCO'S MOTION FOR SUMMARY DISPOSITION

1. This Order follows up the Board Decisions, dated August 6, 1979, wherein the Board granted Vepco's motion for summary disposition and stated that the reasons supporting its decision would be forthcoming in a Board Order shortly. This is such Board order.

BACKGROUND

2. On May 11, 1979, Vepco filed its Motion for Summary Disposition. At the time, the scheduled date for a hearing was June 26, 1979, as had been set by the Board's Notice of Hearing, dated May 4, 1979. Vepco's motion thus met the time-of-filing requirement, as specified by the Commission regulation 10 CFR 2.749(a), of at least forty-five (45) days before the time fixed for hearing.

3. In keeping with 10 CFR 2.749(a), Vepco annexed to its motion proper its "Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard" and three supporting affidavits along with statements of qualifications of the affiants. The Statement of Material Facts enumerated one hundred seventy-nine (179) factual statements broken down according to the contentions previously accepted by the Board for hearing. This Statement was largely based on Vepco's Summary of Proposed Modifications to the Spent Fuel Storage Pool Associated with Increasing Storage Capacity, as amended. The truth and correctness of this Summary was attested to in one of the three Vepco affidavits, namely, the affidavit of H. Stephen McKay, Vepco's Project Engineer responsible from the design and installation of the high density spent fuel racks for North Anna 1 and 2. A copy of Vepco's Summary is attached to Mr. McKay's affidavit. Other supporting references than Vepco's Summary relating to a material fact in Vepco's Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard are noted therein.

4. Besides attesting to the truths and correctness of Vepco's Summary, Mr. McKay's affidavit also attested to some sixty-six statements supplementary to Vepco's Summary and bearing on one or another contention which had been scheduled for hearing. Vepco's two other affidavits by qualified affiants, namely, Dr. Morris L. Brehmer and Robert W. Calder, mainly concerned Intervenors' contentions on Thermal Effects and Corrosion respectively.

5. The contentions designated for hearing by the Board were spelled out in the Board's Order Granting Intervention, Providing for a Hearing and Designating Contentions of Intervenors, dated April 21, 1979, and in the Board's amendment to said order dated June 6, 1979. These contentions are briefly identified as follows:

THERMAL EFFECTS
RADIOACTIVE EMISSION .
a) Accidents
b) Normal Operation
MISSILE ACCIDENTS
MATERIALS INTEGRITY
CORROSION
OCCUPATIONAL EXPOSURE
ALTERNATIVES
SERVICE WATER COOLING SYSTEM

6. The NRC Staff supported Vepco's motion for summary disposition. The NRC Staff's answer to Vepco's motion was in two parts, as follows: first, its Response to Vepco Summary Disposition Motion, dated June 5, 1979, together with two affidavits on Thermal Effects, one affidavit on Radioactive Emission, one affidavit on Materials Integrity, and Corrosion, one affidavit on Occupational Exposure, one affidavit on Alternatives, and one affidavit correcting a figure in the Safety Evaluation, as well as statements of each affiant's qualifications; and second, its Supplemental Response to Vepco Summary Disposition Motion, dated June 25, 1979, with three affidavits on Radioactive Emission (Accidents), one affidavit on Missile Accidents, and one affidavit on Service Water Cooling System, along with statements of qualifications of the affiants.

7. Intervenors Potomac Alliance and Citizens' Energy Forum (CEF), which were later consolidated, each opposed Vepco's motion for summary disposition. Potomac Alliance's answer to the motion was in three parts: first, its Answer to VEPCO's Motion for Summary Disposition, dated June 5, 1979, together with its Statement of Material Facts As To Which There Is A Genuine Issue To Be Heard, dated June 5, 1979, plus a supporting affidavit of the same date by Potomac Alliance's attorney, second, its Supplemental Answer to Vepco's Motion for Summary Disposition, dated June 25, 1979; and third, its Second Supplemental Answer to Vepco's Motion for Summary Disposition, dated July 23, 1979, plus an affidavit by Phillip M. Weitzman of the same date along with a statement of the affiant's qualifications. CEF's separate answer to Vepco's motion prior to consolidation with Potomac Alliance consisted of its Response to Vepco's Motion for Summary Disposition and its Statement of Facts As To Which There Exists A Genuine Issue To Be Heard—both dated June 5, 1979.

8. By its Order Partially Granting Vepco's Motion for Summary Disposition, dated June 18, 1979, the Board allowed both the NRC Staff and Potomac Alliance to file further comments on or before June 25, 1979 on that part of Vepco's motion on which the Board had not acted. In the June 18 order, it was also noted that under the Board's consolidation order of June 6, 1979, Potomac Alliance also speaks in this proceeding for Citizens Energy Forum (CEF), which was the only

other intervenor in the proceeding.

9. Upon receipt of Potomac Alliance's Supplemental Answer to Vepco's Motion for Summary Disposition, dated June 25, 1979, in response to the Board's invitation of June 18, the Board reconsidered Potomac Alliance's position as described in the latter's Supplemental Answer, pp. 1-2:

... While Vepco's responses to the discovery requests of the Alliance and Citizens Energy Forum (the Intervenor) have been received only within the past few days, the NRC Staff has notified the parties and the Board that it will not be able to submit its responses until several [days] after the date of this filing. The Alliance has therefore been severely handicapped in attempting to amass the facts necessary to develop its case, with the result that it cannot present by affidavit the facts essential to its opposition to Vepco's motion. Under such circumstances it is appropriate for the Board to refuse to consider the motion or to deny it. *See* 10 CFR 2.749(c).

The same general position had also been advanced by Potomac Alliance and CEF in their June 5 answers to Vepco's motion for summary disposition.

10. The referenced citation 10 CFR 2.749(c) is as follows:

(c) Should it appear from the affidavits of a party opposing the motion [i.e., for summary disposition] that he cannot, for reasons stated, present by affidavit facts essential to justify his opposition, the presiding officer may refuse the application for summary disposition or may order a continuance to permit affidavits to be obtained or make such other order as is appropriate and a determination to the effect shall be made a matter of record.

11. As a result of its reconsideration of Potomac Alliance's asserted position of why it could not answer adequately Vepco's motion for summary disposition, the Board extended the time for Potomac Alliance to supplement its answers to Vepco's motion. In its Order Allowing Additional Time for Certain Answers and Resetting Time for Hearing, dated June 29, 1979, the Board permitted Potomac Alliance on or before July 23, 1979 for supplementing its answers to said motion. At the same time, the Board announced that it would reconsider its order of June 18, 1979 partially granting Vepco's motion for summary disposition and it rescheduled the Prehearing Conference and Hearing to begin immediately thereafter from July 9 to August 14, 1979. The June 29 order also allowed an additional five days for the parties to file answers to designated pending motions.

MERITS OF MOTION

12. Vepco's timely Motion for Summary Disposition, together with its Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard and its three affidavits, satisfied the requirements of a motion for

summary disposition as set forth in the Commission regulation 10 CFR 2.749 and provided the basis for granting the motion. The motion, together with its attachments, treated each of the contentions of the Intervenor scheduled for hearing, demonstrated that there is no genuine issue of material fact-worthy of a hearing, and showed why each of the contentions ought to be resolved in Vepco's favor.

13. Vepco's Motion for Summary Disposition was strongly supported by the NRC Staff with its own affidavits. The NRC Staff agreed that Vepco had accurately summarized pertinent facts surrounding the contentions, that the contentions ought to be resolved in Vepco's favor, and that there is no need for a hearing.

14. Intervenor's answers to Vepco's motion, namely, both Potomac Alliance's answer and the response of CEF prior to consolidation, were totally defective. The answers did not comply with Commission regulation 10 CFR 2.749(b); rather than set forth specific facts showing there was a genuine issue of fact, Intervenor relied on mere denials of Vepco's claim that there was no genuine issue about certain material facts; and Intervenor offered no meaningful factual data of their own. Without raising any genuine issue worthy of hearing, Intervenor rested their case against Vepco's motion on generalities of disagreement, uninformed opinion and speculative argumentation.

15. In reaching its judgment about Potomac Alliance's answer, the Board refers to the following passage of the Commission regulation 10 CFR 2.749(b):

(b) . . . When a motion for summary decision is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denial or denials of his answer; his answer by affidavits or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of facts. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

Applying the foregoing standard to Potomac Alliance's answer, the Board concluded that the answer afforded no basis for denying Vepco's motion. In particular, the first part of Potomac Alliance's answer, which was dated June 5, 1979, essentially made the following two points: (1) Potomac Alliance was at the time not equipped to make any effective answer to Vepco's motion and sought the Board either to deny the motion or to give Potomac Alliance more time to respond, invoking 10 CFR 2.749(c); and (2) with respect to a significant number of paragraphs enumerated in Vepco's Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard, Potomac Alliance merely contradicted through its attorney's affidavit Vepco's position and contended that there was a genuine issue to be heard with respect to the facts in said paragraphs. This first part of Potomac Alliance's three-part answer to Vepco's motion partially occasioned the

Board's later order to allow Potomac Alliance further time to prepare an answer; however, neither the first point of the first part of Potomac Alliance's answer nor the second point thereof raised any genuine issue of material fact-worthiness of trial under the standard of the Commission regulation quoted above.

16. CEF's answer of June 5 to Vepco's motion for summary disposition focused on three contentions, namely, Thermal Effects, Radioactive Emission and Corrosion. The principal thrust of its answer was to emphasize CEF's dependence on Vepco's and NRC Staff's answers to CEF's interrogatories in pending discovery procedure. Though the answer supported the Board's later move to allow more time for preparing an answer to Vepco's motion, CEF's answer of June 5 itself did nothing to show why there ought to be a hearing about a material fact in genuine dispute. The answer did not satisfy the standard set out in Commission regulation 10 CFR 2.749(b).

17. The second part of Potomac Alliance's answer, which was dated June 25, 1979, centered on Potomac Alliance's plea of its handicap to do battle with Vepco on a factual basis and stressed the status of Potomac Alliance's discovery endeavors, that is, that Potomac Alliance had just received answers to its interrogatories to Vepco and it was expected to receive in a few days answers to its interrogatories to the NRC Staff. The Board's order allowing Potomac Alliance additional time to prepare its answer followed; but the second part of Potomac Alliance's answer in and of itself offered no statement of material fact to raise any of Potomac Alliance's dissatisfaction with Vepco to a genuine issue worthy of hearing.

18. The third and final part of Potomac Alliance's answer to Vepco's motion, dated July 23, 1979, addressed each of the contentions which had been scheduled for hearing and on which, according to Vepco's motion, there is no need for a hearing as they involve no genuine issue of material facts. Intervenor's contentions and the Board's conclusions concerning the relation of these contentions to Vepco's motion for summary disposition follow.

19. **Thermal Effects Contention.** Intervenor contends that the possible consequences caused by the additional heat to be discharged as a result of the proposed modifications have not been adequately addressed by the NRC Staff and the Applicant. This contention embraces the rate of temperature rise in the spent fuel storage facility as a result of an accidental leak in the spent fuel pool. It further includes the affirmation that the spent fuel pool cooling system will be inadequate to prevent "hot spots" and possible boiling.

20. The foregoing Thermal Effects contention which had been scheduled for hearing is decided in favor of Vepco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion.

Pertinent considerations follow:

Vepco, with the support of Dr. Morris L. Brehmer's affidavit, has concluded that the additional heat to be discharged from the spent fuel

pool because of the proposed modification is extremely limited and would have no significant effect upon the environment. The NRC Staff's Environmental Impact Appraisal of April 2, 1979 is in agreement.

Further, in its Statement of Material Facts As To Which There Is No Genuine Issue To Be Heard, Vepco set forth 53 material facts bearing on the contention of thermal effects; these facts embrace such subordinate subjects as discharge of heat to the environment, spent fuel pool cooling system analysis, leakage, and thermal hydraulic analysis. In its answer to Vepco's motion, dated June 5, 1979, the NRC Staff, at page 4, concluded that Vepco's statements of 53 material facts "accurately summarize the salient facts not open to dispute."

Potomac Alliance did not present a single specific factual allegation which placed any one of Vepco's supported allegations concerning the Thermal Effects contention in genuine issue. Potomac Alliance's mere reference to a study of Sandia Laboratories (SAND-77-1372 (1978)), apparently on spent fuel pool coolant leakage, without, however, showing a specific relation of the study to Vepco's spent fuel pool is of no account.

Similarly, Potomac Alliance's attempt to introduce considerations arising out of *Minnesota v. NRC*, Nos. 78-1269, 78-2032 (D.C. Cir. 1979) is rejected as irrelevant to this proceeding. See Board's Order Denying Intervenor's Motion To Amend Petition To Intervene, August 17, 1979, pp. 1-4.

The Board concluded that the additional heat to be discharged as a result of the proposed modification is not environmentally significant.

21. Radioactive Emission Contention (a): Intervenor contends that Vepco has neglected to address the additional liquid and gaseous radioactive emissions which will result from the increased fuel storage and the effects thereof. In CEF's [Intervenor's] opinion, applicant's analysis of radiation released, and of possible releases, in the event of those accidents considered in Section 9.1 through 9.4 of the application, are superficial and insubstantial in the Summary of the Proposed Modifications.

22. The foregoing Radioactive Emission contention (a) which had been scheduled for hearing is decided in favor of Vepco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent considerations follow:

There is a part a) and a part b) to the contention of Radioactive Emission, with the former relating to accidents and the latter to normal operation.

Vepco analyzed a number of potential accidents, namely, the loss of the spent fuel pool cooling system, leakage, earthquakes and tornadoes, and fuel drop accidents, and in none of these accidents, did Vepco's analysis show unacceptable results. The NRC Staff's independent evaluation reached the same conclusion.

Paragraphs 87 through 114 of Veeco's Statement of Material Facts pertain to part a) of the Radioactive Emission contention and according to the NRC Staff, such paragraphs "accurately summarize the salient facts not open to dispute." NRC Staff Supplemental Response to Veeco's Summary Disposition motion, dated June 25, 1979, p. 2.

Potomac Alliance did not place a single Veeco statement pertinent to part a) of the subject contention into genuine issue. Again, its reliance on considerations flowing from *Minnesota v. NRC* is misplaced in this proceeding.

The Board concluded that none of the accidents analyzed by Veeco and the NRC Staff would have unacceptable consequences.

23. Radioactive Emission Contention (b): Intervenor contends that the Applicant has failed to analyze adequately the liquid and gaseous radioactive emissions that will result from the proposed increase in fuel storage capacity, and has failed to demonstrate that significant adverse environmental effects will not result from such emissions.

24. The foregoing Radioactive Emission contention (b) which had been scheduled for hearing is decided in favor of Veeco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent consideration follow:

In its Statement of Material Facts, Veeco enumerated 33 material facts, paragraphs 54 through 86, pertinent to part b) of the Radioactive Emission contention. The NRC Staff states that these material facts "accurately summarize the salient facts not open to dispute." NRC Staff Response to Veeco Summary Disposition Motion, dated June 5, 1979, p. 6.

Again, Potomac Alliance did not place a single Veeco statement of material fact into genuine issue; it relied on an argumentative position and misplaced emphasis upon *Minnesota v. NRC* in this proceeding.

The Board is satisfied that the potential offsite radiological environmental impacts associated with the proposed modification are environmentally insignificant.

25. Missile Accident Contention: Intervenor contends that the proposed modification of the spent fuel pool will increase the consequences of an accident involving missiles, and that the Applicant has not demonstrated that the pool, as modified, will withstand such accidents within the limits set forth in NRC Regulations.

26. The foregoing Missile Accident contention which had been scheduled for hearing is decided in favor of Veeco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent considerations follow:

Veeco has analyzed the risk of a tornado missile impacting the spent fuel pool and concluded it would not result in radiation doses exceeding the limits of 10 CFR Part 100. Veeco also analyzed the risk of a turbine missile and found it to be extremely small. The NRC Staff analyses yield the same conclusions.

Paragraphs 116-117, 121-123, and 126 of Veeco's Statement of Material Facts are relevant to the Missile Accidents contention, and according to the Staff, they "accurately summarize the salient facts not open to dispute." NRC Staff Supplemental Response to Veeco Summary Disposition Motion, dated June 25, 1979, p. 3.

While Potomac Alliance generally insists that there is "need for a hearing of this contention" and that "the technical positions of Veeco and the NRC Staff be subjected to verification in the crucible of a public and adjudicatory hearing," Potomac Alliance did nothing to place a material fact in genuine issue. General references to past pleadings and general argumentative postures are not enough to meet the standard of the Commission regulation 10 CFR 2.749(b).

The Board is persuaded that possible missile accidents relating to the proposed modification of the spent fuel pool do not afford an acceptable reason for denying the proposed modification.

27. Materials Integrity Contention: Intervenor contends that increasing the inventory of radioactive materials in the spent fuel pool will increase the corrosion of, the stress upon, and resultant problems concerning the components and contents of the pool. The applicant has not adequately addressed such potential problems with respect to: (a) the fuel cladding, as a result of exposure to decay heat and increased radiation levels during extended periods of pool storage; and (b) the racks and pool liner, as a result of exposure to higher levels of radiation during pool storage.

28. The foregoing Materials Integrity contention which had been scheduled for hearing is decided in favor of Veeco on the basis of its motion for summary disposition along with NRC Staff's answer to the motion. Pertinent considerations follow:

Veeco cites Licensing Board and Appeal Board decisions to the effect that Zircaloy-clad fuel can be safely stored under water, and Veeco does not expect the racks and pool liner to suffer unacceptable stress or corrosion over the life of the power station. The NRC Staff offers that little if any effect will be produced upon the spent fuel assemblies or stainless steel pool components. In the NRC Staff view, since only minimal general corrosion will occur, the structural integrity of the spent fuel pool components is not degraded.

In its Statement of Material Facts, paragraphs 78 through 86 and 127 through 134 bear upon both the above contention of Materials Integrity and the following contention on Corrosion. The NRC Staff takes the

position that such paragraphs "accurately summarize the salient facts not open to dispute." NRC Staff's Response to Vepco's Summary Disposition Motion, dated June 5, 1979, page 7. Of particular interest, Paragraph 127 states: "Storing 966 instead of 400 fuel assemblies in the spent fuel pool will not materially increase the corrosion of, the stress upon, or other resultant problems with the fuel cladding, the racks, or the pool liner due to higher radiation levels."

Once more, Potomac Alliance does not specify information which balances the Vepco's statements of material facts.

The Board is satisfied as to the integrity of Vepco's materials.

29. Corrosion Contention. Intervenor contends that there has been inadequate examination of the problems that may arise due to a potential incremental increase in the amount of corrosion upon the spent fuel assemblies and racks over the duration of the storage of fuel in the pool, including their eventual removal from the pool. Such problems include, but are not limited to, the ability of the spent fuel purification system to remove any potential incremental impurities.

30. The foregoing Corrosion contention which had been scheduled for hearing is decided in favor of Vepco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent considerations follow:

The two contentions of Material Integrity and Corrosion cover essentially the same ground, and Potomac Alliance and the NRC Staff treat them together.

In citing the Staff's Safety Evaluation which stresses adherence of the spent fuel storage rack material to commonly accepted material standards, Vepco notes there is neither reason nor evidence for supposing that the proposed modification will significantly increase corrosion. Vepco, with the benefit of its experience at Surry, also indicates the adequacy of the fuel pool purification system to handle its load.

The affidavit of Messrs. Georgiev, Houston, and Wermiel, presented with the NRC Staff's answer of June 5, 1979 to Vepco's motion for summary disposition, is in point. It covers the contentions of both Materials Integrity and Corrosion and while dealing specifically with fuel cladding integrity and racks and pool liner, it also covers corrosion and the spent fuel pool purification system. The affidavit reinforces Vepco's position.

Potomac Alliance's Second Supplemental Answer To Vepco's Motion for Summary Disposition, dated July 23, 1979, had nothing specific to offer by way of raising a genuine issue of a material fact which would be worthy of a hearing.

The Board concluded there is no foundation for the contention on Corrosion.

31. Occupational Exposure Contention. Intervenor contends that the Applicant has not demonstrated that it will prevent the increased occupational radiation levels which will result from the spent fuel pool modification from leading to occupational doses in excess of those permitted under NRC Regulations.

32. The foregoing Occupational Exposure contention which had been scheduled for hearing is decided in favor of Vepco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent considerations follow:

Vepco has concluded that occupational exposure will not exceed NRC limits. In agreement with Vepco, the NRC Staff concluded that the health effects of incremental increase in some radiation exposure to plant personnel would be negligible.

In Vepco's Statement of Facts, paragraph 135 through 156 "accurately summarize," according to the NRC Staff, "the salient facts not open to dispute." NRC Staff Response to Vepco Summary Disposition motion, dated June 5, 1979, p. 8. Rather than specifically controvert any of VEPCO's statements of fact, Potomac Alliance persisted in its argumentative posture of general criticism, e.g., "No serious attempt has been made to quantify the expected radiation levels at North Anna, or to show how the admitted increases in radiation will be borne by the work force." Potomac Alliance Second Supplemental Answer to Vepco's Motion for Summary Disposition," dated July 23, 1979, p. 9.

The Board is moved to accept Vepco's position, which is strongly supported by the NRC Staff, that the proposed modification in the spent fuel pool will not result in occupational exposure to radiation in excess of limits prescribed by NRC regulations.

33. Alternatives Contention. Intervenor contends that neither the Applicant nor the Staff has adequately considered alternatives to the proposed action. The alternatives which should be considered are: (a) the construction of a new spent fuel pool on site; (b) the physical expansion of the existing spent fuel pool; (c) the use of the spent fuel pool at North Anna Units 3 and 4 (including the completion of construction of such pool, if necessary) for storage of spent fuel from Units 1 and 2.

34. The foregoing Alternatives contention which had been scheduled for hearing is decided in favor of Vepco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent considerations follow:

Vepco finds alternative (a) unacceptable at this time because of the high cost, the need for double handling the fuel, and the time required to design, license and construct such a facility. Vepco finds alternative (b) as impracticable because there exist on all four sides of the existing pool

structures necessary to the pool's operation, and alternative (b) would require their movement. Also, alternative (b) would necessitate movement of spent fuel already in the pool with all ensuing complications. Similarly, Vepco notes that alternative (c), that is, use of the spent fuel pool at North Anna 3 and 4, would be unworkable because of the timing. Vepco's Motion for Summary Disposition, dated May 11, 1979, p. 20. Vepco also addresses the Alternatives contention in its Statement of Facts, from paragraphs 157 through 179.

The NRC Staff, which considered alternatives suggested in the contention and others, concluded that the alternatives encompassed by the contention "are unavailable within the necessary time-frame, are more expensive and offer no environmental advantage over the proposed action." NRC Staff Response to Vepco Summary Disposition motion, dated June 5, 1979, p. 9.

Phillip M. Weitzman's affidavit, accompanying Potomac Alliance Second Supplemental Answer to Vepco's Motion for Summary Disposition (July 23, 1979), pressed the position that the materials submitted by Vepco did not provide an adequate "factual and analytical basis on which to determine whether Vepco's proposed modification of the spent fuel pool at North Anna Units 1 and 2 is economically more advantageous than any of the three alternative proposals contained in the Potomac Alliance's contention labeled 'Alternatives'." Affidavit, dated July 23, 1979, p. 2.

Potomac Alliance evidently made no attempt to secure details about Vepco's estimated during the extra time allowed by the Board in its Order of June 29, 1979. The NRC Staff raised no question about Vepco's estimates. In any event, Potomac Alliance did not meet the Commission regulatory requirement that its "answer . . . must set forth facts showing that there is a genuine issue of fact," 10 CFR 2.749(b).

Regarding the contention on Alternatives, the Board refers to the Appeal Board's view that in spent fuel pool modification cases there is a limitation upon the NEPA mandate of exploring alternatives—which limitation appears applicable here:

"[The intervenor] is confronted with the fact that the evidence establishes without contradiction that the process of installing the new racks in that pool and the operation of the pool with its expanded capacity will neither (1) entail more than negligible environmental impacts; nor (2) involve the commitment of available resources respecting which there are unresolved conflicts As we read it, the NEPA mandate that alternatives to the proposed licensing action be explored and evaluated does not come into play in such circumstances—in short, there is no obligation to search out possible alternatives to a course which itself will not either harm the environment or bring into serious question the manner to which this country's resources are being expended." *Portland General Electric*

Company (Trojan Nuclear Plant), ALAB-531, 9 NRC-263 (March 21, 1979).

35. **Service Water Cooling System Contention.** The intervenor contends that the service water cooling system for the facility will be inadequate to support the component cooling system for the spent fuel pool if the proposed modification of the pool is permitted.

36. The foregoing Service Water Cooling System contention which had been scheduled for hearing is decided in favor of Vepco on the basis of its motion for summary disposition along with the NRC Staff's answer to the motion. Pertinent considerations follow:

In its Statement of Facts under the subheading Spent Fuel Pool Cooling System Analysis, paragraphs 17 to 40, inclusive, Vepco indicated how it analyzed its spent fuel cooling system, taking into account the proposed increase in fuel storage capacity. It reported that resulting fuel pool temperatures were found to be within the limits of 140°F for the normal case and 170°F for the abnormal case if one fuel pool cooling system pump and two coolers are used. The NRC Staff arrived at the same conclusion, and went further to note that should only one cooler be available during the specified peak load period, the resulting pool-water temperatures of 148°F for the normal case and 177°F for the abnormal case "are only slightly above the previously established limits and will not result in unacceptable operating conditions nor adversely affect the health and safety of the public [Reference omitted]." NRC Staff Supplemental Response to Vepco Summary Disposition Motion, dated June 25, 1979, pp. 4-5.

Once more, Potomac Alliance did not offer a single fact, by affidavit or otherwise, which would place its Service Water Cooling System contention into genuine issue worthy of a hearing. Potomac Alliance's persistent position in dealing with its contentions impressed the Board that it simply wanted a hearing in the nature of a public forum so that Vepco and the NRC Staff would be put to the task of explaining over again their various premises on the occasion of examination by Potomac Alliance under circumstances where Potomac Alliance would have speculative questions to ask and no specific material facts to call upon.

The Board finds that VEPCO's service water cooling system is acceptable.

Conclusion And Order

37. Pursuant to the Commission regulation 10 CFR 2.749, the Board concludes on the basis of the record in the proceeding that there is no genuine issue of any material fact and that Vepco is entitled as a matter of law to a decision granting its motion of summary disposition.

38. Accordingly, it is hereby ordered that Veeco's motion for summary disposition is granted, that the hearing previously scheduled for three separate dates concerning the Proposed Amendment To Facility Operating License NPF-4 To Permit Storage Pool Modification is permanently cancelled, and that the NRC Staff is authorized to permit Veeco's proposed spent fuel storage modification and to adopt implementing measures necessary or convenient toward enabling Veeco to effect such modification in a timely manner.

39. The two technical members of the Board, namely, Dr. Quentin J. Stober and Ernest E. Hill, participated in this decision, first summarily announced in Board Decisions, dated August 6, 1979, and in this Order explaining the decision. But for geographical distances and time considerations, Dr. Stober and Mr. Hill would have joined the Chairman in signing this Order.

Done this 24th day of August, 1979 at Washington, D.C.

**ATOMIC SAFETY AND
LICENSING BOARD**

Valentine B. Deale, Chairman

**Addendum to Order
Granting Vepco's Motion for Summary Disposition**

1. Through an oversight, Vepco's motion for summary disposition was incompletely described in the Board's Order granting the motion, dated August 24, 1979. Reference was omitted to the permissible supplement to Vepco's motion under 10 CFR 2.749(b), namely, Vepco's Motion To Supplement Its Motion For Summary Disposition, dated July 19, 1979, together with accompanying attachments. These attachments are as follows: Vepco's Supplemental Statement Of Material Facts As To Which There Is No Genuine Issue To Be Heard; affidavit of Lawrence A. Twisdale, Jr., together with his qualifications; and final report Tornado Missile Risk Analysis of the North Anna Nuclear Power Station Units 1 and 2 Spent Fuel Pool, to which Dr. Twisdale, one of the preparers of the report, attested to its truth and correctness. An informational report entitled Tornado Missile Risk Analysis for the Electric Power Research Institute was noted as also being enclosed with Vepco's Motion To Supplement.
2. The foregoing supplement to Vepco's motion for summary disposition pertains to Vepco's treatment of the Missile Accidents contention and occasions no change of the Board's determination as stated at paragraph 26 of the Board's Order Granting Vepco's Motion for Summary Disposition. Potomac Alliance offered nothing to place any material fact regarding the Missile Accidents contention into a genuine issue.
3. Both Dr. Stober and Mr. Hill agree with this addendum.

Done on this 25th day of August 1979, at Washington, D.C.

**ATOMIC SAFETY AND
LICENSING BOARD**

Valentine B. Deale, Chairman

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

IOWA ELECTRIC LIGHT & POWER
COMPANY, et. al.

Docket No. 50-331

(Duane Arnold Energy Center)

August 7, 1979

The Director of Nuclear Reactor Regulation denies petition under 10 CFR 2.206 of the Commission's regulations which requested proceedings to suspend Amendment No. 9 to the Operating License of the Duane Arnold Energy Center.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a request dated March 20, 1979, Ms. Jane E. Magers on behalf of Citizens United for Responsible Energy (CURE) requested pursuant to 10 CFR 2.206 of the Commission's regulations that the Nuclear Regulatory Commission institute a proceeding to suspend Amendment No. 9 to Facility Operating License No. DPR-49 for the Duane Arnold Energy Center (DAEC) which was issued by the Commission on June 3, 1975. Amendment No. 9 was an action initiated by the Commission in December 1974 to standardize the wording in all licenses with respect to (1) conditions relating to the receipt, possession, and use of by-product, source and special nuclear materials, and (2) Technical Specifications which provide for leakage testing and related surveillance and reporting requirements for miscellaneous radioactive material sources.

The asserted bases for the request by CURE are (1) "special nuclear material (material containing at least 20% enriched uranium 235, uranium 233 or plutonium 239) is not needed for *any* purpose at a nuclear electric facility like the DAEC", (2) Iowa Electric Light and Power Company (IELPC) has received several notes threatening "nuclear terrorism" and

*This decision was inadvertently not included in the August 1979 NRCI. Because it is an insert, this decision has been paginated so as not to interrupt the pagination, and therefore the cross-referencing, of the original issuances upon which this six-months' compilation is based.

contending that "at least two members of this group work in the DAEC", (3) in 1971, Dr. Hanauer, an AEC employee, stated that a disgruntled or psychotic utility employee may have the knowledge, the means and the opportunity if so motivated, to concoct trouble at a nuclear plant, (4) in February 1979, a locked cabinet in a restricted zone at DAEC was broken into and a small strontium-90 calibration source was stolen, which, although recovered, "clearly shows that some one(s) at the DAEC is (are) disgruntled or psychotic or both".

With respect to the first contention, the only locations at DAEC using special nuclear material are in sources inside the reactor pressure vessel. As discussed below, these sources are necessary and required for operation of the plant. They are absolutely inaccessible during plant operation and because of the radiation levels emitted by them (resulting from their being irradiated in the core), are considered "theft proof" even if a person had access to them during a refueling operation.

The power level of a nuclear reactor at any instant and any location is proportional to the neutron flux. Instruments are available which measure this flux with an instantaneous response. They are particularly suitable for indicating power levels *and* for providing signals to automatic control and safety mechanisms.

The function of a neutron monitoring system in a nuclear reactor is (1) to indicate and record neutron flux from the source level (reactor startup) to greater than full power, in order to detect conditions in the core that would threaten fuel integrity; (2) to provide signals to the reactor protection system and (3) to provide information for the efficient operation and control of the reactor.

Neutron monitoring systems for a Duane Arnold type light water reactor consist of three major subsystems which are the Source Range Monitors (SRM), the Intermediate Range Monitors (IRM), and the Local Power Range Monitors (LPRM). The combination of these monitors detect the neutron flux in the reactor from the source range to greater than the full power range. In addition, there are Traversing In-Core Probes (TIP) which are utilized to provide data to calibrate the LPRM subsystem. These probes can also be used to provide substitute readings for LPRM's which may have failed. The TIP signals are supplied to the computer, and together with other inputs, the computer calculates the whole core distribution. Additionally, there are Fuel Loading Chambers (FLC) which are utilized to monitor neutron flux in core locations where fuel has been removed during off-load periods.

All of the above mentioned detectors are fission chambers which utilize uranium enriched to about 90% U235 (i.e., special nuclear material). The detectors produce output signals at rates proportional to thermal neutron flux in their regions of the core. They are not only needed for safe and efficient operation of a nuclear power reactor, but are indeed required by the

operating license. These detectors account for all of the special nuclear material which is enriched to greater than 20%. The total quantity of this special nuclear material utilized at the Duane Arnold facility is estimated to be less than 200 grams.

With respect to the second contention, Iowa Electric has received several threatening letters regarding operation of DAEC. The receipt of these letters has been promptly reported to appropriate authorities including the Commission. Iowa Electric has significantly upgraded physical security at DAEC during the past two years in response to the requirements in Commission regulation 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Industrial Sabotage". This regulation was issued in early 1977. During the past two years there has been extensive review, evaluation and refinements of the Security Plan for DAEC by Iowa Electric and the Commission staff. By letter dated April 19, 1979, we approved the Security Plan, having concluded that the plan will provide the protection needed to meet the general performance requirements of 10 CFR 73.55.

With respect to the third contention, the statement cited by CURE in the basis for their request was made in 1971. Conditions have changed considerably since this statement was made. As noted above, in early 1977 the Commission issued the requirements set forth in 10 CFR 73.55. Under this regulation, licenses must establish and maintain physical protection systems and a security organization which will provide protection with high assurance against successful industrial sabotage by an insider, either working alone or in conjunction with other individuals. The general methods of protection include physical barriers, control of access to vital areas and employee screening programs.

As a result of our review, the plant modifications and control procedures implemented by Iowa Electric will provide high assurance against both internal and external threats as described in 10 CFR 73.55.

With respect to the fourth contention, the source that was "stolen" is what is commonly referred to as a "check" source. The source, containing by-product material, was about the size of a dime and was contained in a holder located in a locked cabinet in a restricted area. The total amount of strontium-90 in the source was only 0.3 millicuries and was sealed in a metal and foil matrix. The amount of activity in one of these sources is so low that a person could remain in proximity to the source all day and not incur a whole body dose in excess of that permitted by regulations. DAEC used to keep 6 of these sources throughout the plant in cabinets in restricted areas to be used by operating personnel to check that radiation survey instruments were operating (i.e., that the battery in the instrument was not dead and that the instrument was responding to a radiation source as it should). On February 8, 1979, the licensee found that one of these sources had been forcibly removed from its housing. The source was found within the reactor

building later that day. The contractor employee responsible for removing the source was dismissed. This incident was investigated by the Commission's Office of Inspection and Enforcement who concluded that the licensee's actions were timely and adequate (see Inspection Report 50-331 79-06 dated March 21, 1979).

Since that incident, even these small check sources are now kept in locked facilities in locked rooms. The larger calibration sources have always been kept in locked containers with strict procedural controls on access and use. The check and calibration sources that exist at DAEC are necessary for plant operation and to insure compliance with NRC regulations. The sources are used to calibrate and to verify that the radiation survey instruments, the inplant radiation monitors and the effluent radiation monitors are functioning and accurately measuring the type and amount of radioactivity they are intended to monitor.

In summary, the sources at DAEC are necessary for plant operation. The check and calibration sources are kept in locked containers, with appropriate procedural controls on access commensurate with the amount of radioactivity in the sources. The only sources containing special nuclear material are in sealed capsules that are located inside the reactor pressure vessel; these sources are only accessible when the reactor vessel is open (e.g., during a refueling). Special tools and procedures are required to remove a capsule. If a capsule were to be removed, the level of radioactivity is so high that the capsule must be stored in the spent fuel pool under water or in a heavy shipping cask; as such, these sources are considered essentially "theft proof".

Based on the foregoing discussion, I have determined that there exists no basis for suspending Amendment No. 9 to Facility Operating License No. DPR-49. The request of Citizens United for Responsible Energy is hereby denied.

A copy of this determination will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and at the local Public Document Room for the Duane Arnold Energy Center located at the Cedar Rapids Public Library, 426 Third Avenue, S.E., Cedar Rapids, Iowa 52401. A copy of this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's Rules of Practice, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 7th day of August, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

Docket Nos. STN 50-568
STN 50-569NEW ENGLAND POWER
COMPANY (NEP-1 and
NEP-2)

August 24, 1979

The Director of Nuclear Reactor Regulation denies petitioner's request, under 10 CFR 2.206, to issue an order to show cause why the application for a construction permit should not be denied.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated July 13, 1979, Mr. William Jordan on behalf of Concerned Citizens of Rhode Island, the Point Judith Fishermen's Cooperative, and the Thomas L. Arnold Trust¹ requested an order to show cause why the application for construction permits of New England Power Company (NEPCO) for NEP Units 1 and 2 should not be dismissed. This petition was filed pursuant to 10 CFR 2.206 of the Commission's regulations.

The asserted basis for the request is that the application is no longer complete and should not continue to be docketed for consideration by the Atomic Safety and Licensing Board (ASLB) or the Staff. The petition is addressed to the Director, Nuclear Reactor Regulation because the determination of the acceptability of an application is a decision to be made only by the Staff. *New England Power Company* (NEP, Units 1 and 2), LBP-78-9, 7 NRC 271, 281 (1978).

CCRI has stated that the application is incomplete because NEPCO's proposed site, the former Naval Auxiliary Landing Field (NALF) in Charlestown, Rhode Island is no longer available for nuclear reactor construction. On June 20, 1979, the Acting Administrator of the General Services Administration made the decision to transfer the NALF to the Department of Interior, the Environmental Protection Agency and the Town of Charlestown for a wildlife refuge. Therefore, CCRI asserts that the application now lacks the minimum information, i.e., site identification required for docketing pursuant to 10 CFR 2.101(a) and 10 CFR 50.34(a).

In support of the petition, CCRI has claimed that the GSA Administrator's decision on disposition of the site proposed for the captioned facility is clear. The position taken by CCRI implies that it has concluded, and

¹ Hereinafter referred to collectively as CCRI.

wishes the Staff to conclude, that no appeal from the Administrator's decision is possible, or if possible is not likely to produce a different outcome.

Such a conclusion is premature at this time since NEPCO has appealed the decision of the Acting Administrator of GSA concerning disposition of the proposed site for the facility. Counsel for NEPCO in a letter dated July 30, 1979, and addressed to the members of the ASLB with copies to all persons on NEPCO's service list stated that the appeal is in the form of a civil action filed in the United States District Court for the District of Columbia and that action is styled *New England Power Company, et al. v. Paul Goulding et al.*, Civil Action No. 79-1889.

Accordingly, NEPCO may still be able to utilize the NALF site.² Therefore, at this time, I have determined that there exists no adequate basis for issuing a show cause order on the NEPCO application for construction permits. The request of CCRI is hereby denied.

A copy of this determination will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and the local Public Document Rooms for NEP, Units 1 and 2 located at the Cross Mill Public Library, Old Post Road, Charlestown, Rhode Island 02813, and at the University Library of Rhode Island, Government Publications Office, Kingston, Rhode Island 02881. A copy of this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's Rules of Practice, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

For The Nuclear Regulatory Commission

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 24th day of August, 1979.

² Pending outcome of the Court's decision on the siting question, further review on this matter is being held in abeyance by the Staff.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

EXECUTIVE DIRECTOR FOR OPERATIONS

Lee V. Gossick

In the Matter of

Docket No. PRM-7-1

NON DESTRUCTIVE TESTING
MANAGEMENT ASSOCIATION

August 2, 1979

The Commission's Executive Director for Operations denies petition for rulemaking requesting the Commission to form a review board made up of responsible members of the industry to review all pertinent regulations and to clarify positions of the industry prior to issuance of all new regulations.

RULEMAKING: PARTICIPATION BY INTERESTED PERSONS

The NRC strongly encourages public participation and input throughout the NRC's rulemaking process.

RULEMAKING: PARTICIPATION BY INTERESTED PERSONS

The NRC publishes Federal Register notices, issues public announcements, holds public meetings if deemed advisable, and takes other actions designed to notify and invite all interested persons who desire to submit written comments or suggestions for consideration in connection with a proposed regulation to send them to the NRC.

RULEMAKING: NRC STAFF POLICY

NRC policy established November 20, 1978, requires that all substantive proposed and effective regulations will be mailed to affected licensees and other known interested persons.

RULEMAKING: PARTICIPATION BY INTERESTED PERSONS

All persons who submit substantive comments on a proposed regulation can identify their comments and the NRC staff responses to their comments in the comment analysis prepared in connection with the effective regulation.

RULEMAKING: PARTICIPATION BY INTERESTED PERSONS

The NRC's public comment procedure provides ample opportunity for all interested persons, including industry, to submit to the NRC their views on

the values, impacts, administrative burdens, costs, and other aspects of proposed regulations.

RULES OF PRACTICE: ADOPTION OF EFFECTIVE REGULATIONS

Only after thorough consideration of relevant matter presented does the NRC publish in the Federal Register notices of adoption of effective regulations that include responses to the substantive comments received.

ADVISORY COMMITTEES: NO NEED FOR REVIEW BOARD

NRC policy and procedures for direct distribution of proposed and effective amendments of NRC regulations to licensees and other interested persons assure that affected licensees and applicants are aware of all proposed and effective regulations of a substantive nature, without the need to form a review board as requested in the petition.

DENIAL OF PETITION FOR RULEMAKING

By letter dated July 19, 1978, Mr. Walter P. Peeples, Jr., on behalf of the Non Destructive Testing Management Association, filed with the Nuclear Regulatory Commission a petition for rule making (PRM 7-1).

The Petition

The petitioner requested the Commission to form a review board made up of responsible members of the industry to review all pertinent regulations and to clarify positions of the industry prior to issuance of all new regulations. The petitioner stated that the petition is related to all regulations that directly affect users of byproduct materials in the field of nondestructive testing. The petitioner stated also that since the field of nondestructive testing is large in scope, the members of the review group should be selected from the manufacturers and users of byproduct materials representing industrial radiography, gauging, and oil well-logging industries.

Basis For Request

As the basis for the petition, the petitioner stated:

Within the past few years, it has become obvious that certain regulations are placed upon the industry which are deemed unnecessary. It is the consensus of the industry that this is caused by certain individuals within the bureaucracy writing regulations and not being familiar with the industry.

We feel that this petition is necessary and that this approach will serve to educate both the industry and the U.S. Nuclear Regulatory Commission. The industry's objective is to maintain a liaison with the U.S. Nuclear

Regulatory Commission and to indicate to the U.S. Nuclear Regulatory Commission what is considered necessary and unnecessary in relationship to regulations.

Request for Comments on Petition

A notice of filing of petition for rule making was published in the Federal Register on September 14, 1978 (43 FR 41100). The comment period expired November 13, 1978. Four letters of comment were received in response to the notice. Two letters endorsed the petition as submitted. One letter agreed with the petitioner's reasons for the need to review regulations but indicated that establishing a Commission review board is an unnecessary addition to the increasing staff of the Commission and should not be employed. One letter stated a few members of its association do not believe the proposed review board would be productive, but a majority feel that such a review board would be beneficial.

NRC Staff Actions

The NRC strongly encourages public participation and input throughout the NRC's rule making process. The NRC publishes Federal Register notices, issues public announcements, hold public meetings if deemed advisable, and takes other actions designed to notify and invite all interested persons who desire to submit written comments or suggestions for consideration in connection with a proposed regulation to send them to the NRC.

In addition, the NRC staff has adopted procedures expected to result in a broader spectrum of public comment on proposed amendments to NRC regulations and better assurance of licensee awareness of and compliance with effective NRC regulations.

The procedures carry out NRC policy established November 20, 1978, that all substantive proposed and effective regulations will be mailed to affected licensees and other known interested persons. "Interested persons" include, for example, standards writing groups, trade associations, trade publications likely to be read by affected licensees, public interest groups, persons who commented on a proposed rule, and other persons who have expressed an interest in the regulation being issued, amended, or rescinded.

Under this policy, the NRC contact listed in the Federal Register notice of proposed or final rule making will be responsible for designating the addressees to whom the notice will be mailed and coordinating the mailing of the notice.

In keeping with this NRC policy, all interested persons who desire to receive proposed and effective regulations are invited to send their names, addresses, and areas of interest to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Distribution Services Branch (ADM/DSB), DDC.

All persons who submit substantive comments on a proposed regulation can identify their comments and the NRC staff responses to their comments in the comment analysis prepared in connection with the effective regulation. This public comment procedure provides ample opportunity for all interested persons, including industry, to submit to the NRC their views on the values, impacts administrative burdens, costs, and other aspects of proposed regulations.

Only after thorough consideration of relevant matter presented does the NRC publish in the Federal Register notices of adoption of effective regulations that include responses to the substantive comments received.

GROUNDNS FOR DENIAL

The Commission has given careful consideration to this petition for rule making (PRM 7-1) and has decided to deny the petition on the grounds that NRC policy and procedures for direct distribution of proposed and effective amendments of NRC regulations to licensees and other interested persons: (1) Fully satisfy the objectives set forth in the petition; and (2) Assure that affected licensees and applicants are aware of all proposed and effective regulations of a substantive nature, without the need to form a review board as requested in the petition.

A copy of the petition for rule making and copies of the letters of comment and the Commission's letter of denial are available for public inspection at the Commission's Public Document Room at 1717 H Street NW., Washington, D.C.

Dated at Bethesda, Maryland this 18th day of July, 1979.

For The Nuclear Regulatory Commission

Lee V. Gossick
Executive Director for Operations

[NOTICE PUBLISHED IN THE FEDERAL REGISTER ON
AUGUST 2, 1979, 44FR 45495]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**COMMISSIONERS:**

Joseph M. Hendrie, Chairman
Victor Gillinsky
Richard T. Kennedy
Peter A. Bradford
John F. Ahearne

In the Matter of

OFFSHORE POWER SYSTEMS

Docket No. STN 50-437

(Floating Nuclear Power Plants)

September 14, 1979

Ruling on a question certified to it by the Appeal Board in ALAB-500, 8 NRC 323 (1978), the Commission decides that the probability and consequences of a "Class 9 accident" (as that term is used in the Annex to former Appendix D to 10 CFR Part 50) at a floating nuclear plant are proper subjects for consideration in the staff's environmental analysis of Offshore Power Systems' application for a license to manufacture eight such plants. The Commission also announces its intention to re-examine the question of environmental consideration of "Class 9 accidents" at land-based reactors and to complete the rule making proceeding on this subject begun in 1971 with the issuance of the Annex.

MEMORANDUM AND ORDER

Offshore Power Systems ("Offshore" or "applicant") has applied to the Commission for a license to manufacture eight identical floating nuclear plants ("FNPs"). The FNP concept involves mounting a standard nuclear generating station on a barge. Offshore believes that the FNP concept may offer several advantages over land-based plants, including increased resistance to earthquakes, abundance of cooling water and the possibility that acceptable sites can be found near densely populated regions that lack suitable land sites.

The history of this complex proceeding is ably summarized in the Appeal Board's decision below, and need not be repeated here. *Offshore Power Systems* (Floating Nuclear Plants), ALAB-489, 8 NRC 194 (1978). The case is before the Commission on a single legal question certified to us by the Appeal Board—whether the probability and consequences of a so-called "Class 9"

accident at an FNP are proper subjects for consideration in the Commission's environmental analysis of Offshore's application. *Offshore Power Systems (Floating Nuclear Plants)*, ALAB-500, 8 NRC 323 (1978). The Commission's staff has done an analysis of such an accident at an FNP, and, in a supplemental Final Environmental Impact Statement ("FES III"), the staff has concluded that the liquid pathway risks associated with such an accident are significantly greater than would be the case with a land-based plant. Accordingly, the staff takes the position that license conditions designed to mitigate those risks should be imposed. The staff's position has not yet been tested at a hearing before a Licensing Board.

Offshore disputes certain aspects of staff's analysis. More fundamentally, however, Offshore contends that the Class 9 accident analysis should not have been performed at all, that it should be stricken from the impact statement, and that the subject should not be in contention at the upcoming hearing.

For the reasons that follow, we believe that the staff's analysis of the Class 9 accident question is properly included in the environmental impact statement in this proceeding. It follows from our existing rules that the subject may be placed in contention at the hearing and that the Board may thereafter impose whatever license conditions are proven to be necessary or appropriate to fulfill our responsibilities under the National Environmental Policy Act.¹

Although the particular question we decide today has not been before us previously, the broader subject of whether and how such accidents should be considered in the environmental analysis of reactor applications is not new. The term "Class 9 accidents" stems from a 1971 AEC proposal to place nuclear power plant accidents in nine categories to take account of such accidents in preparing environmental impact statements. That proposal was put forward for comment in a proposed "Annex" to the Commission's regulations implementing NEPA.² 36 *Fed. Reg.* 22851-52 (December 1, 1971). The nine categories in that "Annex" were listed in increasing order of severity. "Class 9" accidents involve sequences of postulated successive failure more severe than those postulated for the design basis of protective systems and engineered safety features. The Annex concluded that, although the consequences of Class 9 accidents might be severe, the likelihood of such an accident was so small that nuclear power plants need not be designed to mitigate their consequences, and, as a result, discussion of such accidents in applicants' Environmental Reports or in staff's environmental impact statements was not required. The Annex specifically referred to the "defense

¹ As discussed below, the issues considered here have arisen in the context of our NEPA responsibilities. Whether safety considerations might require the staff's proposed license conditions is not before us. The Licensing Board has not yet ruled on the safety of FNP's and we express no views on that issue here.

² Those regulations were then codified in Appendix D to 10 CFR Part 50. They are now codified in 10 CFR Part 51.

in depth” concept, the Commission’s quality control system, its inspection program, and its general requirement of design conservatism. 36 *Fed. Reg.* at 22852.³ When the Annex was published the Commission directed that it be followed as “interim guidance” until the Commission took further action. When the Commission revised and recodified its environmental regulations in 1974, the Annex’s status as a proposal and “interim guidance” was not changed, the Commission merely noting that it was “still under consideration.”⁴

While the Annex has never been formally adopted by the Commission—and is therefore not binding upon it—its guidance has of course been followed by our adjudicatory boards,⁵ and it has withstood challenge in the courts.⁶ In ALAB-489 the Appeal Board addressed the scope of that policy and also outlined its view of the underlying rationale. Although we need not reach all of the issues arising in this proceeding and decided by ALAB-489, a summary of how the Class 9 issue arose in this proceeding will place our decision in context.⁷

Staff originally planned a two-part impact statement for Offshore’s application—FES I would consider the environmental impact of the construction and operation of Offshore’s manufacturing facility in Jacksonville, Florida; FES II would consider the likely impact of deploying FNPs and strike a cost-benefit balance for the overall project. FES I was published in October 1975 and FES II in September 1976. However, in response to adverse criticism of FES II, staff issued an FES II Addendum in June 1978 which further analyzed the environmental impact of estuarine and riparian sites for FNPs. While FES II was under preparation, staff (apparently in response to suggestions by the Advisory Committee on Reactor Safeguards) undertook to prepare a “Liquid Pathway Generic Study” (“LPGS”) which would explore the consequences of accidental releases of radio-activity in ocean waters. The consequences of that generic study were then to be integrated into a further impact statement, FES III, to which the overall cost-benefit balance would be transferred. The draft LPGS was issued in September 1976, followed by the draft FES III the following month. The final LPGS was published in

³ This discussion of the Annex is taken from the Appeal Board decision in ALAB-489, 8 NRC at 209-10. As noted below, staff disputes that the Annex is based solely on probability and, although the Appeal Board rejected that view in ALAB-489, we need not decide that question today.

⁴ 39 *Fed. Reg.* 26279 (July 19, 1974).

⁵ See the decisions cited in ALAB-489, 8 NRC at 210 n.52.

⁶ See, e.g., *Hodder v. NRC*, Nos. 76-1709 and 78-1149 (D.C. Cir., December 26, 1978); *Lloyd Harbor Study Group v. NRC*, No. 73-2266 (D.C. Cir., November 29, 1978); *Porter County Chapter of the Izaak Walton League v. AEC*, 533 F.2d 1011 (7th Cir.), cert. denied 429 U.S. 858 (1976); *Carolina Environmental Study Group v. United States*, 510 F.2d 796 (D.C. Cir. 1976).

⁷ In addition to the Class 9 issue, the Appeal Board in ALAB-489 also addressed the authority of Licensing Boards to impose deadlines on staff’s filing of environmental impact statements. 8 NRC at 199-208. That subject is not before us today.

February 1978 and FES III appeared in December 1978.

Before us, as they did before the Appeal Board, the staff has offered four separate reasons why the Commission policy on Class 9 accident consideration embodied in the Annex and consistently applied to land-based plants should not prevent it and the Licensing Board from considering Class 9 accidents as part of the environmental evaluation of Offshore's application. Only one of those arguments need be addressed here.⁸ Staff argues, and a majority of the Appeal Board agreed,⁹ that the Annex is not controlling on the issue of consideration of Class 9 accidents for an FNP since FNPs were not within the Commission's contemplation when the Annex was issued. Staff further argues that the Annex should not be applied by analogy since a potential Class 9 accident at an FNP presents risks that clearly differ in kind from those presented by a similar accident at a land-based plant and also at least potentially presents a greater magnitude of risk. Therefore, since neither the Annex nor any subsequent Commission guidance explicitly proscribes consideration of Class 9 accidents for an FNP, staff argues that NEPA permitted at least initial consideration of Class 9 accidents in connection with Offshore's application. Once that inquiry had been made, and once what staff believes to be significant and unique risks had been identified, the full disclosure principles of NEPA require that the study be included in the impact statement and tested in the hearing process.

In accepting this argument, the Appeal Board noted that the policy of the Annex had never clearly been held to apply to FNPs and that the question before it really was whether to extend that policy to situations not considered at its adoption. The Board felt that several reasons militated against such an extension. First, the Board noted that the Annex has been "allowed to languish ever since" it was issued as a proposed regulation more than seven

⁸ Staff's other arguments can briefly be summarized. First, staff argues that the Annex was based upon an evaluation of risk (probability multiplied by consequences), not just on probability. The unique siting of an FNP created a possibility of a greater Class 9 risk than for a land-based plant, and therefore its consideration was not proscribed by the Annex. The Appeal Board rejected this argument, noting that a long line of Board decisions had read the Annex as being based solely on probability. 8 NRC at 212.

Second, staff argues that the policy of the Annex is that consideration of Class 9 accidents is not "required" but that it remains "permitted" to consider such accidents and to present the results of such consideration to the Licensing Board. The Appeal Board rejected this argument, noting that similar language used elsewhere in the Commission's regulations (e.g., Table S-3, 10 CFR 51.20(e)) has uniformly been read as not permitting any discussion of the matter in question. 8 NRC at 216-18.

Staff's third argument, which was not addressed by the Board, is that the Annex either explicitly or implicitly contains a proviso waiving its proscription on Class 9 accidents whenever "special circumstances," such as the unique siting for FNPs, make application of the proscription unwise. Cf. 10 CFR 2.758(b).

⁹ Dr. Buck dissented on this point, although he concurred in the remainder of the decision. 8 NRC at 225.

years ago. 8 NRC at 220. Second, the Board found that the concept of FNPs was “unknown” when the Annex was issued. *Id.* Third, the Board noted that the Annex had been issued by the AEC and not the NRC and that “in this area it is a mistake to assume too readily that the NRC would automatically extend, *sub silentio*, policies formulated by the Atomic Energy Commission.” *Id.* at n.92. Finally, the Board apparently felt that the NEPA mandate to study the environmental consequences of major federal actions to the fullest extent possible supported a policy of deciding open questions in favor of considering matters of potential environmental significance. *See id.* at 220-21.

We agree with the result the Appeal Board reached, although on a somewhat different basis—a basis that was not available to the Appeal Board. Unlike the Board below, we are empowered to make policy as well as to apply it. As the Board decision in ALAB-489 and the parties’ briefs submitted to us demonstrate, at the very least, it is far from certain that the Annex and the policy deriving from it absolutely proscribe any consideration of Class 9 accidents at an FNP. And even if the Annex did proscribe such consideration, it was only intended as interim guidance until the Commission determined to take further action. Accordingly, we are free to decide on the basis of the facts known to us today whether the Licensing Board should be allowed to consider the environmental consequences of a Class 9 accident at the FNPs which Offshore proposes to manufacture.

As we noted earlier, we need not approach this question as an academic exercise. The NRC staff has already prepared the FES III and it has concluded that the environmental consequences of a Class 9 accident are such as to call for specific licensing conditions on Offshore’s application. FES III was adopted only after staff solicited and analyzed public comment, including extensive comments submitted by Offshore. In reality then, the question before us is whether we wish to order the Licensing Board to blind itself to what our own staff views as an environmental risk that requires specific mitigative actions. NEPA is based on the philosophy that the federal government should consider all available information about the reasonably likely environmental consequences of its proposed actions and should take appropriate measures to mitigate or eliminate the adverse impacts of those actions when practical. In view of that philosophy we should not refuse to consider in this case the potential relevance of the LPGS and FES III to the Commission’s consideration of Offshore’s application, and we are prepared to exercise our policymaking authority to remove any ambiguity about whether the policy of the Annex runs counter to that action.

Offshore raises two remaining objections to any consideration of Class 9 accidents. First, Offshore notes that the Commission’s Final Acceptance Criteria for Emergency Core Cooling Systems (set out in 10 CFR 50.46 and in Appendix K to 10 CFR Part 50) are designed to assure that no Class 9 accident will occur and that in fact no reactor can suffer a Class 9 accident unless its ECCS fails. Since there is apparently no dispute that Offshore’s standardized

reactors will satisfy the Acceptance Criteria, Offshore argues that consideration of Class 9 accidents in connection with its application amounts to a challenge of the ECCS regulations. As the Board noted below, there is a "certain logical strength" to that argument. 8 NRC at 221. However, it fails here because, as the Board below correctly noted, we have previously held in *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Station), CLI-74-40, 8 AEC 809, 881-14 (1974), that satisfaction of the criteria does not preclude the use of inconsistent assumptions about ECCS failure for other purposes.

Offshore argues that it is inequitable for the Commission to consider the environmental consequences of a Class 9 accident at an FNP when it does not consider such consequences with respect to land-based reactors. It asserts that the probability of a Class 9 accident is the same for an FNP as for a land-based reactor, and therefore since consideration of Class 9 accidents for land-based reactors is proscribed solely on the basis of probability,¹⁰ such consideration should also be proscribed for FNPs. For the reasons discussed above, we believe that such consideration is now required in this case. Our grant of review in this proceeding was limited to the narrow question certified to us by the Appeal Board and it is neither necessary¹¹ nor appropriate for us to employ this particular adjudicatory proceeding to resolve the generic issue of consideration of Class 9 accidents at land-based reactors. Such a generic action is more properly and effectively done through rule making proceedings in which all interested persons may participate.

Therefore, we are not today expressing any views on the question of environmental consideration of Class 9 accidents at land-based reactors which, as the Board noted, present risks different in kind and perhaps in magnitude from those risks presented by FNPs. *See* 8 NRC at 218-19. However, we are concerned about this question and intend to complete the rule making begun by the Annex and to reexamine Commission policy in this area. To aid in that re-examination we ask our staff to:

1. Provide us with its recommendations on how the interim guidance of the Annex might be modified, on an interim basis and until the rule making on this subject is completed, to reflect developments since 1971 and to accord more fully with current staff policy in this area; and

¹⁰ We need not and do not address the correctness of the Board's decision on that interpretation of the Annex.

¹¹ We are not compelled to treat Class 9 accidents in precisely the same fashion in the floating plant application as we treat such accidents in connection with consideration of applications for land-based plants. Offshore's equal treatment argument applies only to parties similarly situated. Offshore's reactors will be afloat unlike any other electric power reactor we have ever licensed. *But cf.* N.S. Savannah, 2 AEC 416 (1964); 1 AEC 815 (1961). Their unique siting raises a host of issues, of which the Class 9 issue is only one, which clearly justify our treating Offshore's application differently than we treat an ordinary application. Therefore, our obligation, which we have fulfilled, is to treat Offshore in a fair and rational manner, but not necessarily in the same manner we treat applications which belong in different categories.

2. In the interim, pending completion of the rule making on this subject, bring to our attention, any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered.

The question certified to us in ALAB-500 is therefore answered "yes" and this matter is remanded to the Licensing Board for further proceedings consistent with this opinion.

It is so ORDERED.

For the Commission,

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 14th day of September, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

THE TOLEDO EDISON
COMPANY AND
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY

Docket Nos. 50-346A
50-500A
50-501A

(Davis-Besse Nuclear Power
Station, Units 1, 2 and 3)

THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY et al.

Docket Nos. 50-440A
50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

September 6, 1979

Upon consideration of appeals by the applicants and an intervenor, the Appeal Board modifies the antitrust decision below to grant additional relief in the form of a license condition requiring applicants to sell wholesale power to certain public power systems and, with that modification, affirms the Licensing Board's decision.

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Mr. David McN. Olds, Pittsburgh, Pa., (**Mr. Joseph A. Rleser, Jr.**, with him on the briefs) for Duquesne Light Company, *applicant*.

Mr. Terence H. Benbow, New York, N. Y. (**Messrs. Stevan A. Berger** and **Steven B. Perl** with him on the briefs) for Ohio Edison and Pennsylvania Power Companies, *applicants*.

Mr. David C. Hjelmfelt, Washington, D. C. (**Messrs. Reuben Goldberg** and **Michael D. Oldak**, Washington, D. C., and **Malcolm C. Douglas**, **Jack M. Schulman**, and **Robert D. Hart**, Cleveland, Ohio, with him on the briefs) for the City of Cleveland, *intervenor*.

Mr. Melvin G. Berger (*Assistant Attorney General Shenefield*, *Deputy Assistant Attorney General Sims*, **Messrs. David A. Leckie** and **Donald L. Flexner** and **Ms. Janet R. Urban** with him on the briefs) for the Attorney General of the United States.

Mr. Roy P. Lessy, Jr. (**Messrs. Joseph Rutberg** and **Benjamin H. Vogler** with him on the briefs) for the staff of the Nuclear Regulatory Commission.

TABLE OF CONTENTS

Opinion of Messrs. Rosenthal and Salzman:

I. Nature of the Case	270
Introductory	270
A. NRC Antitrust Responsibilities	271
B. The Proceedings Below	273
1. The applicants	273
2. Competing systems	274
3. The license applications	275
4. Initiation of proceedings before the Licensing Board	276
5. The decision below	277

II. Antitrust Standards Under Section 105c	282
III. Scope of Relief	287
Appendix: License Conditions as Modified by the Appeal Board	296
 <i>Opinion of Mr. Sharfman:</i>	
Introduction	299
I. The Product Markets	301
II. State Laws	302
A. Generally	302
B. The Ohio Anti-Pirating Law	303
C. The Ohio Constitution (Article XVIII, Section 6)	306
D. Respects in Which the Licensing Board Went Too Far	307
E. Ohio Amended House Bill No. 577	309
III. Restraints on the Resale of Electric Power	311
A. Territorial and Customer Restrictions	313
B. Rights of First Refusal	320
1. Cleveland	321
2. Painesville	322
IV. The Desirability of Competition Among Electric Utilities	323
V. Refusal to Wheel	327
A. By CEI	327
B. By Ohio Edison	331
C. By Toledo Edison	333
VI. CAPCO Membership	334
A. Reserve Requirements	334
B. Denial of Membership to Municipalities	339
1. Generally	339
2. Pitcairn	346

3. Cleveland	347
a. Points Raised by Duquesne	347
b. Points Raised by CEI	349
c. Application of the Rule of Reason	352
VII. Denial of Nuclear Access to Cleveland	358
VIII. Interconnection with Cleveland by CEI	362
A. Collateral Estoppel	362
B. The Attempt to Force Cleveland to Raise Its Rates	364
C. Cleveland's Debt to CEI For Services Rendered	365
D. The 69 kv Interconnection	365
E. Occasions When CEI Lacked Sufficient Power to Supply Cleveland	368
IX. Territorial Agreements	369
A. Between CEI and Ohio Edison	369
B. Between Toledo Edison and Ohio Power	369
C. Between Toledo Edison and Consumers Power	370
D. Between Ohio Edison and Holmes-Wayne Cooperative	373
E. Between CEI and Painesville	373
F. The Impact of the Agreements	375
X. Toledo Edison — Acquisitions	376
XI. Toledo Edison — Joint Ownership of Facilities	378
XII. Ohio Edison — Negotiations with WCOE	378
XIII. Ohio Edison — Acquisitions	380

XIV. Ohio Edison and Pennsylvania Power —	
Price Squeeze	382
XV. Nexus	384
XVI. Relief	
A. Applicants' Appeal	385
1. Public Interest	385
Objections to Specific License	
Conditions	387
a. Percentage of Nuclear Plant	
Capacity to be Made Available	
to Others	387
b. Allocation of Nuclear Capacity	
Among Requesting Entities	388
c. Wheeling Out — Impact on	
Reliability	388
d. Deadline for Commitments to	
Nuclear Plant Participation	389
e. Reductions in Wheeling Services	390
f. The Planning of Transmission	
Lines	392
g. Reserve Sharing	392
3. Failure to Impose Separate License	
Conditions for Each Applicant	393
A. 4. The Scope of Relief	394
B. Cleveland's Appeal	398
1. Wholesale Power	398
2. Voting Rights for New Members of	
CAPCO	401
3. Access to Beaver Valley, Unit 2	403
C. Conclusion	405

DECISION

Opinion of Messrs. Rosenthal and Salzman:

This is an appeal from a Licensing Board decision in an antitrust proceeding under section 105c of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2135(c). The Board ruled that the construction and operation of the five nuclear power plants involved in this case would create and maintain "a situation inconsistent with the antitrust laws" within the meaning of section 105c(5) unless the NRC included remedial conditions in their licenses. LBP-77-1, 5 NRC 133 (1977) (initial decision), and LBP-77-7, 5 NRC 452 (1977) (on motion for stay).¹ Applicants appealed and the City of Cleveland filed a cross-appeal on the adequacy of the relief granted. The matter was briefed and argued before us and assigned for purposes of writing a decision to the third member of this Board, Jerome E. Sharfman.

Shortly after completing his opinion, however, our colleague resigned from the Appeal Panel to enter private law practice in another city. It was impossible for us to complete our own review of Mr. Sharfman's lengthy decision before his departure. And since that time, considerations of avoiding even the appearance of a conflict of interest situation have served to preclude our discussing with him any aspect of this proceeding.

Had Mr. Sharfman remained a member of this Board, or continued to be available for consultation, we might well have suggested revisions in his treatment of certain issues and have endeavored in other respects to persuade him of the correctness of our views (particularly on the question of relief) to the extent that they do not coincide with his. Those options have not been open to us. In the circumstances, we file his opinion as it was presented to us (p. 299 *ff.*, *infra.*). We concur in its ultimate factual and legal conclusions and the result it reaches except where indicated in our separate opinion, which follows immediately.

I. NATURE OF THE CASE

Introductory. The Justice Department, the City of Cleveland and the Commission staff are the complaining parties in this antitrust proceeding. They alleged that the five electric utility companies applying for nuclear power plant licenses possess monopoly power in the markets they serve. According to Justice, Cleveland and the staff, the applicants have used their control over generation facilities and transmission lines to foreclose or destroy competition

¹ "LBP" designates opinions of an Atomic Safety and Licensing Board; "ALAB", of an Appeal Board; and "CLI" of the Commission; all are published in "NRC" reports. Congress transferred the regulatory functions of the Atomic Energy Commission (AEC) together with the Licensing and Appeal Boards to the Nuclear Regulatory Commission (NRC) on January 19, 1975. Energy Reorganization Act of 1974, Sections 201 (f) and (g), 42 U.S.C. Sections 5841 (f) and (g). "Commission" refers to the AEC or NRC as the context requires.

from smaller municipal electric systems and rural electric cooperatives operating in their midst. Awarding the applicants licenses for the nuclear plants in suit, it was contended, would maintain if not worsen this situation inconsistent with the antitrust laws. The Licensing Board was asked to condition the applicants' nuclear licenses to prevent that occurrence. The Board did so after finding the applicants guilty of repeated and flagrant violations of the antitrust laws in dealings with those competitors. The soundness of the Board's analysis and the appropriateness of its remedy are challenged in these appeals.

A. NRC Antitrust Responsibilities.

This is only the second full-fledged Licensing Board antitrust decision on the merits to come before us.² Because this aspect of the Commission's jurisdiction is in some respects *sui generis*, we begin our review by sketching our antitrust responsibilities as the background against which the Board's actions must be judged.

The Commission's antitrust obligations were cast in their present form in 1970. That year Congress decided in essence that the use of nuclear power for the generating of electricity on a large scale was practicable. Accordingly, it amended the Atomic Energy Act to require future nuclear power plants to be licensed as commercial ventures.³

The Atomic Energy Act had contained antitrust provisions before 1970. Section 105a provided that "[n]othing in this Act shall relieve any person from the operation of the [antitrust laws]" and authorized the Commission to suspend or revoke the nuclear licenses of those found by a court to have violated them; Section 105b directed the Commission to report possible infractions of those laws to the Attorney General.⁴ These provisions were retained, but Section 105c was redrawn in 1970. It now obliges the Commission itself to review applications for commercial nuclear power facilities for consonance with antitrust law and policy before licensing the plants.⁵ The change reflects congressional recognition that the nuclear industry is in great measure the product of public funds, having originated as a

² The first was *Consumers Power Company* (Midland Plant, Units 1 and 2), LBP-75-39, 2 NRC 29 (1975), *reversed*, ALAB-452, 6 NRC 892 (1977) ("*Midland*"). Because many utilities have several nuclear plants, shortened citations to adjudicatory decisions of the NRC and its boards are customarily in the form of a reference to the particular facility involved.

³ These are governed by section 103 of the Act, 42 U.S.C. Section 2133. Before the commercial worth of such plants was deemed established, they were licensed as "research and development" facilities under section 104b of the Act, 42 U.S.C. Section 2134(b). Section 104b licenses need not be reviewed by the Commission for antitrust implications. *Cities of Statesville v. AEC*, 441 F.2d 962 (D.C. Cir. 1969).

⁴ See 42 U.S.C. Sections 2135(a) and (b), and *Fort Pierce Utilities Authority v. United States*, — F.2d—, —, *Nuclear Reg. Rep. (CCH)* 20,110, pp. 16,629, 16,632-33 (D.C. Cir. 1979), *petition for certiorari filed*, 48 U.S.L.W. 3049 (No. 78-1849).

⁵ Construction permits for certain commercial nuclear plants—including Davis-Besse Unit 1
(Continued on next page)

government monopoly, as well as the legislature's concern that the licensing process not encourage private monopolies but assure fair access to nuclear power.⁶

Section 105c as amended in 1970 directs the Commission to determine whether licensing the construction or operation of a nuclear power plant "would create or maintain a situation inconsistent with the antitrust laws." The clause invokes traditional antitrust statutes, *i.e.*, the Sherman, Clayton, and FTC Acts.⁷ The Commission must "apply principles developed by the Antitrust Division, The Federal Trade Commission, and the Federal Courts, to [the nuclear] industry." *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), *supra*, CLI-77-13, 5 NRC at 1316.

These duties are exercised in conjunction with the Attorney General. Upon receipt of an application to build or operate a nuclear facility, the Commission solicits his advice and publishes it in the Federal Register. "Where The Attorney General advises that there may be adverse antitrust aspects and recommends that there be a hearing," he must be allowed to participate in Commission proceedings on those aspects.⁸ An antitrust hearing may also be precipitated by some other governmental entity or by a private party's petition.⁹ Others with interests that might be affected by the outcome of such a proceeding may also be allowed to intervene.

If the hearing record demonstrates with "reasonable probability"¹⁰ that an anticompetitive situation within the meaning of Section 105c would result from the grant of an application, the Commission may refuse to issue a license or issue one with remedial conditions.¹¹ Findings of actual Sherman or Clayton Act violations, however, are not necessary. Under Section 105c,

(Continued from previous page)

under consideration here—were "grandfathered," *i.e.*, exempted from that preclicensing antitrust review. Operating licenses for those plants, however, were not similarly exempted. Section 105c(8), 42 U.S.C. Section 2135(c) (8); *The Toledo Edison Company* (Davis-Besse Station, Unit 1), ALAB-323, 3 NRC 331 (1976). See also *Fort Pierce Utilities Authority v. United States, supra*, —F.2d at —, Nuclear Reg. Rep. (CCH) ¶ 20,110 at p. 16,630; *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), CLI-77-13, 5 NRC 1303 (1977).

⁶ *Louisiana Power and Light Company* (Waterford Station, Unit 3), CLI-73-7, 6 AEC 48 (1973) ("Waterford I"), and CLI-73-25, 6 AEC 619, 620 (1973) ("Waterford II"); *Midland, supra*, ALAB-452, 6 NRC 892, 897 (1977).

⁷ Section 105c(5), 42 U.S.C. Section 2135(c) (5), incorporates by reference the "antitrust laws as specified in section 105a," which provision lists the statutes mentioned. 42 U.S.C. Section 2135(a).

⁸ Section 105c(1) and (5), 42 U.S.C. Section 2135c(1) and (5); *Fort Pierce Utilities Authority v. United States, supra*, —F.2d at —, Nuclear Reg. Rep. (CCH) ¶ 20,110 at p. 16,634; *Kansas Gas and Electric Company* (Wolf Creek Station, Unit 1), ALAB-279, 1 NRC 559 (1975).

⁹ See, *e.g.*, *Pacific Gas and Electric Company* (Stanislaus Nuclear Project, Unit 1), ALAB-550, 9 NRC 683 (June 15, 1979).

¹⁰ *Midland, supra*, ALAB-452, 6 NRC at 908 (fns. 32 and 33 and accompanying text).

¹¹ Section 105c(6), 42 U.S.C. Section 2135(c) (6). See, *Kansas Gas and Electric Company* (Wolf Creek Station, Unit 1), ALAB-279, 1 NRC 559, 564 (1975).

procompetitive license conditions are also authorized to remedy situations inconsistent with the "policies clearly underlying" the antitrust laws.¹²

B. The Proceedings Below.

1. The applicants. The Cleveland Electric Illuminating Company (CEI), The Toledo Electric Company, Duquesne Light Company, Ohio Edison Company and its subsidiary Pennsylvania Power Company are electric utilities that have asked the Commission to license the nuclear power plants in suit. These investor-owned companies are engaged in generating, transmitting, and distributing electric energy to wholesale, retail, and industrial customers in a 14,000 square mile area of Ohio and western Pennsylvania with a population of more than seven million. In 1973, their combined generating capacity (without the nuclear plants) was 11,717 megawatts (Mw), they operated 4,753 miles of "transmission lines,"¹³ their revenues exceeded one billion dollars and their net income approached one hundred and fifty million dollars.¹⁴ The applicants concededly control a 95 percent or greater share of the bulk power generation and transmission facilities in their respective service areas.¹⁵ They do not, however, compete with one another.¹⁶

In 1967, the five applicants formed the "Central Area Power Coordination" group, a "power pool" commonly referred to as "CAPCO." A power pool is "two or more interconnected electric systems planned and operated to supply power in the most reliable and economical manner for their combined load requirements and maintenance program."¹⁷

The CAPCO pool is not an automated, integrated electric power system. Rather, it is a contractual relationship that governs the dealings of the five applicants with one another and with outside (non-CAPCO) power systems. Within a frame-work initially established by a "Memorandum of Understanding" and later memorialized in the "CAPCO Basic Operating Agreement," the applicants have contracted with one another to coordinate their operations, interchange electric power, and share reserves.¹⁸ In addition, they

¹² *Midland, supra*, ALAB-452, 6 NRC at 907-09 and authorities there cited. See also, *South Texas, supra*, CLI-73-13, 5 NRC at 1316; *Waterford I, supra*, CLI-73-25, 6 AEC at 49.

¹³ 5 NRC at 151-52. It is more efficient to transmit electricity over distances at high voltages. "Transmission lines" are those high voltage carriers (usually above 69 Kv) that bring current from relatively distant stations to local distribution points. There the voltages are stepped down and sent across lower voltage "distribution lines" to local customers. DJ Exh. 587 at 98.

¹⁴ 5 NRC at 151-52 and Tr. 440-41. A breakdown of these statistics by company appears at the pages cited. See also, Staff Exh. 157 at 3 and Staff Exh. 207 following 26.

¹⁵ 5 NRC at 153-54; *Applicants' Opening Brief* at 88; and Stipulation, Tr. 440-41, 448-49.

¹⁶ 5 NRC at 143.

¹⁷ Edison Electric Institute, *Glossary of Electric Utility Terms* (1970 ed.), at 64.

¹⁸ "Reserves are . . . generating capacity above and beyond that needed at peak times to which resort may be had when generating units are down, whether in an emergency or simply for routine overhaul and maintenance." *Midland, supra*, ALAB-452, 6 NRC at 950.

plan their future generation and transmission facilities as if the pool's requirements were those of a single electric power system. The arrangements allow the applicants to exchange power with non-CAPCO systems so long as the transactions are consistent with the Basic Operating Agreement. This permits applicants to take advantage of "economies of scale" (*i.e.*, to build larger plants capable of generating power at lower cost), to maintain lower reserves, and to put their surplus generating capacity to better use, all to a greater extent than they would have been able to achieve individually. The effect of the CAPCO arrangement is to allow applicants to increase the reliability of their electric power systems while lowering the costs of operating them.

2. Competing systems. There were and are competing independent electric power systems interspersed within applicants' service areas¹⁹ operated by rural electric cooperatives and municipalities. These systems were much smaller than the applicants. Some had distribution facilities only, which they used to serve retail customers with power purchased wholesale from one of the CAPCO companies. Others, however, operated their own generating facilities and marketed their own power (supplemented in some instances by wholesale purchases from one of the applicants) to retail customers.

The largest of these small isolated systems was the Municipal Electric Light and Power System (MELP) of the City of Cleveland. In 1973, MELP had a generating capacity of 180 Mw and also purchased "emergency power"²⁰ from CEI. MELP competed for retail customers virtually door-to-door with CEI, whose service area also extended beyond the city limits. At the time, MELP supplied electricity to about 20 percent of the retail market in Cleveland and did so at lower rates than CEI.²¹

The municipal and cooperative systems were not interconnected with one another and, unless connected to a transmission network controlled by one of the applicants, operated in isolation.²² These circumstances effectively precluded their joining a power pool, sharing reserves or engaging in coordination practices without applicants' agreement and cooperation. The

¹⁹ The Board below refers to the "Combined CAPCO Company Territories" as "CCCT" for short. *See, e.g.*, 5 NRC at 142.

²⁰ Service supplied or received for a limited period to replace normally available power, as in the case of an unscheduled outage of generating equipment. FPC, *Glossary of Important Power and Rate Terms* (1965) at 18; *See also Midland, supra*, ALAB-452, 6 NRC at 903 fn. 22.

²¹ 5 NRC at 166. Other municipal systems in the CCCT included those of Painesville, Ohio with a 38 Mw generating capacity; Napoleon, Ohio with a 17.5 Mw generating capacity; and the Borough of Pitsaurn, Pennsylvania with a 3.0 Mw generating capacity (all figures for 1973). *Applicants' Opening Brief* at 17.

²² *E.g.*, Painesville and Cleveland are isolated in CEI's service area, 5 NRC at 176 and 167; Pitsaurn in Duquesne's service area, 5 NRC at 184; Newton Falls, Norwalk, and seven members of the Buckeye Cooperative in Ohio Edison's service area, 5 NRC at 196-97; and Napoleon and Bowling Green in Toledo Edison's service area, 5 NRC at 217.

CAPCO companies' control of the surrounding transmission lines also meant that the small systems could not obtain bulk power²³ supplies from sources outside CAPCO unless the applicants "wheeled" it to them.²⁴ With limited exceptions, however, the CAPCO companies did not coordinate with the municipal and cooperative systems and would not wheel non-CAPCO power to them. The applicants did, however, provide those services to one another and to non-CAPCO systems against which they did not compete.²⁵

3. **The license applications.** Commencing in 1969, the applicants sought permits from this Commission to build a series of nuclear power plants with a combined generating capacity in excess of 5,000 Mw.²⁶ The first application, filed by CEI and Toledo Edison jointly, was for Unit No. 1 of the Davis-Besse facility in Ohio.²⁷ The Attorney General, while noting a dispute between CEI and Cleveland pending before the Federal Power Commission over the City's request for an interconnection, did not request an antitrust hearing on Davis-Besse 1. 36 Fed. Reg. 17888 (September 4, 1971). The city of Cleveland did, however. In a petition filed on July 6, 1971, Cleveland stressed that MELP (its municipal power system) both purchased power at wholesale from CEI and competed with it at retail. Cleveland alleged that the utility had exercised its control over generation and transmission facilities anticompetitively to block MELP's attempt to obtain bulk power at lower cost from other sources. In addition to other relief, the city asked for license conditions giving MELP access to power generated by the nuclear plant.

In March of 1973, the five applicants sought Commission permits to build Perry Units 1 and 2 in Ohio. This time the Attorney General's advice letter (dated December 17, 1973) recommended an antitrust hearing. The letter stressed activities of CEI, which was described as "engaged in intense competition with the city of Cleveland at the retail distribution level, and, to a lesser extent, with [the city of] Painesville." After observing that "CEI controls all of the transmission facilities surrounding these two cities," the Attorney General portrayed CEI's objectives as being "to reduce and ultimately eliminate" the two municipal systems. The advice letter recounted a

²³ The product sold by electric utilities to their wholesale customers is firm power in bulk. "[F]irm power" has a specific meaning in the industry. It refers to a dependable, uninterrupted, long-term supply of electric power; 'wholesale power' is firm power in bulk." *Midland, supra*, 6 NRC at 961.

²⁴ "Wheeling," a term of art, refers to the "transfer by direct transmission or displacement electric power from one utility to another over the facilities of an intermediate facility." *Otter Tail Power Company v. United States*, 410 U.S. 366, 368 (1973).

²⁵ 5 NRC 143; Staff Exh. 184 at Section 4.3; 185 at Section 1.01.

²⁶ The planned generating capacity of the three Davis-Besse Units was 906 Mw each and the two Perry units 1205 Mw each.

²⁷ Because requested in 1969, the construction permit for Davis-Besse Unit 1 was "grandfathered" under the 1970 amendments to Section 105(c) and was issued subject to modification after post-licensing antitrust review. See fn. 5, *supra*.

history of unsuccessful negotiations between CEI and the municipalities over interconnections, wheeling, coordination, and access to large-scale generation, and characterized CEI's conduct in these matters as "inconsistent with the antitrust laws" 39 Fed. Reg. 2029 (January 16, 1974). The city of Cleveland also petitioned for an antitrust hearing on this application and asked leave to intervene and participate as a complaining party.

In August 1974, the five applicants jointly requested construction permits for Units 2 and 3 of the Davis-Besse facility. The Attorney General again recommended an antitrust hearing. His advice was based on the applicants' refusal to admit the municipal systems into the CAPCO pool and what he judged a pattern of anticompetitive dealings by the applicants with the smaller systems. According to his advice letter, "[t]he Applicants' refusals to wheel power, to interconnect and to engage in coordinated operation with smaller utilities raise problems which should be considered in the perspective of their monopoly control of the transmission facilities surrounding the smaller systems of their competitors. Antitrust principles have evolved which place distinct limits upon a supplier's exercise of monopoly power at one level of distribution to adversely affect competition at another level," citing the Supreme Court's decision to that effect in *Otter Tail Power Co v. United States*, 410 U.S. 366 (1973). The Attorney General stated that a section 105c hearing was called for because the "[c]onstruction and operation of the Davis-Besse Nuclear Power Station, Units 2 and 3, and marketing of its power output would maintain such an anticompetitive situation. Granting the license applied for without adequate antitrust conditions will generate new opportunities for the Applicants to engage in coordinated operation with each other and will provide them with a new source of relatively low-cost power and energy at the time they are effectively foreclosing any possibility of their competitors sharing in the benefits of coordinated operation and development." 40 Fed. Reg. 8395-96 (February 27, 1975). The city of Cleveland petitioned to intervene in this proceeding as well.²⁸

4. Initiation of proceedings before the Licensing Board. In accordance with Commission practice, the applications, advice letters, and petitions to intervene by Cleveland and others²⁹ were referred to a Licensing Board which

²⁸ In 1973, the applicants had also jointly sought permission to build, north of Pittsburgh, Beaver Valley Unit No. 2, a 923 Mw nuclear generating facility. The Attorney General advised the Commission that no antitrust hearing was needed, 38 Fed. Reg. 10659 (April 30, 1973). Cleveland's petition for such a hearing was denied as late, *Duquesne Light Company* (Beaver Valley, Unit 2), LBP-74-13, 7 AEC 282, *reconsideration denied*, LBP-74-24, 7 AEC 705, *affirmed*, ALAB-208, 7 AEC 959, *affirmed*, CLI-74-24, 7 AEC 953 (1974). Whether MELP should be given access to Beaver Valley Unit 2 as a matter of relief in this case is a separate question discussed *infra*, pp. 304 ff.

²⁹ American Municipal Power-Ohio (AMP-0) and the State of Ohio also petitioned to intervene in *Perry 1 and 2* on February 13, 1974; Ohio also petitioned to intervene in *Davis-Besse* (Continued on next page)

directed antitrust hearings held on the three applications.³⁰ The Attorney General (represented by the Justice Department's Antitrust Division), the city of Cleveland, and the Commission staff were admitted as complaining parties and the applicants designated as respondents. At the Commission's suggestion,³¹ the Board consolidated the cases in light of the correspondence of parties and similarity of issues.³²

The applicants were charged in essence with possessing monopoly power and using it, singly and in combination, against the cooperative and municipal power systems to preclude competition and to maintain or enlarge applicants' monopolies. The conduct complained of was asserted to be in violation of Section 1 of the Sherman Act, 15 U.S.C. §1 (prohibiting contracts, combinations and conspiracies that unreasonably restrain interstate commerce); Section 2 of that Act, 15 U.S.C. §2 (forbidding the monopolization or attempted monopolization of commerce); and Section 5 of the Federal Trade Commission Act, 15 U.S.C. §45 (outlawing "unfair methods of competition")

Applicants denied the charges as unfounded. They attributed their dominant positions to natural forces prevailing in the electric utility industry and emphasized that their activities were generally subject to state and federal regulations. To the extent their conduct was free of regulatory supervision, applicants contended that the matters called into question were actually reasonable practices in the power industry. Finally, applicants asserted that the instances of anticompetitive activities alleged were without "nexus"—rational connection—to the nuclear licenses they sought and, therefore, beyond the Commission's regulatory reach in any event.

5. The decision below. The hearing commenced on December 8, 1975, consumed seven months of trial time and resulted in a record of nearly thirteen thousand transcript pages with over thirteen hundred exhibits.

On January 6, 1977, the Licensing Board rendered an initial decision treating the allegations in comprehensive detail. 5 NRC 133-260. The Board characterized the principal issue as "whether dominant electric companies in a relevant market area which do not compete with one another may make competitive benefits, including coordination and pooling, available to each other while denying these benefits to smaller actual or potential competitive entities within the market." The Board judged this a matter of Commission

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2 and 3 on March 13, 1975. All the petitions were granted. On September 11th of that year, however, AMP-O formally withdrew its intervention with the Licensing Board's consent.

On November 7, 1975 Ohio represented that it would neither file pre-trial briefs nor attend the hearings but "reserved its right" to file proposed findings of fact and conclusions of law at the end of the case. The State neither attended the proceedings nor made any filings; it has thus effectively withdrawn from participation.

³⁰ LBP-74-24, 7 AEC 705, 706-09 (1974).

³¹ CLI-74-4, 7 AEC 15, 17 (1974).

³² See LBP-77-1, 5 NRC at 139.

concern because “the benefits to be shared or denied include power generated from proposed nuclear stations [having] a substantial competitive impact . . . in the relevant market.” 5 NRC at 141. In broad outline, the decision sustained in large measure the complaining parties’ allegations, rejected applicants’ legal defenses, concluded that licensing these five nuclear power plants would continue or worsen a situation inconsistent with the antitrust laws, and imposed remedial conditions on their licenses to ameliorate those consequences.

The Licensing Board applied the antitrust laws as construed by the federal courts and the Federal Trade Commission in cases arising directly under the Sherman, Clayton, and FTC Acts.³³ The principal purposes of those statutes are the preservation and encouragement of competition.³⁴ The Board’s approach thus eschewed applicants’ argument that it first had to decide whether competition in the electric utility industry is in the public interest. The Board ruled that “this broad policy issue” was not one Congress had left for the Nuclear Regulatory Commission to decide in the course of administering Section 105c of the Atomic Energy Act.³⁵

Several allegations of anticompetitive conduct amounted to charges of “monopolization” in violation of section 2 of the Sherman Act—the use of monopoly power to preserve a monopoly, foreclose competition, gain competitive advantage or destroy competitors in a “relevant market.” In antitrust law the relevant market concept is two dimensional, embracing both the area of effective competition—the “geographic market”—and the goods or services being sold or traded there—the “product market.” The Board delineated the former as the combined CAPCO company territories (CCCT), with their individual service areas constituting geographic submarkets. 5 NRC at 164-65. Within the geographic market the Board found three product markets: (1) “retail power transactions”, the distribution and sale of “firm” (*i.e.*, dependable) electric power to the ultimate consumer;³⁶ (2) “regional power exchange transactions”, where the producers of firm power in bulk deal in the various elements used to produce it economically; and (3) “bulk power services”, essentially the regional power exchange market just described combined with the “wholesale market”, where producers or wholesalers of firm bulk power supply retail distribution systems. 5 NRC at 160-64.³⁷

The Board found the applicants to possess monopoly power individually in the relevant markets within their respective service territories and jointly in

³³ 5 NRC at 455.

³⁴ *Northern Pacific Ry. Co. v. United States*, 356 U.S. 1, 4-5 (1958) (Sherman Act); *Brown Shoe Co. v. United States*, 370 U.S. 294, 319-21 (1962) (Clayton Act); *FTC v. Brown Shoe Co.*, 384 U.S. 316, 320-22 (1966) (FTC Act).

³⁵ 5 NRC at 457.

³⁶ “Firm” power implies a utility commitment to insure its delivery on demand when called for by the customer. See fn. 23, *supra*.

³⁷ Because the demand for firm power varies daily and seasonally, generating capacity needed
(Continued on next page)

the CCCT. These findings rested on applicants' stipulated dominance and control over the generation and transmission facilities in the CCCT, coupled with their overwhelming shares of each of the markets in question.³⁸ The Board then held that each had violated the antitrust laws in its individual dealings with municipal and cooperative competitors,³⁹ summarizing those findings in these terms (5 NRC at 223-24, citations omitted):

[E]ach of the member companies [of CAPCO] had participated in actions intended or having the foreseeable effect of reducing the reliability and the economic viability of competing electric generating and distribution entities within their respective service areas. . . . Applicants provided bulk power services to each other even as they avoided competition in the retail and wholesale power transaction market. This avoidance was not passive since several Applicants were parties to affirmative agreements or understandings not to compete with one another. Moreover, each Applicant took actions intended or with the foreseeable effect of eliminating competition with non-Applicants in retail power transactions. These restraints took the form of agreements in restraint of trade with municipal generating and distribution systems including territorial or customer allocations, attempts to fix prices for retail power transactions, and refusals to provide bulk power services where the refusals had the known effect of reducing the reliability and the economic competitive potential of these rival systems. Thus, each Applicant has entered into agreements and understandings the effect of which is to create and maintain a situation inconsistent with the antitrust laws within its own service territories. These actions or policies have continued over a period of years and their cumulative effect has been to reduce the level of competition within the CCCT or to prevent such competition from being as vigorous as it otherwise might have been.

The Board next explored applicants' conduct in relation to CAPCO. It found the power pool to have been established and operated primarily to secure legitimate advantages in operating efficiency and reliability for its members. But the Board also determined that the applicants had a secondary

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at times of peak demand is other times idle. This surplus capacity is available at relatively low cost. It is useful, for example, in emergencies, when other equipment is down for maintenance or to replace temporarily power from less efficient generating facilities. Utilities buy, sell, and wheel surplus power to one another on various terms under such rubrics as "emergency power," "economy power," "scheduled maintenance power," etc. (See, e.g., 5 NRC at 161, fn. 47, 162 fn. 50.) The Board refers to this trade in surplus power as a "factor of production" of firm bulk power and included it with wholesale power transactions in the "bulk power services market."

³⁸ The Board described its findings to this effect as implicit in its initial decision and made them expressly in its decision on the stay request. See 5 NRC at 457 and the references given there.

³⁹ Those charges are discussed in detail at 5 NRC at 165-223, paragraphs 26-182.

purpose in forming the pool that was anticompetitive. In a series of detailed findings, the Board marshalled evidence in the record indicating that CAPCO membership was purposefully limited at the outset to investor-owned utilities in order to deprive competing “public power” systems of the coordination advantages applicants sought for themselves in setting up the pool.⁴⁰ This led the Board to conclude (Paragraph 189, 5 NRC at 227):

that the CAPCO agreement was an agreement in restraint of trade in that it extended services and benefits to parties to agreements not to compete which it denied to their would-be competitors. We hold that these denials were not accidental or unintended but were the result of consideration of the consequences of these actions. Given the stipulated dominance of Applicants’ of generation and transmission within their service areas and their collective dominance within the CCCT, the denial of membership opportunities was an act of monopolization and also constituted a group boycott. Thus, we hold that there were violations of both Section 1 and Section 2 of the Sherman Act resulting from the form of CAPCO agreement which Applicants adopted knowingly.

The Board noted that it was not holding that “the formation of an areawide power pool founded on fair and nondiscriminatory principles either creates or maintains an anticompetitive situation,” and explained that its “concern [was] not that CAPCO was formed, [but] how it was formed and managed that gives rise to antitrust consequences.”⁴¹

The Licensing Board further found that those initial policies continued to influence CAPCO operations. It held that, knowingly and in concert, the applicants rejected competing municipal power systems’ requests to join CAPCO not on their merits but for anticompetitive reasons; unjustifiably excluded participation by public power entities in the proposed nuclear power plants and curtailed or denied their access to bulk power services generally except on anticompetitive terms; and deliberately adopted a method for calculating CAPCO members’ reserve obligations (the “P/N formula”)⁴² which imposed extraordinarily large reserve requirements on the smaller systems, effectively barring them from the organization, although the pool members waived those requirements for one another (Paragraphs 190-214, 5 NRC at 227-37). The Board stressed “that we do not condemn the P/N formula as inherently anticompetitive nor do we hold that the principal purpose of its design was to exclude competitors. . . . What we condemn is Applicants’ deliberate and knowing recognition of the effect the application of this formula would have on generating entities at the time of entrance into the

⁴⁰ 5 NRC at 225-26, Paragraphs 183-88.

⁴¹ 5 NRC at 227 fn. 123.

⁴² The operation of the formula is discussed *infra*, pp. 334 ff.

pool, and their agreement to deviate from the formula for member companies but to impose rigid formula applications on municipalities in the event municipalities cracked the CAPCO entrance barrier.”⁴³

In the Board’s judgment, these actions on the applicants’ part, in light of their monopoly control over key generation and transmission facilities in the relevant markets, amounted to violations of the antitrust laws.

The Licensing Board saw a twofold connection between the activities to be licensed—the nuclear plants—and the situation inconsistent with the antitrust laws it had found extant in the CCCT. The first involved the market structure which the CAPCO companies had created. Given applicants’ one-system planning and coordinated operations, the unconditional addition of five large nuclear power plants advantageous for “baseload” (low operating cost) generation would increase the CAPCO system’s bulk power generating capacity by nearly a third.⁴⁴ This would exacerbate the existing anticompetitive situation, making it even more difficult for the isolated public power systems to continue to compete with the applicants.

Another linking factor was discerned by the Board in those instances where applicants had deigned to make nuclear power available to the municipal and cooperative systems. The Board found that as part of the price for furnishing that power, applicants had insisted on such anticompetitive conditions as agreements not to compete, allocations of service territories and customers and fixing of prices. These factors (among others) satisfied the Licensing Board that there was more than a sufficient “nexus” between the licensed activities and the situation it had found to be inconsistent with the antitrust laws and, therefore, that remedial license conditions were in order (5 NRC at 237-43).

The conditions imposed by the Board were ten in number (5 NRC at 257-59). Briefly summarized, they required the applicants (1) to refrain from demanding anticompetitive agreements as a condition for furnishing electric energy or bulk power services to other utility systems in the CCCT; (2) to interconnect with those systems on request and on reasonable terms that do not jeopardize applicants’ own system; (3) to wheel power to, from and between the other systems in the CCCT, subject to allocations of available transmission capacity in certain circumstances; (4) to open CAPCO membership to the other CCCT utilities with at least a 10 Mw generating capacity individually or in the aggregate and to share reserves with them on an equal percentage basis in lieu of the P/N formula for their initial twelve membership years; (5)-(7) to sell “maintenance,” “emergency,” and “economy” energy to other entities in the CCCT on terms and conditions no less favorable than made available to CAPCO members or to utilities outside

⁴³ 5 NRC at 237, Paragraph 214.

⁴⁴ See pp. 273 and 275, *supra*.

the CCCT; (8) to share reserves on an equal percentage basis or under the CAPCO P/N formula, at the option of another entity in the CCCT, unless some other terms are mutually agreeable; (9) to offer the other CCCT systems an option to acquire up to 10 percent of the capacity of each of the five nuclear power plants in suit on an ownership, unit power, or power repurchase basis and, on similar terms, the option to obtain up to 20 percent of the capacity of applicants' future nuclear plants in the next 25 years; and (10) not deny any of the foregoing opportunities on the basis of prior CAPCO arrangements or commitments.

Finally, the Board specified that the "conditions are to be implemented in a manner consistent with the provisions of the Federal Power Act and all rates, charges or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them" (5 NRC at 259). (In this connection we note that, pursuant to license condition (3), on January 25, 1978 CEI filed a tariff with the Federal Energy Regulatory Commission to provide wheeling services for cooperative and municipal power systems within the CAPCO territories. After a hearing on CEI's proposal, a FERC administrative law judge rejected the tariff as "unjust, unreasonable, and unduly discriminatory." *The Cleveland Electric Illuminating Company*, FERC Docket ER78-194, Initial Decision on Proposed Transmission Service Tariff, April 27, 1979. The matter is now under submission to FERC on CEI's appeal.)

II. ANTITRUST STANDARDS UNDER SECTION 105c

Applicants' central argument for reversal asserts that the Licensing Board's "view of the Commission's antitrust review responsibility [was] fundamentally wrong as a matter of law." Their thesis is that the Commission is not only empowered to but is required to "decide the 'broad policy issue' of what sort of market structure and behavior in the [electric utility industry] best serves the public interest." Applicants therefore contend that the Board below should have first assessed "whether competition . . . in the electric utility industry is, in fact, in the public interest." In applicants' view, this would have revealed such competition as generally undesirable and led to the conclusion that licensing these five nuclear plants would have no anticompetitive consequences of the sort Section 105c was designed to counter.⁴⁵

We discern essentially three themes interwoven in applicants' argument: first, an unarticulated assumption that the electric power industry is impliedly exempted from the full rigors of the antitrust laws; second, the premise that the Commission may temper the force of those laws "in the public interest"; and third, the belief that established antitrust requirements must be "harmonized" with other kinds of federal and state regulation in making determinations under Section 105c. None of these contentions is meritorious.

⁴⁵ *Applicants' Opening Brief* at 29ff.

1. The Atomic Energy Act directive to decide whether licensing a nuclear power plant “would create or maintain a situation inconsistent with the antitrust laws” invokes fundamental national economic policy. Section 105c reflects longstanding congressional insistence that competition is both desirable and essential to the nation’s economic and political health.⁴⁶ We need not rehearse the litany of decisions at the highest judicial level disfavoring exemptions from those laws by implication.⁴⁷ It is a “now settled axiom that after *Otter Tail Power Company v. United States*, 410 U.S. 366, ‘there can be no doubt about the proposition that the federal antitrust laws are applicable to electric utilities.’” *City of Mishawaka v. Indiana and Michigan Electric Company*, 560 F.2d 1314, 1321 (7th Cir. 1977), *certiorari denied*, 436 U.S. 922 (1978), quoting from the Supreme Court’s decision in *Cantor v. Detroit Edison Company*, 428 U.S. 579, 596 n. 35 (1976); *accord, Lafayette v. Louisiana Power and Light Company*, 435 U.S. 389 (1978).

Moreover, Section 105a provides expressly that “nothing contained in this Act shall relieve any person from the operation of the [antitrust laws].” 42 U.S.C. Section 2135(a). Congress’ deliberate retention of this provision in 1970 when amending Atomic Energy Act Section 105c to its present form (see pp. 271-273, *supra*) puts to rest any argument that the Commission possesses some kind of “inherent” authority to exempt conduct from antitrust scrutiny. It also scuttles, in our judgment, the inference that Congress intended Section 105c precicensing reviews to be conducted under standards any less stringent than those of the antitrust laws.⁴⁸

2. Applicants nevertheless contend that the NRC is not to determine whether a situation inconsistent with the antitrust laws exists by applying the standards of the federal courts or the Federal Trade Commission. Rather, relying on decisions involving the Federal Power (now Federal Energy Regulatory) Commission, the Federal Communications Commission, and other federal agencies administering economic regulatory statutes, applicants urge that we must follow the lead of those agencies and decide how much competition is “in the public interest.” As we have previously observed, a “distinction exists between authority on the one hand to regulate an industry for the public convenience and necessity (which may require giving some consideration to antitrust policies) and, on the other, to enforce the antitrust laws directly. The Supreme Court has held that whether an activity ‘would serve the public interest’ does not present the same issue as whether ‘the Sherman Act [has] been violated.’ *United States v. Radio Corporation of America*, 358 U.S. 334, 350-52 (1959).”⁴⁹

⁴⁶ *Lafayette v. Louisiana Power and Light Company*, 435 U.S. 389, 398-400 (1978); *Midland, supra*, ALAB-452, 6 NRC at 896 and authorities there cited in fn. 2.

⁴⁷ They are collected in our *Midland* decision, *supra*, ALAB-452, 6 NRC at 916.

⁴⁸ See *Midland, supra*, ALAB-452, 6 NRC at 916.

⁴⁹ ALAB-385, *supra*, 5 NRC at 633.

The “public interest” standard applied by the FPC and FCC is not appropriate for Section 105c purposes. Among those agencies’ primary roles is economic regulation, either of a line of commerce or of a particular industry. NRC responsibilities are not of that kind. Rather, Section 105c calls upon the Commission to determine only whether the specific and (in the overall context of the electric power industry) relatively limited activities it licenses would cause or continue situations inconsistent with antitrust requirements. The Section nowhere mentions — much less conveys — the right to relax or ignore settled antitrust strictures in favor of some broad conception of the “public interest” or to further another regulatory scheme with a different purpose. Again, we need not belabor the point; the Commission made this plain in its *South Texas* decision.⁵⁰

In that case, arguments strikingly akin to those urged here were pressed upon the Commission in an effort to have the agency construe its antitrust responsibilities in the manner urged upon us here. Not only did the Commission reject that line of reasoning, it stated explicitly that the licensing standard under the Atomic Energy Act “is unlike one which authorizes licensing (or rate setting) under a broad ‘public interest’ standard,” and that “cases decided in the context of broad regulatory statutes” are less than persuasive.⁵¹ The Commission emphasized in *South Texas* that it lacks plenary regulatory authority over electric utilities. It explained that its role under Section 105c is a limited one, to “apply principles developed by the Antitrust Division, the Federal Trade Commission, and the Federal Courts ... to effectuate the special concern of Congress that anticompetitive influences be identified and corrected in their incipiency.”⁵² The Commission has thus manifested that we are not free to depart from antitrust jurisprudence to accommodate the electric utility industry’s conception of what the “public interest” requires in the way of competition. The Licensing Board therefore cannot be held at fault in declining to measure applicants’ conduct by that standard.

3. The final thread woven into applicants’ argument is that the antitrust laws must be “harmonized” with the underlying policies of other statutes which regulate their operations. This is simply an artful variation of the theme we just rejected, the idea that the normal operation of the antitrust laws may be wholly or partially displaced by the presence of generalized regulation to achieve different ends.

We stress again that the point is neither novel nor persuasive. The Supreme Court has reiterated that “even when Congress by subsequent legislation establishes a regulatory regime over an area of commercial activity,

⁵⁰ CLI-77-13, *supra*, 5 NRC 1303 (1977).

⁵¹ *Id.* at 1312 fn. 8 and accompanying text.

⁵² *Id.* at 1316.

the antitrust laws will not be displaced unless it appears that the antitrust and regulatory provisions are plainly repugnant.” *Lafayette v. Louisiana Light and Power Company*, 435 U.S. 389, 399 (1978); *United States v. Philadelphia Nat’l Bank*, 374 U.S. 321, 350-51 (1963) (collecting cases). And decisions by the Court involving both state and federal regulation of electric utilities hold that a utility’s conduct “governed in the first instance by business judgment and not regulatory coercion” remains subject to the antitrust laws. Even acquiescence in or formal approval of such action by regulatory officials affords no defense to antitrust charges. *Otter Tail Power Company v. United States*, *supra*, 410 U.S. at 374 (discussing the Federal Power and Public Utilities Holding Company Acts); *Cantor v. Detroit Edison Company*, *supra*, 428 U.S. at 596-98 (regulation by a State public utility Commission); *Lafayette v. Louisiana Light and Power Company*, *supra*, (involving a municipally-owned utility).⁵³

In the absence of some showing of “regulatory coercion” there is no occasion to “harmonize”—*i.e.*, displace—the ordinary application of the antitrust laws in assessing applicants’ conduct. Thus, in *United States v. American Tel. and Tel. Company*⁵⁴ where regulation by the Federal Communications Commission was raised as a defense to an antitrust action, the court cogently explained that (461 F. Supp. at 1324):

We do not start with a clean slate, neatly balancing whether there should or should not be antitrust jurisdiction. The complaint alleges serious violations of the Sherman Act, and if the government is able to prove these allegations, it follows that a substantial violation of that fundamental charter of American economic life has occurred. The burden is on defendants to demonstrate that they or their practices were intended to be exempt or immune from the broad mandate of the Act. To carry that burden, defendants rely on the Supreme Court decisions discussed above which found certain companies to be immune from the antitrust laws based upon a degree of regulation by government agencies which, as a practical matter, left them no choice but to follow the regulatory schemes and orders. But such regulation is not present in this case.

In short, as we responded to a similar contention advanced in *Midland*, the “argument is an attempt to slip in via the back door a proposition the courts have barred at the front, namely, that regulation for other purposes can

⁵³ *Accord*, *United States v. Radio Corporation of America*, 358 U.S. 334, 350-51 (1959); *Goldfarb v. Virginia State Bar*; 421 U.S. 773, 788-91 (1975); *United States v. Philadelphia National Bank*, *supra*, 374 U.S. at 350-52; *Litton Systems, Inc. v. Southwestern Bell Telephone Co.*, 539 F.2d 418, 422-24 (5th Cir. 1976); *City of Mishawaka v. Indiana and Michigan Electric Company*, *supra*, 560 F.2d at 1321; *Alameda Mall v. Houston Power and Light Company*, Trade Reg. Rep. (CCH) par. 61, 485 (S.D. Tex. 1977).

⁵⁴ 461 F. Supp. 1314 (D.D.C. 1978) (H. Greene, J.).

attenuate the antitrust laws. That argument has been rejected. *Mt. Hood Stages, Inc. v. Greyhound Corp.* 555 F.2d 687, 691-92 (9th Cir. 1977); *International T. & T. Corp. v. General T. & E. Corp.*, 518 F.2d 913, 935-36 (9th Cir. 1975), and cases cited. The best that can be said for it is that 'the impact of regulation must be assessed simply as another fact of market life.' *Id.* at 936."⁵⁵ The Board below appears to have done so. *See, e.g.*, 5 NRC at 244-49⁵⁶

In the final analysis, applicants' principal complaint is the Licensing Board's failure to allow for "regulatory and economic forces in the market place which argue strenuously against the promotion of competition as an end in and of itself."⁵⁷ The Board's answer was that this argument is being advanced in the wrong forum.⁵⁸ That response finds confirmation in Mr. Justice Stevens' 1978 opinion for the Court in *National Soc. of Professional Engineers v. United States* (435 U.S. 679, 689):

The early [antitrust] cases also foreclose the argument that because of the special characteristics of a particular industry, monopolistic arrangements will better promote trade and commerce than competition. That kind of argument is properly addressed to Congress . . . (*Citations omitted.*)

Accordingly, for the reasons stated (as well as those developed by our colleague at pp. 322-323, *infra*), we agree with Justice, Cleveland, and the staff that the Licensing Board employed the correct legal standards in determining whether licensing these plants "would create or maintain a situation inconsistent with the antitrust laws."⁵⁹

⁵⁵ ALAB-452, *supra*, 6 NRC at 1008.

⁵⁶ Applicants also cite paragraph (6) of Section 105c, 42 U.S.C. Section 2135(c) (6), for the need to "harmonize" antitrust and regulatory requirements. That paragraph pertains to the remedies for a situation found inconsistent with the antitrust laws. By its terms, however, paragraph (6) comes into play only *after* the antitrust evaluation has been completed, *viz.*, "In the event the Commission's finding under paragraph [105c] (5) is in the affirmative. . ." *See, The Toledo Edison Company* (Davis-Besse Unit 1), ALAB-323, 3 NRC 331, 346 fn. 41 (1976).

⁵⁷ *Applicants' Opening Brief* at 32.

⁵⁸ "Applicants next complain of the failure of the Licensing Board to make any assessment as to whether competition between electric entities in the electric utility industry is, in fact, in the public interest. We were unaware that we are empowered to decide this broad policy issue which we would think is better addressed to Congress than to the NRC." LBP-77-7, *supra*, 5 NRC at 457.

⁵⁹ Applicants' Opening Brief states at 7 that they were tardily informed of the full nature of the case and "went into the evidentiary hearing ... without notice of, or an opportunity for meaningful discovery on, most of the antitrust charges being made." These allegations are vigorously disputed by Justice (*Opening Brief* at 8-14) and the NRC staff (*Opening Brief* at 30-40).

Applicants make this point only in a "preamble" to their argument; nevertheless, we have considered it. The crux of the claim is that the hearings were started relatively soon after the three

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III. SCOPE OF RELIEF

The remaining issues raised on appeal meriting extended discussion are covered in Mr. Sharfman's comprehensive and copiously annotated opinion (which begins at p. 299, *infra*). As we mentioned earlier, had circumstances not intervened we might have suggested revisions in his treatment of certain of them. Perusal of his opinion persuades us, however, that our former colleague's disposition of most of the issues is sound and little would be gained by adding our separate analyses to his lengthy discourse. We therefore join in his ultimate factual and legal conclusions except those dealing with relief. We disagree with some of these and we turn to them now.

1. The Licensing Board found that the applicants intentionally precluded competition within the CCCT, concluded that their actions amounted to a "situation inconsistent with the antitrust laws" within the meaning of Section 105c, and determined that this anticompetitive situation would be exacerbated by the unfettered licensing of five nuclear power plants. The Board therefore added to the licenses for those plants a series of remedial conditions. These require applicants in dealing with other local electric power systems to refrain from conditioning energy sales on anticompetitive terms; to make reasonable interconnections; to wheel power; to offer CAPCO membership; to sell maintenance, economy and emergency energy; to share reserves; to offer access to the nuclear plants; and not to assert prior CAPCO arrangements to avoid compliance with the remedial conditions (see pp. 277-282, *supra*).

Mr. Sharfman would modify nine of those ten conditions and add an eleventh. Set out in the margin are the Licensing Board's conditions with his proposed deletions bracketed and his substitutions and additions

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cases were consolidated. But applicants' acquiescence in that consolidation was not made contingent upon a hearing delay to allow them further discovery. Tr. 8-11. Indeed, they were themselves anxious to move the case along. Tr. 18. No doubt applicants would have liked more specific charges and additional discovery time; in complex, multiparty litigation few respondents would not. Regulating the course of a hearing, however, requires consideration of fairness to all parties and the avoidance of unnecessary delay. See 10 C.F.R. Section 2.718. The nice judgments required in such matters are ones particularly in the trial board's competence to make. Our reading of the record in this light does not reveal that the Board's scheduling actions were arbitrary or substantially prejudicial to the applicants. See 5 NRC at 139-40. Particularly after examining the comprehensive proposed findings of fact, conclusions of law and supporting brief applicants submitted at the end of the hearings to the Board below (see 5 NRC at 250-52), we are persuaded that they were afforded a reasonable opportunity to know and defend against the case as it unfolded. The test of "due process" in administrative proceedings was therefore satisfied. *Midland, supra*, ALAB-452, 6 NRC at 1020-22 and authorities cited in fn. 482.

underscored.⁶⁰ These modifications fall into four categories. The first essentially conforms terms used in the Boards's conditions to his analysis of the relevant product markets; these effect no substantive changes. In this group are the replacement of the phrase "electric energy or the grant or sale of bulk power services" by "wholesale power or coordination services" in the opening paragraph of condition 1 and similar substitutions in conditions 1(b), 2 and 10 (renumbered 11). Because we agree with our colleague's market analysis, we accept these revisions in terminology to reflect it.

The second proposed revision is to condition 9(b). As Mr. Sharfman's opinion explains (pp. 389-390, *infra*), the rewording is designed to accommodate in part dissatisfactions of both applicants and Cleveland by specifying more precisely when and how a small system may seek access to a future CAPCO nuclear plant. In this change, too, we concur.

⁶⁰ 1. Applicants shall not condition the sale or exchange of [electric energy or the grant or sale of bulk power services] *wholesale power or coordination services to an entity buying wholesale power from them or acquiring nuclear access from them, in a manner described in License Condition 9, upon the condition that any [other] such entity:*

a. enter into any agreement or understanding restricting the use of or alienation of such energy or services to any customer or territories;

b. enter into any agreement or understanding requiring the receiving entity to give up any other [bulk power service options] *power supply alternatives* or to deny itself any market opportunities;

c. withdraw any petition to intervene or forego participation in any proceeding before the Nuclear Regulatory Commission or refrain from instigating or prosecuting any antitrust action in any other forum.

2. Applicants, and each of them, shall offer interconnections upon reasonable terms and conditions at the request of any other electric entity(ies) in the CCCT *which seeks to or is buying wholesale power from them or seeks to or is acquiring nuclear access from them in a manner described in License Condition 9*; such interconnection to be available (with due regard for any necessary and applicable safety procedures) for operation in a closed-switch synchronous operating mode if requested by the interconnecting entity(ies). Ownership of transmission lines and switching stations associated with such interconnection shall remain in the hands of the party funding the interconnection subject, however, to any necessary safety procedures relating to disconnection facilities at the point of power delivery. Such limitations on ownership shall be the least necessary to achieve reasonable safety practices and shall not serve to deprive purchasing entities of a means to effect additional [bulk service] *power supply* options.

3. Applicants shall engage in wheeling for and at the request of [other entities in the CCT] *any entity in the CCCT which is acquiring nuclear access from them, in a manner described in License Condition 9*:

(1) of electric energy from delivery points of Applicants to the entity(ies); and,

(2) of power generated by or available to the other entity, as a result of its ownership or entitlements in generating facilities, to delivery points of applicants designated by the other entity.

Such wheeling services shall be available with respect to any unused capacity on the transmission lines of Applicants, the use of which will not jeopardize Applicants' system. In the event Applicants must reduce wheeling services to other entities due to lack of capacity, such reduction shall not be effected until reductions of at least five percent have been made in transmission capacity allocations to other Applicants in these proceedings and thereafter shall be made in proportion to reductions imposed upon other Applicants to this proceeding.

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Applicants shall make reasonable provisions for disclosed transmission requirements of [other] entities in the CCCT *acquiring nuclear access from them in a manner described in license condition 9*, in planning future transmission either individually or within the CAPCO grouping. By "disclosed" is meant the giving of reasonable advance notification of future requirements by such entities [utilizing wheeling services to be made available by Applicants].

4. (a) Applicants shall make available membership in CAPCO to any entity in the CCCT with a system membership of 10 Mw or greater;

(b) A group of entities with an aggregate system capability of 10 Mw or greater may obtain a single membership in CAPCO on a collective basis.

(c) Entities applying for membership in CAPCO pursuant to License Condition 4 shall become members subject to the terms and conditions of the CAPCO Memorandum of Understanding of September 14, 1967, and its implementing agreements; except that new members may elect to participate on an equal percentage of reserve basis rather than a P/N allocation formula for a period of twelve years from date of entrance. Following the twelfth year of entrance, new members shall be expected to adhere to such allocation methods as are then employed by CAPCO (subject to equal opportunity for waiver or special consideration granted to original CAPCO members which then are in effect).

(d) New members joining CAPCO pursuant to this provision of relief shall not be entitled to exercise voting rights until such time as the system capability of the joining member equals or exceeds the system capability of the smallest member of CAPCO which enjoys voting rights.

5. Applicants shall sell maintenance power to requesting entities in the CCCT *which acquire nuclear access from them in a manner described in License Condition 9*, upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

6. Applicants shall sell emergency power to requesting entities in the CCCT *which acquire nuclear access from them in a manner described in License Condition 9*, upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

7. Applicants shall sell economy energy to requesting entities in the CCCT *which acquire nuclear access from them in a manner described in License Condition 9*, when available, on terms and conditions no less favorable than those available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

8. Applicants shall share reserves with any interconnected generation-entity in the CCCT, *which acquires nuclear access from them in a manner described in License Condition 9*, upon request. The requesting entity shall have the option of sharing reserves on an equal percentage basis or by use of the CAPCO P/N allocation formula or on any other mutually agreeable basis.

9. (a) Applicants shall make available to entities in the CCCT access to the Davis-Besse 1, 2, and 3 and the Perry 1 and 2 nuclear units and any other nuclear units for which Applicants or any of them, shall apply for a construction permit or operating license during the next 25 years. Such access, at the option of the requesting entity, shall be on an ownership share, or unit participation or contractual prepurchase of power basis. Each requesting entity (or collective group of entities) may obtain up to 10 percent of the capacity of the Davis-Besse and Perry Units and 20 percent of future units (subject to the 25-year limitation) except that once any entity or entities have contracted for allocations totaling 10 percent or 20 percent, respectively, no further participation in any given units need be offered.

(b) Commitments for the Davis-Besse and Perry Units must be made by requesting entities within two years after this decision becomes final [and within two years after a license application

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Mr. Sharfman's third modification would add a new condition numbered 10 (old 10 would be renumbered 11) obligating the applicants to sell wholesale power to non-CAPCO systems in the CCCT, as sought in Cleveland's appeal. For the reasons stated in his opinion (see pp. 398-401, *infra*), we accept this change also.

It is Mr. Sharfman's fourth and final group of changes that give us pause. These would cut back on the license conditions requiring applicants to interconnect, to wheel power and to coordinate by limiting their application to utilities that buy a share of a nuclear plant or contract for power from one of them.⁶¹ The modification leaves applicants with the full advantages of baseload nuclear power and the small utilities with a Pyrrhic victory. For the benefits accorded by the Licensing Board would be nullified for many if not most of the competing public power systems.

For example, under our colleague's proposal, Ohio Edison could still put restraints on alienation in its Buckeye wheeling contracts and continue to

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is filed for future units (subject to the 25-year limitation)]. *Commitments for future units must be made within two years after a construction permit application is filed with respect to such a unit (subject to the 25-year limitation) or within two years after the receipt by a requesting entity of detailed written notice of applicants' plans to construct the unit, whichever is earlier; provided, however, that the time for making the commitment shall not expire until at least three months after the filing of the application for a construction permit. Where an applicant seeks to operate a nuclear plant with respect to which it did not have an interest at the time of the filing of the application for the construction permit, the time periods for commitments shall be the same except that reference should be to the operating license, not the construction permit.*

10. *Applicants shall sell wholesale power to any requesting entity in the CCCT, in amounts needed to meet all or part of such entity's requirements. The choice as to whether the agreement should cover all or part of the entity's requirements should be made by the entity, not the applicant or applicants.*

[10] 11. These conditions are intended as minimum conditions and do not preclude Applicants from offering additional [bulk power services] *wholesale power* or coordination [options] *services* to entities within or without the CCCT. However, Applicants shall not deny [bulk power services] *wholesale power or coordination services* required by these conditions to non-Applicant entities in the CCCT based upon prior commitments arrived (at) in the CAPCO Memorandum of Understanding or implementing agreements. [Preemption of options to heretofore deprived entities] *Such denial* shall be regarded as inconsistent with the purpose and intent of these conditions.

The above conditions are to be implemented in a manner consistent with the provisions of the Federal Power Act and all rates, charges, or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them. (Footnotes omitted.)

⁶¹ See modifications to condition 1, 2, 3, 5, 6, 7, and 8 and pp. 405-408 of Mr. Sharfman's opinion.

Additionally, a purchaser of wholesale power from an applicant would also be entitled to an interconnection. See condition 2 as modified, *supra*, p. 288. This dovetails with the requirement that applicant sell wholesale power to entities in the CCCT requesting it and is appropriate if not indeed necessary to carry out that condition.

refuse to wheel power for Orrville; Duquesne could still deny coordination services to Pitcairn should its small competitor try to generate partial requirements power; CEI need not coordinate on reasonable terms with Painesville; and Toledo Edison could insert 90-day disconnect provisions in its Buckeye wheeling contracts. Yet all of those acts were correctly condemned by the Licensing Board as antitrust violations, according to Mr. Sharfman's own opinion.⁶²

This singular result flows from the theory advanced by the applicants and accepted by Mr. Sharfman: the belief that "the Commission may only grant relief that would govern 'activities under the [nuclear] license.'" ⁶³ With due deference, we believe that they misconstrue the statute.

To begin with, the limiting phrase "activities under the license" is not in Section 105c(6) which governs the scope of relief. To the contrary, paragraph (6) is cast in the broadest terms. In pertinent part it provides where the Commission finds a situation inconsistent with the antitrust laws that it "shall have the authority to issue or continue a license as applied for, to refuse to issue a license, to rescind a license or amend it, and to issue a license with such conditions as it deems appropriate."⁶⁴ The provision conveys the message that Congress did not want nuclear plants authorized in circumstances that would create or maintain anticompetitive situations without license conditions designed to redress them. This construction is fully warranted on the face of paragraph (6). This is also the meaning specifically ascribed to it by its congressional authors, the Joint Committee on Atomic Energy:

The Committee believes that, except in an extraordinary situation, Commission-imposed conditions should be able to eliminate the concerns entailed in any affirmative finding under paragraph (5) [of section 105c]

. . . ⁶⁵

⁶² Compare 5 NRC at pp. 200-01, para. 132; p. 197, para. 122-23; p. 182, para. 85; pp. 177-78, para. 70-73; and p. 219, para. 173; with pp. 305-306, 313, 322, 333, and 346 *infra*.

⁶³ See *Applicants' Opening Brief* at 294-97 and opinion of Mr. Sharfman at 395, *infra*.

⁶⁴ Paragraph (6) provides in full: "In the event the Commission's finding under paragraph (5) is in the affirmative, the Commission shall also consider, in determining whether the license should be issued or continued, such other factors, including the need for power in the affected area, as the Commission in its judgment deems necessary to protect the public interest. On the basis of its findings, the Commission shall have the authority to issue or continue a license as applied for, to refuse to issue a license, to rescind a license or amend it, and to issue a license with such conditions as it deems appropriate." 42 U.S.C. Section 2135(c) (6).

⁶⁵ Joint Committee on Atomic Energy, *Amending the Atomic Energy Act of 1954, as amended, to Eliminate the Requirement for a Finding of Practical Value, to Provide for Prelicensing Antitrust Review, etc.*, H. R. Rep. No. 91-1470 and S. Rep. No. 91-1247, 91st Cong., 2nd Sess. (1970) at 31 (hereinafter cited as "*Joint Committee Report*").

When construing this provision in *Midland*, we stressed that “no type of license condition—be it a requirement for wheeling, coordination, unit power access, or sale of an interest in the plant itself—is necessarily foreclosed as a possible form of relief. Section 105c imposes no limits in this respect; it gives the Commission ‘authority ... to issue a license with such conditions as it deems appropriate.’ ”⁶⁶ In other words, as we explained when faced with similar arguments in *Wolf Creek*, “[S]ection 105c(6) simply directs the Commission to place ‘appropriate’ conditions on licenses where necessary to rectify anticompetitive situations. This is an invocation of the Commission’s discretion, not a limitation on its powers. Had Congress wished to do the latter, it would have said so in unmistakable terms.”⁶⁷

The idea that the remedies in the antitrust arsenal are sufficient to overcome the violations is neither original nor recent.⁶⁸ Rather, this settled tenet is one of the “principles developed by the Antitrust Division, the Federal Trade Commission, and the Federal Courts” which we apply in proceedings under section 105c. (See p. 272, *supra*.) The Supreme Court has reiterated that “relief in an antitrust case must be ‘effective to redress violations’ and ‘to restore competition.’ ”⁶⁹ And “adequate relief in a monopolization case should . . . render impotent the monopoly power found to be in violation of the [Sherman] Act. ”⁷⁰ The crabbed reading our former colleague gives section 105c(6), however, leaves the monopolists powerful and the Commission impotent. It is not sound statutory construction to interpret a law in a manner that renders it ineffective.⁷¹

⁶⁶ ALAB-452, *supra*, 6 NRC at 1099.

⁶⁷ *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit 1), ALAB-279, 1 NRC 559, 571 (1975). We also observed that Congress is quite able to enact legislation circumscribing agency discretion when it chooses to do so. Thus, “where the legislature desired to limit the Secretary of Agriculture’s right to condition orders promulgated by him to regulate the marketing of farm produce, Congress specified that ‘... orders issued pursuant to this section [of the Agricultural Marketing Agreement Act] shall contain one or more of the following terms and conditions, and ... no other.’ ” 7 U.S.C. Section 698c(5). See *Zuber v. Allen*, 396 U.S. 168, 183-84 (1969). *Id.* at 571-72.

⁶⁸ At the beginning of this century, the first Mr. Justice Harlan reiterated that “it would be a novel, not to say absurd, interpretation of the anti-trust act to hold that after an unlawful combination is formed and has acquired the power which it has no right to acquire,—namely, to restrain commerce by suppressing competition,—and is proceeding to use it and execute the purpose for which the combination was formed, it must be left in possession of the power that it has acquired, with full freedom to exercise it.” *Northern Securities Co. v. United States*, 193 U.S. 197, 357 (1904).

⁶⁹ *Ford Motor Co. v. United States*, 405 U.S. 562, 573 (1972) (citations and footnotes omitted). *Accord*, *United States v. E. I. DuPont de Nemours & Co.*, 353 U.S. 586, 607-08 (1957); *United States v. United States Gypsum Co.*, 340 U.S. 76, 88-9 (1950); *International Salt Co. v. United States*, 332 U.S. 392, 401 (1947); *FTC v. National Lead Co.*, 352 U.S. 419, 430 (1957).

⁷⁰ *United States v. Grinnell Corp.*, 384 U.S. 563, 577 (1966).

⁷¹ *United States v. Braverman*, 373 U.S. 405, 408 (1963); *Bird v. United States*, 187 U.S. 118, 124 (1902); *Wilderness Society v. Morton*, 479 F.2d 842, 855-56 (D.C. Cir. *in banc*), *certiorari denied*, 411 U.S. 917 (1973).

Rejecting Mr. Sharfman's position by no means reads "activities under the license" out of Section 105c. We simply leave that phrase where Congress put it, in paragraph (5). That paragraph focuses the Commission's antitrust scrutiny on license applicants and those acting in concert with them.⁷² Here again the *Joint Committee Report* on the 1970 amendments to Section 105c is persuasive. After commenting that the standard for judging the existence of the "situation inconsistent with the antitrust laws" mentioned in paragraph (5) was to be that of "reasonable probability—not certainty or possibility," the Joint Committee went on to explain that

The standard pertains to the activities of the license applicant. The activities of others, such as designers, fabricators, manufacturers, or suppliers of materials or services, who, under some kind of direct or indirect contractual relationship may be furnishing equipment, materials or services for the licensed facility would not constitute "activities under the license" unless the license applicant is culpably involved in activities of others that fall within the ambit of the standard.⁷³

Put another way, Section 105c(5) designates *who* is to be subject to Commission antitrust scrutiny, not *how* to prevent nuclear power from enhancing anticompetitive conduct.

In the context of this case, it has been determined that the "activities under the license"—the operation of five immense nuclear plants on applicants' systems—will "create or maintain a situation inconsistent with the antitrust laws." Congress did not want this to happen; it expected the Commission to protect adversely affected competitors by conditioning the nuclear licenses to overcome or ameliorate those antitrust consequences. (See pp. 291-292 *supra*.) The mechanical rule our colleague would apply, however, would restrict relief to those among the small utilities fortuitously able to use the nuclear plants directly. We perceive no reason why Congress would wish us to leave the others, the most vulnerable, beyond the pale of Commission protection—and our colleague suggests none.⁷⁴

⁷² Section 105c(5) provides: "Promptly upon receipt of the Attorney General's advice, the Commission shall publish the advice in the Federal Register. Where the Attorney General advises that there may be adverse antitrust aspects and recommends that there be a hearing, the Attorney General or his designee may participate as a party in the proceedings thereafter held by the Commission on such licensing matter in connection with the subject matter of his advice. The Commission shall give due consideration to the advice received from the Attorney General and to such evidence as may be provided during the proceedings in connection with such subject matter, and shall make a finding as to whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws as specified in subsection 105a." 42 U.S.C. Section 2135(c) (5).

⁷³ *Joint Committee Report* at 31 (see fn. 65, *supra*).

⁷⁴ We note that, in granting Cleveland's appeal Mr. Sharfman would require applicants to sell wholesale power to all CCCT utilities, not just those buying nuclear power. See pp. 398-401 *infra*. This seems inconsistent to us with the rule he would apply here.

We find no warrant to Mr. Sharfman's construction of Section 105c on the provision's face, in its legislative history or in Commission precedent. To be sure, as he says, we cautioned in *Midland* that the power to condition licenses is not the power "to restructure the electric utility industry." 6 NRC at 1100. But the conditions our colleague would eliminate are hardly of that stripe. They do no more than require applicants to refrain from taking unfair advantage of smaller competitors.⁷⁵ See pp. 290-291, *supra*. Even more so than the applicant in *Midland*, the CAPCO companies dominate generation and control transmission in the relevant electric power markets. In that case, as in this one, nuclear facilities will enhance substantially applicants' monopolistic position. There, as here, it was "appropriate" to condition applicants' rights to such facilities on their dealing fairly with "landlocked" competitors.⁷⁶ Accordingly, we do not accede to Mr. Sharfman's fourth set of proposed changes in the Licensing Board's conditions because this would deprive certain of those competitors of that protection.

2. In a number of instances Mr. Sharfman would, for an indefinite period, "vest the Licensing Board with continuing jurisdiction" to relieve the applicants from conditions that might prove an extreme hardship or impossible of compliance. See, *e.g.*, pp. 392 and 398, *infra*. We agree that license conditions seemingly fair today may prove inequitable tomorrow. It is not necessary, however, to extend the Licensing Board's jurisdiction to provide for the possibility of such modifications. Commission regulations give the Director of Nuclear Reactor Regulation—who is assisted by an able antitrust staff—authority to modify license conditions where necessary and provide as well as means for review of his determinations. 10 CFR Sections 2.200-2.204 and Section 2.206. Indeed, the Director has already acted to modify one of the license conditions imposed in this case (albeit not at the applicants' request).⁷⁷ We therefore see no occasion to continue the Licensing

⁷⁵ As the staff congenitly observes, the license conditions here "essentially do no more than oblige Applicants to offer similar bulk power supply options and access to nuclear units to other electric utilities as they make available, by action or agreement, to each other." *Staff Opening Brief* at 200, fn. 181.

⁷⁶ The Licensing Board's conditions essentially parallel those approved by the Supreme Court in *Otter Tail Power Co. v. United States*, *supra*, 410 U.S. at 368-69. In that leading case, the Court affirmed a decree enjoining the power company "from refusing to sell electric power at wholesale to existing or proposed municipal electric power systems in the areas serviced by Otter Tail, from refusing to wheel electric power over the lines from the electric power suppliers to existing or proposed municipal systems in the area, from entering into or enforcing any contract which prohibits use of Otter Tails's lines to wheel electric power to municipal electric power systems, or from entering into or enforcing any contract which limits the customers to whom and areas in which Otter Tail or any other electric power company may sell electric power."

⁷⁷ See *The Toledo Edison Company et al* (Davis-Besse Unit 1 and Perry Units 1 and 2), Docket Nos. 50-346A, 50-440A and 50-441A, "order Modifying Antitrust License Condition No. 3" of the Director of Nuclear Reactor Regulation (June 25, 1979).

Board's jurisdiction over aspects of the case.⁷⁸ Accordingly, we do not join in the portions of Mr. Shafman's opinion that would do so.⁷⁹

The decision of the Licensing Board is *affirmed as modified*⁸⁰ in the foregoing opinion.

It is so ORDERED.

FOR THE APPEAL BOARD
C. Jean Bishop
Secretary to the Appeal Board

⁷⁸ The idea of using the same Board, because of its members' familiarity with the case, has advantages. But those members may not be available or be otherwise engaged. Indeed, one member of the Board below has resigned from the Licensing Board Panel. In any event, the Panel Chairman may take these factors into consideration in assigning a new board should the need to do so arise.

⁷⁹ For reasons noted earlier, we have not revised our former colleague's opinion. We do believe, however, that the last full sentence on page 392 would be more accurate if it read: "The reduction will usually have to be made only on the portion of the transmission system carrying the wheeled power for the requesting entity, not on the entire system."

We are also less certain than our former colleague that the applicants' *true* interests are antithetical to the municipalities'. See p. 402 *infra*. In by far the large number of cases, the public and private power systems have been able to work out their differences without a resort to litigation. On the record here, however, we cannot gainsay the judgment that it would be unwise to give the public power entities a veto power over CAPCO decisions.

⁸⁰ The license conditions approved by this Board are appended immediately following this opinion.

APPENDIX

License Conditions Approved by the Appeal Board.

1. Applicants shall not condition the sale or exchange of wholesale power or coordination services upon the condition that any other entity:

- a. enter into any agreement or understanding restricting the use of or alienation of such energy or services to any customers or territories;
- b. enter into any agreement or understanding requiring the receiving entity to give up any other power supply alternatives or to deny itself any market opportunities;
- c. withdraw any petition to intervene or forego participation in any proceeding before the Nuclear Regulatory Commission or refrain from instigating or prosecuting any antitrust action in any other forum.

2. Applicants, and each of them, shall offer interconnections upon reasonable terms and conditions at the request of any other electric entity(ies) in the CCCT, such interconnection to be available (with due regard for any necessary and applicable safety procedures) for operation in a closed-switch synchronous operating mode if requested by the interconnecting entity(ies). Ownership of transmission lines and switching stations associated with such interconnection shall remain in the hands of the party funding the interconnection subject, however, to any necessary safety procedures relating to disconnection facilities at the point of power delivery. Such limitations on ownership shall be the least necessary to achieve reasonable safety practices and shall not serve to deprive purchasing entities of a means to effect additional power supply options.

3. Applicants shall engage in wheeling for and at the request of other entities in the CCCT:

- (1) of electric energy from delivery points of Applicants to the entity(ies); and,
- (2) of power generated by or available to the other entity, as a result of its ownership or entitlements⁸¹ in generating facilities, to delivery points of applicants designated by the other entity.

Such wheeling services shall be available with respect to any unused capacity on the transmission lines of Applicants, the use of which will not jeopardize Applicants' system. In the event Applicants must reduce wheeling services to other entities due to lack of capacity, such reduction shall not be effected until reductions of at least 5 percent have been made in transmission capacity allocations to other Applicants in these proceedings and thereafter shall be made in proportion to

⁸¹ "Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

reductions⁸² imposed upon other Applicants to this proceeding.

Applicants shall make reasonable provisions for disclosed transmission requirements of other entities in the CCCT in planning future transmission either individually or within the CAPCO grouping. By "disclosed" is meant the giving of reasonable advance notification of future requirements by entities utilizing wheeling services to be made available by Applicants.

4. (a) Applicants shall make available membership in CAPCO to any entity in the CCCT with a system capability of 10 Mw or greater;
- (b) A group of entities with an aggregate system capability of 10 Mw or greater may obtain a single membership in CAPCO on a collective basis.⁸³
- (c) Entities applying for membership in CAPCO pursuant to License Condition 4 shall become members subject to the terms and conditions of the CAPCO Memorandum of Understanding of September 14, 1967, and its implementing agreements; except that new members may elect to participate on an equal percentage of reserve basis rather than a P/N allocation formula for a period of twelve years from date of entrance.⁸⁴ Following the twelfth year of entrance, new members shall be expected to adhere to such allocation methods as are then employed by CAPCO (subject to equal opportunity for waiver or special consideration granted to original CAPCO members which then are in effect).
- (d) New members joining CAPCO pursuant to this provision of relief shall not be entitled to exercise voting rights until such time as the system capability of the joining member equals or exceeds the system

⁸² The objective of this requirement is to prevent the preemption of unused capacity on the lines of one Applicant by other Applicants or by entities the transmitting Applicant deems noncompetitive. Competitive entities are to be allowed opportunity to develop bulk power services options even if this results in reallocation of CAPCO transmission channels. This relief is required in order to avoid prolongation of the effects of Applicants' illegally sustained dominance.

⁸³ *E.g.*, Wholesale Customer of Ohio Edison (WCOE).

⁸⁴ The selection of the 12-year period reflects our determination that an adjustment period is necessary since the P/N formula has a recognized effect of discriminating against small systems and forcing them to forego economies of scale in generation in order to avoid carrying excessive levels of reserves. We also found that P/N is not entirely irrational as a method of reserve allocation. We have observed that Applicants themselves provided adjustment periods and waivers to integrate certain Applicants into the CAPCO reserve requirement program. The 12-year period should permit new entrants to avoid initial discrimination but to accommodate and adjust to the CAPCO system over some reasonable period of time. Presumably new entrants will be acquiring ownership shares and entitlements during the 12-year period so that adverse consequences of applying the P/N formula will be mitigated.

capability of the smallest member of CAPCO which enjoys voting rights.⁸⁵

5. Applicants shall sell maintenance power to requesting entities in the CCCT upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

6. Applicants shall sell emergency power to requesting entities in the CCCT upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

7. Applicants shall sell economy energy to requesting entities in the CCCT, when available, on terms and conditions no less favorable than those available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

8. Applicants shall share reserves with any interconnected generation entity in the CCCT upon request. The requesting entity shall have the option of sharing reserves on an equal percentage basis or by use of the CAPCO P/N allocation formula or on any other mutually agreeable basis.

9. (a) Applicants shall make available to entities in the CCCT access to the Davis-Besse 1, 2, and 3 and the Perry 1 and 2 nuclear units and any other nuclear units for which Applicants or any of them, shall apply for a construction permit or operating license during the next 25 years. Such access, at the option of the requesting entity, shall be on an ownership share, or unit participation or contractual repurchase of power basis.⁸⁶ *Each requesting entity (or collective group of entities) may obtain up to 10 percent of the capacity of the Davis-Besse and Perry Units and 20 percent of future units (subject to the 25-year limitation) except that once any entity or entities have contracted for allocations totaling 10 percent or 20 percent, respectively, no*

⁸⁵ Our objective is to prevent impediments to the operation and development of an areawide power pool through the inability of lesser entities to respond timely or to make necessary planning commitments. While we grant new member entities the opportunity to participate in CAPCO it is not our intent to relieve joining entities of responsibilities and obligations necessary to the successful operation of the pool. For those smaller entities which do not wish to assume the broad range of obligations associated with CAPCO membership we have provided for access to bulk power service options which will further their ability to survive and offer competition in the CCCT.

⁸⁶ Requesting entities' election as to the type of access may be affected by provisions of state law relating to dual ownership of generation facilities by municipalities and investor-owned utilities. Such laws may change during the period of applicability of these conditions. Accordingly, we allow requesting entities to be guided by relevant legal and financial considerations (including Commission regulations on nuclear power plant ownership) in fashioning their requests.

further participation in any given units need be offered.

(b) Commitments for the Davis-Besse and Perry Units must be made by requesting entities within two years after this decision becomes final. Commitments for future units must be made within two years after a construction permit application is filed with respect to such a unit (subject to the 25-year limitation) or within two years after the receipt by a requesting entity of detailed written notice of Applicants' plans to construct the unit, whichever is earlier; provided, however, that the time for making the commitment shall not expire until at least three months after the filing of the application for a construction permit. Where an Applicant seeks to operate a nuclear plant with respect to which it did not have an interest at the time of the filing of the application for the construction permit, the time periods for commitments shall be the same except that reference should be to the operating license, not the construction permit.

10. Applicants shall sell wholesale power to any requesting entity in the CCCT, in amounts needed to meet all or part of such entity's requirements. The choice as to whether the agreement should cover all or part of the entity's requirements should be made by the entity, not the Applicant or Applicants.

11. These conditions are intended as minimum conditions and do not preclude Applicants from offering additional wholesale power or coordination services to entities within or without the CCCT. However, Applicants shall not deny wholesale power or coordination services required by these conditions to non-Applicant entities in the CCCT based upon prior commitments arrived at in the CAPCO Memorandum of Understanding or implementing agreements. Such denial shall be regarded as inconsistent with the purpose and intent of these conditions.

The above conditions are to be implemented in a manner consistent with the provisions of the Federal Power Act and all rates, charges or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them.

Opinion of Mr. Sharfman:

INTRODUCTION

Cleveland Electric Illuminating Company ("CEI"), Toledo Edison Company, Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company are five large investor-owned utilities selling electric power in Ohio and western Pennsylvania.¹ "The five Applicants are the sole parties to a comprehensive power pooling arrangement, the CAPCO agreement,

¹ The area which they serve is referred to below and in this opinion as the Combined CAPCO Company Territories ("CCCT"). The Licensing Board held that it constituted the relevant geographic market for antitrust analysis in this case. Decision below, LBP-77-1, 5 NRC 133, 147 (1977).

which provides that operation and development of their systems be conducted to the maximum extent possible as a unified system. CAPCO companies are signatories to a broad Memorandum of Understanding which has been supplemented by a series of individual agreements relating to transmission and operation of the respective systems of individual Applicants.”²

Applicants applied for construction permits for five new nuclear power plants which would add 4,500 MW to their already existing 13,000 megawatts of generating capacity. The Attorney General is required by Section 105c(1) of the Atomic Energy Act, 42 U.S.C. Section 2135(c) (1), to advise the Commission concerning its antitrust review of a commercial reactor license application. In this case, he told the Commission that no antitrust hearing would be required for Davis-Besse 1 if settlement were reached on controversies between CEI and Cleveland.³ No such settlement was reached. The Attorney General did request an antitrust hearing with respect to the other four reactors. The City of Cleveland has its own Municipal Electric Light Plant (“MELP”), an electric system in direct retail competition with CEI. It petitioned to intervene in these proceedings and was permitted to do so. The other party to the proceedings is the Commission staff. The cases were consolidated after the initial prehearing conference.

The Licensing Board, after extensive hearings, found that applicants possessed deliberately acquired monopoly power in the relevant markets and used that power to force municipal electric systems to abandon independent generation of electric power and either go out of business entirely or become totally dependent wholesale customers of applicants. It found them guilty of a whole host of antitrust violations, such as putting restrictions on the resale of electricity, group boycotts, attempts to fix prices and unilateral refusals to deal. It found that the issuance of licenses without antitrust conditions for the Davis-Besse and Perry plants would create and maintain a situation inconsistent with the antitrust laws and therefore attached conditions to the licenses which offer wide-ranging relief to the municipal and cooperative electric systems in the CCCT.

The applicants and the City of Cleveland have filed cross-appeals from the Licensing Board’s decision. Except insofar as they are inconsistent with anything in this opinion, we agree with the findings of fact and conclusions of law set forth in the decision below.⁴ For the reasons stated therein and in the Licensing Board’s opinion denying a stay pending appeal⁵ (except where we

² *Id.* at 143.

³ *Id.*, p. 138.

⁴ Certain parts of the opinion below are not discussed in this opinion at all. That is not an oversight; it simply means that we see no need to supplement or comment upon what the Licensing Board has said on the subject.

⁵ LBP-77-7, 5 NRC 452, at 455-61 (1977).

expressly disagree with them), in our own opinion denying a stay pending appeal,⁶ in *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-452, 6 NRC 892 (1977) ("*Midland*"), and in this opinion, we *affirm* the decision below except insofar as it is modified herein.

I. THE PRODUCT MARKETS

Alleged antitrust violations must be analyzed in the context of geographic and product markets. As previously noted,⁷ the Licensing Board held that the CCCT is the relevant geographic market for purposes of this case. We agree because of the manner in which the applicants dominate this area and coordinate both their operations and their planning and construction programs within the framework of the CAPCO pool. What remains to be determined is the product market.

In *Midland*, we held that there were, at least for purposes of that case, three relevant product markets in electricity: the retail market,⁸ the wholesale power market (which "includes all firm bulk power production, whether retained for 'in-house' retail purposes or wholesaled 'outside' for independent retail distribution")⁹ and the coordination services market.¹⁰ The latter market and the nature of its difference from the wholesale market are explained at length in *Midland*.¹¹ We will not repeat that explanation here. It will suffice for us to say that, in essence, the coordination services market is a market for the exchange of surplus electric power between utilities on a non-firm basis and the joint and coordinated operation by utilities of their systems of generation and distribution, all with the purpose of achieving maximum efficiency and economies in their overall power supply operations.

In the case at bar, the Licensing Board held that the relevant product markets are bulk power services, regional power exchange transactions and retail power transactions.¹² The retail market is essentially the same as that found in *Midland*. It is the other two which need some explaining. The Justice Department and the staff took the same positions on product market here as they did in *Midland*. Justice asserted that the relevant markets are the wholesale market and the regional power exchange market, which is the same as what we called in *Midland* the coordination services market, which it called the bulk power services market. The Licensing Board accepted the bulk power services market advocated by the staff but also accepted the regional power exchange (*i.e.*, coordination services) market advocated by Justice. These are overlapping markets; the latter is included in the former.

⁶ ALAB-385, 5 NRC 621, at 631-34 (1977).

⁷ N. 1, *supra*.

⁸ 6 NRC 892, at 977-90.

⁹ *Id.* at 990-97 (quotation at 991).

¹⁰ *Id.* at 949-76.

¹¹ *Id.* at 990-97.

¹² 5 NRC at 160.

In *Midland*,¹³ we stated that “delineation of a relevant market is essentially a question of fact” and that, therefore, the product markets need not necessarily be the same in other cases. However, no facts were adduced in this case which would warrant a different result. The product market testimony was theoretical economic analysis, applicable to the industry generally.¹⁴ We therefore find that the relevant product markets are the same as those found relevant by us in *Midland*. Thus, the Licensing Board erred insofar as it found the bulk power services market relevant and failed to find the wholesale market relevant. However, this error was not prejudicial. The Licensing Board stated:

The Board considers Dr. Wein’s [i.e., the Justice Department’s] proposed market definitions to have been enumerated rationally in accordance with applicable legal guidelines. Our analysis of the situation inconsistent and our findings would not be different had we adopted without change the definitions suggested by Justice.

Our own analysis of the opinion below and the record satisfies us that the last statement is correct.

II. STATE LAWS

A. Generally

Applicants argue that their conduct is insulated from the antitrust laws by virtue of an Ohio constitutional provision and certain Ohio and Pennsylvania statutes,¹⁶ some of which merely regulate utilities and some of which impose some restrictions on competition. To the extent that these state laws are merely regulatory, it is clear that they afford no antitrust immunity to corporations regulated by them. *Cantor v. Detroit Edison Company*, 428 U.S. 579, 595-96 (1976).¹⁷ To the extent that they restrict competition to some degree, we would not be able to imply an antitrust exemption unless it “was necessary in order to make the regulatory Act work, and even then only to the

¹³ 6 NRC 892, 997, n. 407.

¹⁴ See Exh. DJ-587, pp. 97-101; Staff Exh. 207, pp. 17-20; Appl. Exh. 190, pp. 26-35.

¹⁵ 5 NRC at 161 n. 44.

¹⁶ Brief, pp. 51-53.

¹⁷ The Pennsylvania statutes relied on by applicants (Brief pp. 52-53) are clearly of the regulatory variety. One of the Ohio statutes (Chapter 4933 of the Ohio Revised Code) deals with the power of municipalities to prevent retail competition within their own corporate limits. It is obviously irrelevant to the conduct of the investor-owned utilities at issue in this case.

minimum extent necessary.’ ” *Id.* at 597.¹⁸ But it is not necessary for us to inquire whether and to what extent this test is met by any of the state laws relied on here because it is manifest from the opinions below and the evidence of record that none of applicants’ conduct found inconsistent with the antitrust laws was merely obedience to a state command. It was volitional conduct going beyond the requirements of state law and hence subject to the antitrust laws. See *Cantor, supra* at 592-93.¹⁹ Thus, for example, while Ohio may impose some restrictions on the sale of electricity by municipal utilities, it did not require Ohio Edison to restrict the municipalities to which it sold at wholesale from reselling power to industrial customers²⁰ or from selling excess power from their own units.²¹ Neither did the state command CEI not to interconnect with Painesville unless Painesville would equalize its rates with CEI, let CEI take over its greatest load growth area and agree not to serve that area in the future.²² These are only examples; the opinions below contain many others of the same ilk.

B. The Ohio Anti-Pirating Law

One of the instances in which an applicant strenuously urges a state statute defense is in connection with the Licensing Board’s findings that Toledo Edison unlawfully refused to wheel power for the City of Napoleon or to permit TriCounty Cooperatives to deliver Buckeye power to Napoleon over a new 10-mile transmission line to be built by Napoleon unless the City would disconnect from Toledo Edison and operate as an isolated power system for 90 days.²³ Toledo Edison based its refusal on a provision in its contract with Buckeye Power (of which TriCounty was a member) which provided that Toledo Edison was not obligated to transmit Buckeye power to a consumer when the furnishing of such power “is proscribed by the law of the State of Ohio reflected in Section 4905.26.1 Revised Code of Ohio”²⁴ The Licensing Board found that Toledo Edison denied Napoleon’s requests for waiver of this provision²⁵ and Toledo Edison does not dispute this.²⁶ Instead,

¹⁸ This is the same rule which governs the implication of antitrust exemptions from federal regulatory statutes. *Id.* at 596 n. 36; *Silver v. New York Stock Exchange*, 373 U.S. 341, 357 (1963).

¹⁹ Although we rely on the plurality opinion in *Cantor*, the section of it upon which we rely was concurred in by Chief Justice Burger, thus making it the opinion of five justices. *Id.* at 603. See also *Goldfarb v. Virginia State Bar*, 421 U.S. 773, 791 (1975), where the Court stated: “It is not enough that . . . anticompetitive conduct is ‘prompted’ by state action; rather, anticompetitive activities must be compelled by direction of the State acting as a sovereign.”

²⁰ 5 NRC 133, at 201.

²¹ *Id.* at 199.

²² *Id.* at 177-78.

²³ See findings 172-78, 5 NRC at 218-21.

²⁴ Staff Exh. 188, p. 3.

²⁵ Finding 173, 5 NRC at 219.

²⁶ Brief, p. 207-08.

it argues that its conduct was immune from the antitrust laws because it was merely enforcing what had already been prohibited by a state statute.²⁷

Section 4905.26.1, which applicants refer to as the Ohio anti-pirating law, provided:²⁸

Whenever a public utility proposes to furnish or furnishes electric energy to a consumer and which consumer is being furnished or was being furnished electric energy by another public utility, the latter public utility may file a complaint with the public utilities commission protesting the furnishing of service by the other public utility. Such complaint shall be filed within 90 days from the date the public utility which is furnishing electric energy discovers that another utility proposes to furnish the consumer with electric energy. In the event a consumer has been disconnected from the lines of a public utility, and electric energy has not been furnished said consumer for a period of more than 90 days, no right to file a complaint shall accrue under this section. The commission upon finding that the complaining public utility has been furnishing or will furnish an adequate service to such consumer and that the public utility complained against will duplicate facilities of the complainant, shall order the public utility complained against not to furnish electric energy to such consumer.

The provisions of Section 4905.26 of the Revised Code with respect to notice, procedure, and hearing govern complaints authorized by this section.

Public utility as used in this section includes utilities which operate their property not for profit as well as utilities which operate their property for profit.

The most important thing that must be said about this statute is that it does not prohibit a consumer from changing its supplier without disconnecting for 90 days. It merely gives the utility losing the customer the right to complain to the commission if such a change is made or proposed to be made. If the commission, after a hearing, makes the statutory findings, it may order the utility complained against not to furnish the power. But the statute does not require or even authorize or encourage the utility losing the business to impose by contract with another supplier a prior restraint on the changing of a source of supply whenever that utility concludes, in its sole judgement, that the

²⁷ Ohio Edison Company and Pennsylvania Power Company also invoke Chapter 4905.26.1 of the Revised Code of Ohio as justification for their territorial agreements with other utilities. Brief, p. 236. Much of what we say about the statute here applies equally to its use in defense of those agreements.

²⁸ This statute was repealed by Amended House Bill No. 577, effective July 12, 1978. A copy of the latter was sent to us by counsel for the applicants by letter dated October 13, 1978.

statute's substantive requirements for relief are met.²⁹ The enforcement of such a contract provision is a far greater deterrent to competition than the statute. It deprives the consumer of the right to have the statutory findings made by an impartial government agency, on the basis of evidence adduced at a hearing, rather than by a private party with an interest directly adverse to his. Indeed, the evidence suggests that Toledo Edison did not even purport to evaluate the situation to see if the statutory findings could be made. Instead, it acted as if it had an absolute right to bar competition from Buckeye, so long as there was no 90-day disconnection by Napoleon.³⁰

Secondly, it is not clear that the term "consumer" in this statute applies to a municipality purchasing power at wholesale for purposes of resale or that the Public Utilities Commission or the Ohio courts would have found that a complaining utility's refusal to wheel cheaper power than it could itself provide to a municipality for resale constituted "adequate service" within the meaning of the statute.³¹ Be that as it may, however, one thing is clear. By acting through the leverage of its Buckeye contract, rather than following the procedure prescribed by the statute, Toledo Edison was able to prevent municipalities from getting cheaper power from other suppliers without running the risk that either the Public Utilities Commission or the Ohio courts would rule against it on these questions of law.

Thirdly, where nothing more than wheeling was requested (and that was one of the alternative ways that Napoleon originally proposed to get power from Tri-Country), the Public Utilities Commission would certainly not have been able to make the finding "that the public utility complained against will duplicate facilities of the complainant." Thus, as to the refusal to wheel, Toledo Edison is not in a position to make even a colorable claim of antitrust immunity based on the antipirating law.

Fourthly, as stated above,³² it is not disputed that Toledo Edison could have waived its insistence that the contract provision be complied with but refused to do so.

²⁹ Even if the statute had authorized or encouraged the prior restraint by contract, it is clear that that would confer no antitrust immunity. *Cantor v. Detroit Edison Company*, *supra*, at 592-93.

³⁰ See findings 172 and 173 of the Licensing Board (5 NRC at 218-19) and the evidence cited therein.

³¹ These issues were never decided in Ohio while the Anti-Pirating Law was on the books. However, in at least one other state with a similar statute, it has been held that the statute is not applicable to an attempt by a municipality buying power at wholesale to switch to a supplier willing to supply it with power on better terms. *Wisconsin Power and Light Company v. Public Service Commission*, 172 N.W. 2d 639 (Wisc. 1969). Although that decision is based in part on the peculiar language of the Wisconsin statute, the first grounds given by the court are policy grounds which would be equally applicable to the Ohio statute.

³² *Supra*, p. 303.

For all these reasons, it is manifest that Toledo Edison's conduct in attempting to prevent Napoleon from obtaining Buckeye power was not "necessary in order to make the regulatory Act work, 'and even then only to the minimum extent necessary.'" *Cantor v. Detroit Edison Company, supra*, at 597. Toledo Edison did not merely obey a state command; it exercised its free choice to go beyond any requirements of the state statute and must therefore "be held responsible for the consequences of . . . [its] decision." *Id.* at 592-93. Its actions violated Section 2 of the Sherman Act³³ and were not immune from the operation of the Sherman Act by virtue of the Ohio anti-pirating law.³⁴

C. The Ohio Constitution (Article XVIII, Section 6)

The applicants argue that "because Article XVIII, Section 6 explicitly requires that a municipal sale of energy outside the corporate limits be made only from the surplus product, an electric system which is taking its full power requirements from another utility as a wholesale customer is effectively barred from operating outside its corporate limits since it necessarily has no surplus product."³⁵ The same constitutional provision is invoked by Ohio Edison in defense of territorial agreements with municipalities³⁶ and by Toledo Edison in defense of Provision 8 of its standard wholesale contract with municipalities.³⁷ Their position does not withstand analysis.

The constitutional section in question provides:

Any municipality, owning or operating a public utility for the purpose of supplying the service or product thereof to the municipality or its inhabitants, may also sell and deliver to others any transportation service of such utility and the surplus product of any other utility in an amount not exceeding in either case fifty per cent of the total service or product supplied by such utility within the municipality, provided that such fifty per cent limitation shall not apply to the sale of water or sewage services.

Although applicants' brief (at p. 51) paraphrases this provision as limiting the sales of "surplus energy of that utility," *i.e.*, the municipal utility, the provision (as can be seen above) actually limits the sale by the municipality of "the surplus product of any other utility" to "fifty per cent of the total . . . product

³³ See *infra*, p. 376.

³⁴ We need not and therefore do not reach the question of whether Toledo Edison would have violated the antitrust laws had it merely filed a complaint against Napoleon with the Public Utilities Commission and gotten a judgment in its favor. However, the Supreme Court's recent decision in *New Motor Vehicle Board v. Orrin W. Fox Co.*, 439 U.S. 96 (1978) seems to indicate that it would not have, so long as the complaint was filed in good faith.

³⁵ Brief, p. 51 n. 53 (citations omitted).

³⁶ *Id.*, p. 240.

³⁷ *Id.*, pp. 195 n. 226 and 197-98.

supplied by such utility within the municipality” (Emphasis added). Thus, it is clear from the language of Section 6 that a municipality may sell to customers outside its boundaries up to fifty percent of the power it buys from another utility. Applicants do not cite any constitutional history or state court construction of this provision to the contrary.³⁸ We therefore must construe it according to the plain meaning of its text. It follows that the restrictions imposed by some of the applicants on the sale of power by municipalities outside their corporate boundaries clearly exceeded the restrictions imposed by Article XVIII, Section 6 of the Ohio Constitution.

D. Respects in Which the Licensing Board Went Too Far

We must nevertheless note that there are two grounds given by the Licensing Board in rejecting the state statutes as a defense which we cannot endorse.

The first was stated in the basic opinion below as follows:³⁹

In the instant proceedings, as in *Cantor*, the Applicants were and are the direct beneficiaries of the regulatory schemes which they claim limits [*sic*] competitive options of other entities in the CCCT. It was Applicants who had the primary interest in the passage of the Ohio Anti-Pirating Act since it insulted their systems of [*sic*] possible loss of customers to more competitive suppliers.

We fail to see how the fact that applicants may have been the direct beneficiaries of the state regulatory schemes has any bearing on the applicability of the antitrust laws. The Licensing Board cites no authority which demonstrates its relevance. Moreover, the second sentence quoted above implies that some of the applicants may have lobbied for passage of the Ohio anti-pirating law and that this either constitutes a violation of the antitrust laws or taints their other conduct with antitrust illegality. Such an

³⁸ The applicants admit that the term “surplus product” in Article XVIII, Section 6 has never been construed by an Ohio court. Reply brief, p. 35 n. 33; *accord*, testimony of John White, President of Ohio Edison (Tr. 9493), at Tr. 9524-26. Our own research confirms that admission.

³⁹ 5 NRC *supra* at 247.

implication, whether or not intended, must be rejected as inconsistent with *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127 (1961). The Supreme Court there stated (*id.* at 137-38):

In a representative democracy such as this, these [legislative and executive] branches of government act on behalf of the people and, to a very large extent, the whole concept of representation depends upon the ability of the people to make their wishes known to their representatives. To hold that the government retains the power to act in this representative capacity and yet hold, at the same time, that the people cannot freely inform the government of their wishes would impute to the Sherman Act a purpose to regulate, not business activity, but political activity, a purpose which would have no basis whatever in the legislative history of that Act. Secondly, and of at least equal significance, such a construction of the Sherman Act would raise important constitutional questions. The right of petition is one of the freedoms protected by the Bill of Rights, and we cannot, of course, lightly impute to Congress an intent to invade these freedoms.

Cf. United Mine Workers v. Pennington, 381 U.S. 657, 669-70 (1965).⁴⁰

2. In partial answer to applicants' argument that legal barriers "somehow remove the electric utility industry from the application of the antitrust laws," the Licensing Board remarked: "Of course, Applicants' argument is subject to the basic defect that if legal barriers prohibited competition in the electric utility industry, Section 105(c) of the Atomic Energy Act of 1954, as amended, would be nullified."⁴¹ If, by that, the Licensing Board meant that we should be reluctant to find inconsistency between a state law and the antitrust laws, it was merely echoing the Supreme Court's analysis in *Cantor v. Detroit Edison Co.*, *supra*, at 595. However, if the Licensing Board meant that a state may not (under the Supremacy Clause) enact anticompetitive legislation which is inconsistent with the antitrust laws, then the Licensing Board was wrong. Recent Supreme Court decisions make clear that a state may do precisely that, so long as its intention is "clearly articulated and affirmatively expressed." *New Motor Vehicle Board v. Orrin W. Fox Co.*, 439 U.S. 96, —, 58 L. Ed. 2d 361, 376 (1978); See *Bates v. State Bar*, 433 U.S. 350, 362 (1977). If we were to respect such a statute in an NRC proceeding, then Section 105(c) would not be nullified. It simply would be inapplicable to the type of conduct required by the state statute.

⁴⁰ "There may be situations in which a publicity campaign, ostensibly directed toward influencing governmental action is a mere sham to cover what is actually nothing more than an attempt to interfere directly with the business relationships of a competitor and the application of the Sherman Act would be justified." *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, *supra*, at 144. No such sham finding was made by the Licensing Board here.

⁴¹ 5 NRC 452, at 456 n. 3.

E. Ohio Amended House Bill No. 577

By letter of October 13, 1978, counsel for the applicants sent us a copy of Amended House Bill No. 577, a new Ohio statute which became effective on July 12, 1978.⁴² By order dated October 20, 1978, we asked the applicants to advise us of the relevance of this statute to the issues on appeal and we asked the other parties to respond to the applicants' submission. They have done so.

The Bill requires the Public Utilities Commission to divide the state into certified territories for each investor-owned utility and each cooperative; the certified utility would then have the exclusive right to render retail service within its territory.⁴³ The wholesale and coordination services markets are not affected at all.⁴⁴ Moreover, municipalities are excluded from the certification scheme⁴⁵ and their existing right to compete in all markets is protected in two ways: (1) the certification of territory "shall not in any manner prohibit or restrict the rights of municipalities" under the Ohio Constitution⁴⁶ and (2) nothing contained in the statute "shall be construed to affect the right of municipal corporations to generate, transmit, distribute, or sell electric energy."⁴⁷ Thus, even in the retail market, it is only competition at the fringes among investor-owned utilities and cooperatives that is prohibited and, even there, the Public Utilities Commission may authorize service by another utility if the certified utility's service is inadequate.⁴⁸ Finally, competition for municipal franchises is preserved⁴⁹ and the Anti-Pirating Law (Revised Code, Section 4905.261) is repealed.⁵⁰

Applicants argue that the passage of House Bill No. 577 should affect our decision of this appeal. But they are both vague and illogical in their statement of why this should be so. Obviously, this statute was not in effect during the time encompassed by the territorial agreements of applicants which were held by the Licensing Board to violate the antitrust laws⁵¹ and is therefore irrelevant to an evaluation of the legality of those agreements. Applicants contend further that it would be "anomalous" for us to hold that the existence of retail territorial agreements 10 or more years ago creates a situation inconsistent with the antitrust laws when state law now requires the

⁴² Its substantive provisions should appear as Ohio Revised Code sections 4933.81 to 4933.90.

⁴³ Sections 4933.81, 4933.82, 4933.83(A) and (C), and 4933.86.

⁴⁴ See Section 4933.81(F).

⁴⁵ See Section 4933.81(A).

⁴⁶ Section 4933.82(B).

⁴⁷ Section 4933.87.

⁴⁸ Section 4933.83(B).

⁴⁹ Section 4933.83(A).

⁵⁰ Section 2 of Amended House Bill No. 577.

⁵¹ See Section IX, *infra* pp. 369-375.

establishment of certified exclusive retail service areas for the whole state.⁵² The opinion below⁵³ contains the best answer to this:⁵⁴

[W]e cannot accept Applicant's arguments that, once the territorial allocation agreements end, their effects are negated. Applicants recognize the phenomenon in the electric industry of "one time competition;" that once acquired, utilities "serve forever a new customer," App. ff. 23.05. It requires no analysis, it is axiomatic, that, with this factor in the industry, territorial and customer allocation agreements cause rigidity in the market. The longer they are in force, the less they are needed. As Ohio Edison expanded its transmission and distribution lines under unlawful protection from competition, it irreversibly carved out for itself strong competitive advantages tending to exclude entry into its market by outsiders.

We need only add that any rigidity in the market has now been solidified into stone by House Bill No. 577.

Applicants assert that those agreements to transmit Buckeye power which contain restrictions similar to those in the anti-Pirating Law are now harmless because that law has been repealed. That does not appear to be so, for the basic contract providing for the wheeling of Buckeye power by Toledo Edison and other investor-owned utilities provides that "there shall not be included in the Buckeye Power Requirement [which includes power sold by Buckeye members to customer in Ohio] any quantity of electric power and/or energy furnished to any customer when the furnishing of power and/or energy to such consumer by a Buckeye Member is proscribed by the law of the State of Ohio reflected in Section 4905.26.1, Revised Code of Ohio, *as said Section is in effect at the date of this Agreement.*" (Emphasis added).⁵⁵ But, even if it were so, the restrictions were illegal until 1978 and, as we have just shown, their anticompetitive effects would tend to be lasting.

Applicants urge us to remove License Condition 1a because it is in "direct conflict" with Ohio's regulatory requirements."⁵⁶ That condition prohibits applicants from conditioning "the sale or exchange of electric energy or the grant or sale of bulk power services upon the condition that any other entity. . . enter into any agreement or understanding restricting the use of or alienation

⁵² Comments on the Ohio Statute, etc. p. 8. Similar arguments that these agreements, old and long discontinued, cannot now create a situation inconsistent with the antitrust laws were made in applicants' main brief at pp. 194 and 234-35.

⁵³ Finding 114, 5 NRC, *supra*, at 194-95.

⁵⁴ Of course, the first answer is that not all the territorial agreements found by the Licensing Board were retail; some were in the wholesale market. See Parts III.A and IX of this opinion, *infra* pp. 313-320 and 369-375.

⁵⁵ Staff Exhibit 188, p. 3.

⁵⁶ Applicants' Comments on the Ohio Statute, etc., pp. 9-10.

of such energy or services to any customers or territories; . . .”⁵⁷ However, House Bill No. 577 does not require a utility to include any such restrictions in its contracts for the sale or exchange of power. Thus, there is no conflict between the Bill and the license condition.

Finally, applicants take the position that we must modify the license conditions to accommodate what is described as Ohio’s legislative policy against competition among the electric utilities in the state.”⁵⁸ But the new statute does not evidence such a broad policy. While eliminating retail competition between investor-owned and cooperative utilities at the fringes of their service areas, it preserves both wholesale competition and competition by municipalities, even at the retail level. Indeed, it makes retail competition by municipalities easier because of the repeal of the Anti-Pirating Law. As we noted earlier, state laws do not create exemptions from the federal antitrust laws except where it is “necessary in order to make the regulatory Act work, and even then only to the minimum extent necessary.” *Cantor v. Detroit Editor Co.*, *supra*, at 597. Applicants have not called our attention to anything in the antitrust conditions imposed below which requires them to do something prohibited by House Bill No. 577 or which would prevent the Bill from being implemented. Thus, there is nothing in the Bill which would require us to change the conditions.

III. RESTRAINTS ON THE RESALE OF ELECTRIC POWER

There were a number of instances in which the Licensing Board found that restrictions imposed or attempted to be imposed by one or more of the applicants on parties purchasing or desiring to purchase electricity or ownership interests in nuclear plants from them, which restricted the rights of the latter to sell electric power, were inconsistent with the antitrust laws. See its findings 61-62, 74, 127 (paragraph 5), 132-42, 166-68 and 222(A), (B) and (C).⁵⁹ These restrictions were characterized by the Licensing Board as restraints on alienation⁶⁰ and found unlawful at least partly on the basis of *United States v. Arnold, Schwinn and Co.*, 388 U.S. 365 (1967).⁶¹ *Schwinn* held: “Under the Sherman Act, it is unreasonable without more for a manufacturer to seek to restrict and confine areas or persons with whom an article may be traded after the manufacturer has parted with dominion over it.” *Id.* at 379. This meant that vertical restraints on territories or customers in or to which a product may be sold were illegal *per se* under Section 1.

However, after the issuance of the Licensing Board’s decision in this case, the Supreme Court overruled *Schwinn* and held that the legality of vertical

⁵⁷ 5 NRC, *supra* at 256.

⁵⁸ Applicants’ Comments on the Ohio Statute, etc., p. 12.

⁵⁹ 5 NRC, *supra* at 175-76, 178-79, 199, 200-03, 216-17 and 241-42.

⁶⁰ Finding 201, 5 NRC 133 at 232.

⁶¹ See 5 NRC, *supra* at 148 and 199.

restrictions on the sale of a product must be determined by the rule of reason. *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977). The question which we must address is whether, in light of that decision, the Licensing Board's findings as to these restraints on alienation should be affirmed or reversed.

There is the preliminary question of whether the Licensing Board held the restraints illegal as *per se* violations or whether it held them illegal under the rule of reason. The very fact that the *Schwinn* case was good authority at the time of the Licensing Board's decision and was cited in its opinion twice in connection with the subject of restraints on alienation⁶² provides a substantial basis for thinking that *Schwinn's per se* rule was relied upon. But whether this is so is not free from doubt because (1) the first mention of *Schwinn* in the opinion below is under a section headed "Rule of Reason", which follows a section headed "Per Se Offenses";⁶³ (2) the opinion below, in most instances, does not identify the exact legal basis for each finding; and (3) the Licensing Board, in its decision denying a stay pending appeal, said (5 NRC 452 at 458):

g) Applicants then criticize the asserted failure of the Licensing Board to determine whether any of the alleged restraints on alienation or alleged refusals to interconnect, wheel power or offer pool membership were unreasonable within the meaning of the antitrust laws.

Applicants' criticism is demonstrably inaccurate. For example, see LBP-77-1, 5 NRC ff. 214, 216, in which the Board holds that TECO's contract provision 8, imposing restraints on the ability of TECO's municipal customers to market power purchased from TECO to customers outside of municipal limits, was unreasonable. We made findings as to the absence of any credible evidence setting forth the necessity of the clause. See also *Id.*, ff. 217-218, 219-220, which did not specifically use the word unreasonable in describing obstacles to wheeling imposed by TECO but which lead to no conclusion other than one of blatant unreasonability. Further, see *id.*, ff. 198, 200, which specifically holds that Ohio Edison failed to act reasonably in negotiations with WCOE relating to bulk power supply options and the denial of wheeling services. The basis for this conclusion was developed at substantial length in the immediate preceding pages of the opinion.

We believe that a monumental case of unreasonable conduct emerges from our findings. Repeating "unreasonable" after the description of each unjustifiable anticompetitive action would add little to the opinion except extra pages. Having identified at least two instances which directly rebut Applicants' contention that no findings of unreasonability were made, there is no need to prolong the exercise by identifying other such findings.

⁶² *Id.* at 148 and 199.

⁶³ *Id.* at 147-48.

It is clear that the rights of first refusal insisted upon by CEI as conditions for selling power to Cleveland and Painesville were considered under the rule of reason. See the discussion in Finding 222(B), 5 NRC at 242. However, the original opinion is at best ambiguous as to whether the rule of reason was used to analyze the other restraints on alienation. In Finding 127 (paragraph 5),⁶⁴ the discussion strongly suggests a *per se* analysis. And in the Board's treatment of Provision 8 of Toledo Edison's contract with municipalities,⁶⁵ cited as an example of rule of reason analysis in the above quotation from the Licensing Board's opinion denying a stay, it was characterized as "unreasonable on its face." Such language strongly connotes the invocation of a *per se* rule. Even in the other restraint on alienation findings, the language used does not clearly reflect application of the rule of reason analysis. Moreover, the Licensing Board's after-the-fact characterization of what it did in its initial decision is not binding; it is helpful only to the extent that it may be persuasive and, as we have shown, it is not terribly persuasive on this point. Taking these things into consideration, we feel compelled to assume that a *per se* rule was applied to evaluate all of the restraints on alienation other than the rights of first refusal.

We will first discuss those restraints on alienation as to which we have decided a *per se* rule was applied. Following that, we will deal with those analyzed under the rule of reason.

A. Territorial and Customer Restrictions

The restrictions which we deem to have been treated as *per se* offenses of Section 1 of the Sherman Act were either territorial limitations or customer allocations. They were the following:

1. In its negotiations for the sale of power to its 21 municipal wholesale customers ("WCOE"), Ohio Edison insisted on requiring that any excess base load capacity from units owned by WCOE would have to be resold to Ohio Edison and not to anyone else.⁶⁶
2. Various territorial restrictions, customer allocations, and agreements not to resell power in the wholesale market were inserted by Ohio Edison and Pennsylvania Power in many of their power supply contracts with

⁶⁴ *Id.* at 199.

⁶⁵ Finding 166, *id.* at 216.

⁶⁶ Finding 127 (paragraph 5), 5 NRC 133 at 199. We are mystified by Ohio Edison's citation (Brief, p. 216) of Mr. Cheesman's testimony at Tr. 12155 in support of the proposition "that there were no restrictions on the resale of purchased power by WCOE members to OE's customers...". In fact, Mr. Cheesman there testified that Ohio Edison's offer to WCOE of base load capacity from units such as Perry or Davis-Besse provided that, "if there was any excess in that capacity owned by the WCOE that it would have to go to the company [Ohio Edison] and not be available for export by the WCOE to an outside source."

rural electric cooperatives and municipalities.⁶⁷

3. In its wholesale contracts with municipalities, Toledo Edison has had, for the most part in prior years, provisions allocating customers and restricting the territories which the municipalities might serve.⁶⁸

Before *Schwinn*, the law was that, although vertical territorial limitations are subject to the rule of reason, horizontal ones are illegal *per se*. See *White Motor Co. v. United States*, 372 U.S. 253 (1963). Such horizontal restraints continued to be illegal *per se* after *Schwinn* and many of the judicial opinions regarded them as distinctly worse than vertical restraints, even though the latter were now (at least in theory) also illegal *per se*.⁶⁹ Thus, Mr. Justice Marshall, writing for the Court in *United States v. Topco Associates*, 405 U.S. 596 (1972), stated (at 608):

One of the classic examples of a *per se* violation of Section 1 is an agreement between competitors at the same level of the market structure to allocate territories in order to minimize competition. Such concerted action is usually termed a "horizontal" restraint, in contradistinction to combinations of persons at different levels of the market structure, e.g., manufacturers and distributors, which are termed "vertical" restraints. This Court has reiterated time and time again that "[h]orizontal territorial limitations . . . are naked restraints of trade with no purpose except stifling of competition." *White Motor Co. v. United States*, 372 US 253, 263, 9 L Ed 2d 738, 746, 83 S Ct 696 (1963). Such limitations are *per se* violations of the Sherman Act. [Citations omitted.]

Similarly, a horizontal division of a market by allocation of customers has also long been held to be a *per se* violation of Section 1 of the Sherman Act. See *Addyston Pipe and Steel Co. v. United States*, 175 U.S. 211, 241 (1899); *United States v. Consolidated Laundries Corp.*, 291 F.2d 563, 574-75 (2d Cir. 1961). As the Court of Appeals said in *Consolidated Laundries*, *loc cit. supra*:

Assuming that customers were allocated in the case at bar, no more need be proved; we agree that the *per se* rule should be applied. We fail to

⁶⁷ Findings 132-42 and 222(A), *id.* at 200-03 and 242. Ohio Edison contends and the evidence shows that the restrictions on resale were in contract provisions which were in effect only from 1965 to 1972. See Tr. 2337, 2188-92; Finding 139, 5 NRC, *supra*, at 202. That does not mean that they are not relevant to the history of competitive relationships under examination in this case.

⁶⁸ Findings 166-68, *id.* at 216-17.

⁶⁹ As one commentator observed before *Schwinn* was overruled, "judges have struggled to distinguish or limit *Schwinn* in ways that are a tribute to judicial ingenuity." Robinson, *Recent Antitrust Developments: 1974*, 75 *Colum. L. Rev.* 243, 272 (1975). The aim of that struggle was to find a reason for not applying the *per se* rule to vertical restraints. For this reason, the distinction between vertical and horizontal restraints was still an important one during the period from 1967 to 1977, when *Schwinn* was the law.

see any significant difference between an allocation of customers and an allocation of territory.⁷⁰

In explaining why it was overruling *Schwinn*, the Supreme Court was careful to say: "As in *Schwinn*, we are concerned here only with nonprice vertical restrictions." *Continental T.V., Inc. v. GTE Sylvania Inc., supra*, at 51 n. 18. And in footnote 28 of its opinion (*id.* at 58), it stated:

There may be occasional problems in differentiating vertical restrictions from horizontal restrictions originating in agreements among the retailers. *There is no doubt that restrictions in the latter category would be illegal per se*, see, e.g., *United States v. General Motors Corp.* 384 US 127, 16 L Ed 2d 415, 86 S Ct 1321 (1966); *United States v. Topco Associates, Inc., supra*, but we do not regard the problems of proof as sufficiently great to justify a *per se* rule. [Emphasis added].

We also take note of footnote 27 (*id.* at 57-58) where the Court stated that *Topco* is not contrary to its holding in *Continental T.V.*, "for it involved a horizontal restriction among ostensible competitors."

Moreover, Justice Harlan's dissenting opinion in *United States v. Sealy*, 388, U.S. 350 (1967), shows why a *per se* rule for horizontal restrictions is completely consistent with the use of the rule of reason for vertical restrictions. That case was decided the same day as *Schwinn* and Justice Harlan dissented in both cases. He argued that the *per se* rule should not be extended to vertical restrictions for essentially the same reasons advocated by the majority ten years later in *Continental T.V.* Significantly for our purposes, he wrote (388 U.S. at 358-59):

Horizontal agreements among manufacturers to divide territories have long been held to violate the antitrust laws without regard to any asserted justification for them. See *Addyston Pipe & Steel Co. v. United States*, 175 US 211, 44 L ed 136, 20 S Ct 96; *United States v. National Lead Co.* 332 US 319, 91 L ed 2077, 67 S Ct 1634; *Timken Roller Bearing Co. v. United States*, 341 US 593, 95 L ed 1199, 71 S Ct 971. The reasons is that territorial

⁷⁰ In *Continental T.V., Inc., supra*, the Supreme Court also expressed its view that territorial and customer restrictions must be treated the same way, although it was speaking there of vertical restrictions. It said (433 U.S. at 46):

[T]he *Schwinn* franchise plan included a companion restriction, apparently not found in the *Sylvania* plan, that prohibited franchised retailers from selling *Schwinn* products to non-franchised retailers. In *Schwinn* the Court expressly held that this restriction was impermissible under the broad principle stated there. In intent and competitive impact, the retail-customer restriction in *Schwinn* is indistinguishable from the location restriction in the present case. In both cases the restrictions limited the freedom of the retailer to dispose of the purchased products as he desired. The fact that one restriction was addressed to territory and the other to customers is irrelevant in functional antitrust analysis. . . .

divisions prevent open competition, and where they are effected horizontally by manufacturers or by sellers who in the normal course of things would be competing among themselves, such restraints are immediately suspect. As the Court noted in *White Motor Co. v. United States*, 372 US 253, 263, 9 L.ed 2d 738, 746, 83 S Ct 696, they are "naked restraints of trade with no purpose except stifling of competition." On the other hand, vertical restraints—that is, limitations imposed by a manufacturer on his own dealers, as in *White Motor Co.*, supra, or by a licensor on his licensees—may have independent and valid business justifications. The person imposing the restraint cannot necessarily be said to be acting for anticompetitive purposes. Quite to the contrary, he can be expected to be acting to enhance the competitive position of his product vis-a-vis other brands.

For all these reasons, we think it is clear that the Court did not intend, in *Continental T.V.*, to overrule the well established principle that horizontal territorial and customer restrictions are illegal *per se*.⁷¹ And, indeed, the Court's professed rationale for turning to the rule of reason, the promotion of interbrand competition, does not apply to a commodity such as electricity which has no distinguishable brands.

Having established that the *per se* rule has been left undisturbed for horizontal restraints, we must determine the character of the restraints in question here. Obviously, there existed a vertical relationship between Ohio Edison, Pennsylvania Power and Toledo Edison, on the one hand, and the municipalities and cooperatives to whom they sold wholesale power. But, as the opinion below makes clear, the latter were also potential competitors of those applicants in either the wholesale or retail markets.⁷² Thus, their relationship was horizontal as well as vertical. In such cases, it has been repeatedly held that restrictions as to territories or customers imposed by the manufacturers or franchisors upon distributors or franchisees who are their actual or potential competitors are horizontal restrictions and hence illegal *per se*. *Otter Tail Power Co. v. United States*, 410 U.S. 366, 378 (1973); *American Motor Inns, Inc. v. Holiday Inns, Inc.*, 521 F. 2d 1230, 1252-54 (3rd Cir. 1975); *Hobart Brothers Co. v. Malcolm T. Gilliland, Inc.*, 471 F.2d 894, 899 (5th Cir.), *cert denied*, 412 U.S. 923 (1973); *Pitchford Scientific Instruments Corp. v. Pepi, Inc.*, 435 F. Supp. 685, 688 (W.D. Pa. 1977), *aff'd mem.*, 582 F.2d 1975 (3rd Cir. 1978); *cert denied*, 60 L.Ed. 2d 242 (1979);

⁷¹ Professor Handler has expressed the opinion that *Topco* is really inconsistent with the rationale of *Continental T.V. v. GTE Sylvania*, the Court's protestations to the contrary notwithstanding. Compare Handler, *Changing Trends in Antitrust Doctrines: An Unprecedented Supreme Court Term—1977*, 32 THE RECORD OF THE ASS'N OF THE BAR OF THE CITY OF N.Y. 530, 537-38 (1977), with *Continental T.V.*, supra, 433 U.S. at 57 fn. 27 and 58 fn. 28.

⁷² 5 NRC 133 at 199, 200-03 and 216-17.

Interphoto Corp. v. Minolta Corp., 295 F. Suppl. 711 (S.D.N.Y.), *aff'd on other grounds*, 417 F.2d 621 (2d Cir. 1969). The Fifth Circuit's reasoning in *Hobart Brothers* is instructive. The Court stated (*loc cit. supra*):

It is a *per se* violation of Section 1 for competitors at the same level of the market structure to allocate territories in order to minimize competition. See *United States v. Topco Associate, Inc.*, 405 U.S. 596, 92 S.Ct. 1126, 31 L.Ed. 2d 515 (1972), and cases cited therein.

By use of its distribution agreement signed in June, 1964, Hobart limited Gilliland to the area in which Gilliland could sell Hobart products. While Gilliland could sell Hobart products, it also competed directly with Hobart in products they both manufactured and in accounts that Hobart serviced directly from its home office. Hobart had similar distribution agreements with other distributors. The effect of such agreements was to eliminate competition between Hobart and its distributors. [Citation omitted]. The Hobart distribution agreement, while appearing to allocate territory vertically, in fact, resulted in a horizontal territorial allocation between Hobart and its own distributors. Such an arrangement must be treated as it operated in practice rather than "as arranged by skillful drafting." [Citation omitted].

Particularly significant, because it applied this rule to the electric power industry, is *Otter Tail, supra*. There, the Otter Tail Power Company refused to wheel power from the Bureau of Reclamation and various cooperatives to two municipalities on the ground that its contracts with the former relieved it of any duty to wheel power to municipalities served by it at retail at the time the contracts were made. The District Court had found that these restrictive provisions were "in reality, territorial allocation schemes" and *per se* violations of the Sherman Act.⁷³ The Supreme Court, in affirming, said: "We recently re-emphasized the vice under the Sherman Act of territorial restrictions among potential competitors. *United States v. Topco Associates*, 405 U.S. 596, 608, 31 L. Ed. 2d 515, 92 S. Ct. 1126." To the same effect see *Pennsylvania W. & P. Co. v. Consolidated G., E.L. & P. Co.*, 184 F.2d 552, 558 (4th Cir.), *cert. denied*, 340 U.S. 906 (1950).⁷⁴ In these cases, though the horizontal aspect of the relationship was only potential and not actual, the *per se* rule was nevertheless applied.⁷⁵

⁷³ 410 U.S. at 378.

⁷⁴ The *per se* rule has also been applied to a purely horizontal division of markets by territorial allocation between electric utilities. *Gainesville Utilities Department v. Florida Power and Light Co.*, 573 Fmwd 292 (5th Cir.) *cert. denied*, 58 L.Ed.2d 424 (1978).

⁷⁵ A case which might be deemed inconsistent with the conclusions we have reached both with respect to the preservation of the *per se* rule for horizontal restraints in the wake of *Continental T. V.* and the application of the *per se* rule when both horizontal and vertical restraints are present is *Eastern Scientific Co. v. Wild Heerbrugg Instruments, Inc.*, 52 F.2d 883 (1st Cir.), *cert. denied*, 58 L.Ed. 2d 128 (1978). There, an importer permitted a distributor to sell its products at any price

(Continued on next page)

Even more directly in point is the recent decision of the Federal Energy Regulatory Commission (FERC) in *Gulf States Utilities Co.*, Docket No. ER76-816 (October 20, 1978). There, the FERC had before it a settlement agreement providing for the filing by a private utility of a wholesale rate schedule restricting the wholesale customers (cooperatives) from reselling the power to anyone but "ultimate consumers."⁷⁶ The Commission stated (at pp. 5-6):

This gives Gulf States the power to eliminate or inhibit its bulk power customers as potential competitors of Gulf States for further wholesale sales. The Commission will not give its imprimatur to the proposed acquisition of market power.⁵

(Continued from previous page)

it might like in its assigned area of Rhode Island but required it to sell at no less than list price outside Rhode Island. The Court held that the price-fixing was not illegal *per se*. It reasoned that, since the importer could have imposed the greater anticompetitive restriction of not permitting sales outside Rhode Island at all without incurring *per se* illegality, it should not incur *per se* illegality as a result of having imposed the lesser anticompetitive restriction of permitting such sales but only at list price.

This holding is, in our opinion, of doubtful validity. The greater power does not always include the lesser. This is because the lesser power is often different in nature as well as degree from the greater power and its exercise would violate policies which would not be violated by the exercise of the greater power. See Powell, *The Nature of a Patent Right*,⁴⁷ Colum. L. Rev. 663 at 672 and 678-78 (1917). Moreover, the Court emphasized in *Continental T.V.*, *supra*, 433 U.S. at 51 n. 18, that it did not intend to change the rule that price restrictions are illegal *per se*. *Pitchford Scientific Instruments Corp. v. PEPI, Inc.*, 435 F. Supp. 685 (W.D. Pa. 1977), *aff'd mem.*, 582 F.2d 1275 (3rd Cir. 1978), *cert. denied*, U.S. , 60 L.Ed.2d 242 (1979), is a post-*Continental T.V.* decision with a holding directly contrary to *Eastern Scientific*. And it held that restrictions which "were part and parcel of a comprehensive price-fixing policy" were illegal *per se*. *Id.* at 689.

However, even if *Eastern Scientific* were correct, it is significantly distinguishable from the case at bar. There, the importer and distributor did not compete with each other, actually or potentially, in the same market; their relationship was purely vertical. Here, as we have shown, there was both a vertical and a horizontal relationship between the applicants involved and their wholesale customers; they were potential competitors in the same market. Thus, the rationale of *Hobart Brothers*, *supra*, and the similar cases cited above require the application of a *per se* rule.

⁷⁶ See p. 270, *supra*.

(⁵) The anticompetitive effect is similar to that of a market division or allocation of customers between competitors—conduct which the Supreme Court has held to violate the antitrust laws. *United States v. Topco Associates, Inc.*, 405 U.S. 596, 606-612 (1972). The situation here differs substantially from that in *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977), where the Court held that the imposition of resale restrictions by manufacturers on distributors of their products could be reasonable and procompetitive in some circumstances. In that case, Sylvania argued that restraining competition among its retail franchisees in sales of Sylvania television sets promoted more significant competition between Sylvania and other television brands. No such redeeming procompetitive virtues warrant the imposition of explicit resale prohibitions by electric wholesalers; there are no brand names to be promoted or brand reputations to be protected here.

We do not find in the regulatory scheme under the Federal Power Act any public policy basis for allowing public utilities to employ tariff provisions to *foreclose* wholesale competition between a supplier like Gulf States and its bulk power purchases. To the contrary, competition where feasible complements the regulatory scheme. According to the Supreme Court in *Otter Tail Power Co. v. United States*, 'the history of Part II of the Federal Power Act indicates an overriding policy of maintaining competition to the maximum extent possible consistent with the public interest.' 410 U.S. 366, at 374 (1973). It is axiomatic that competition creates pressure on electric utilities to reduce their costs and increase their efficiency in power supply production and marketing. This downward pressure on costs supports our direct regulation of rates to the ultimate benefit of consumers of electricity.

This analysis of the problem by the FERC is completely consistent with, and indeed strikingly similar to, the analysis we have made here.

Because as we have shown, the relationship between the three applicants involved and their wholesale customers was not only vertical but horizontal because of potential competition, the per se rule was correctly applied to establish the illegality of the territorial and customer restraints imposed by some of the applicants.⁷⁷ We therefore need not explore the question of whether they could also have been illegal under the rule of reason.

There is one further point made in *Gulf States Utilities Co., supra*, which merits our consideration. The FERC, after discussing the anticompetitive nature of restraints on resale, went on to say (at pp. 6-7):

The anticompetitive effect of resale prohibitions is of course not conclusive under the Federal Power Act. It remains for us to consider whether such prohibitions serve some significant regulatory purpose which cannot be achieved by a less anticompetitive method and which would render them in the public interest notwithstanding that desirable competition is impaired.

In this connection, we recognize that electric utilities must plan and construct sufficient generation and transmission to meet their future power supply requirements in an orderly fashion. Proper system planning

⁷⁷ Violation of Section 1 of the Sherman Act requires either a contract, combination or conspiracy. Thus, if an applicant, acting alone, sought to impose a restraint but did not succeed in imposing it, there would be no violation of Section 1. However, if the restraint would have been a violation of Section 1 had it been imposed, the attempt of the applicant to use its size and power in the market to impose it would have contributed to "a situation inconsistent with the antitrust laws" within the meaning of Section 105c (5) of the Atomic Energy Act and it could be considered as an element in a pattern of conduct showing monopolization or attempt to monopolize in violation of Section 2 of the Sherman Act.

requires utilities like Gulf States to commit to building necessary facilities well in advance of the time such facilities are needed actually to serve loads, and the utilities have an important interest in projecting their load growth and requirements as accurately as possible. Resale restrictions of the sort Gulf States has prescribed do serve this interest; they insure that the loads of wholesale customers will not vary by virtue of those customers adding or losing wholesale customers of their own. These restrictions are, however, an unnecessarily blunt device for this purpose, given their apparent anticompetitive effect and the availability of other, well-established ways for utilities to regulate their loads without impairing competition. [Footnote omitted].

We hold, therefore, that direct resale restrictions, such as the one here, imposed by power suppliers on their wholesale customers are unreasonable and unjust. Moreover, we conclude that any such restrictions are so devoid of redeeming value in light of the availability of other well-established means of accomplishing the legitimate purposes of regulated utilities that they should be declared *per se* unlawful in this and all other cases in which the issue may be presented. The public interest does not require and should not tolerate any further record inquiry of this issue. By our action today we announce to all persons interested in our proceedings that we intend to consistently apply the precedent established in this case to strike down any similar resale restrictions presented for our approval.

We have heretofore called attention in this very case to the difference between agencies (such as the FERC) that regulate industries pursuant to a "public interest" standard and agencies (such as this Commission) which regulate only under the antitrust laws themselves.⁷⁸ Thus, although the last-quoted portion of *Gulf States Utilities* is not directly relevant to our decision here, it does demonstrate that applicants (who have argued strenuously that we should judge them against a public interest standard)⁷⁹ would not prevail even under such a standard, at least with respect to restrictions on resale.

The applicants involved argue that these practices should not have been considered because they have been abandoned. However, in determining whether a situation inconsistent with the antitrust laws exists, it is necessary to look into past instances of anticompetitive conduct. While persisting anticompetitive practices would be more significant, we cannot say that the Licensing Board was unreasonable in attaching at least some significance to these past practices.

B. Rights of First Refusal

Those restrictions on alienation treated by the Licensing Board under the rule of reason are CEI's conditioning of its offers of participation in its nuclear

⁷⁸ ALAB-385, *supra*, 5 NRC 621, at 632-34.

⁷⁹ Brief, pp. 29-40.

units to the cities of Cleveland and Painesville on a right of first refusal in CEI to purchase any power from each city's participation "not required by the city for its own use or the use by retail customers of the city."⁸⁰ We will consider separately the situation with respect to each city.

1. Cleveland

With respect to Cleveland, the Licensing Board reasoned as follows:⁸¹

The CEI response to Cleveland's request for access to power from Davis-Besse and Perry was conditioned on rights of first refusal to repurchase any excess power from Cleveland's share of those units for which Cleveland had no immediate need. The effect of this restraint would be to prevent or impede Cleveland from entering into power exchange or economy transactions with other electric power producers. We refer in particular to Cleveland's preliminary discussions and interest in agreeing to exchange bulk power services with the City of Richmond, Indiana. We have seen that Applicants' denial of CAPCO membership to Cleveland prevented Cleveland from pooling or coordinating its operation or development with CEI, its surrounding utilities, or with other Applicant companies. The right of first refusal on Davis-Besse and Perry power as a price for access to these units would frustrate Cleveland's ability to provide for any alternative to CAPCO membership and would relegate it to a continued role as an isolated entity. Applicants' jointly espoused rationale of the purpose of CAPCO is abundant evidence of and recognition of the competitive burden imposed by isolated operation.

We find the Board's analysis basically sound and we adopt it.

CEI, in support of its exception from this finding, makes three arguments. The first is that the record does not support the conclusion that the right of first refusal would have prevented Cleveland from entering into coordination agreements with other utilities. While it certainly is true that the right of first refusal would have theoretically left open the possibility of coordination between Cleveland and another utility, as a practical matter, it would have made such coordination extremely unlikely. This is because a utility wanting to enter into a coordination agreement would normally want to be able to buy power as well as sell power.⁸² Cleveland would have been a much less valuable coordination partner for another utility had CEI possessed a veto over any transfer of power from Cleveland to that utility.

CEI's second argument is that, because CEI had originally planned to use all of its share from the nuclear plants in question to serve its own customers, it

⁸⁰ Exh. DJ-188; Findings 61-62, 5 NRC at 175-76; Finding 74, *id.* at 178-79; Finding 222(B) and (C), *id.* at 242.

⁸¹ Finding 222(B), *id.* at 242.

⁸² See *Midland, supra*, 6 NRC 892, at 952-57.

was reasonable to request that, if Cleveland found it did not need all of the electricity from its share of the plants, it would make that power available to CEI on a first-refusal basis “to alleviate some of the burden caused by accommodating Cleveland’s tardy request.”⁸³ This is nonsense. CEI was offering to negotiate with Cleveland for a given share of CEI’s nuclear capacity. Thus, Cleveland would have been entitled to use its entire share for its needs and those of its customers. If, by some happenstance, it were able to sell some of its power to another utility, CEI would be no worse off than if Cleveland had used all of its share for its own needs. In other words, once Cleveland had a participation entitling it to a given share of the plants’ capacity, CEI would not be able to rely on getting any part of that back. Thus, the primary purpose of the right of first refusal must have been an anticompetitive one—to prevent Cleveland from exchanging power with other utilities, thereby isolating it and making it solely dependent on CEI for power that it might not be able to generate in plants in which it had an ownership interest.

Thirdly, CEI asserts that Cleveland did not object to the right of first refusal until the hearing in this case. Even if true, this is irrelevant.

2. Painesville

In response to Painesville’s second request for participation in the Perry nuclear plants, CEI, in 1976, sent the city a copy of the participation agreement it had offered to Cleveland over two years earlier.⁸⁴ This included the right of first refusal in CEI with respect to power not needed by the city. The Licensing Board characterized the agreement as “obviously insufficient,” apparently for the same reasons as it offered in the case of Cleveland.

CEI suggests (Brief, pp. 181-82) that this is all beside the point because Painesville’s failure to accept CEI’s invitation to discuss CEI’s participation offer shows that Painesville was not serious about obtaining participation in Perry. However, given the fact that the offer contained such unfair and oppressive terms,⁸⁵ one cannot blame Painesville if it thought that discussions would be futile. After all, Cleveland, a much larger city, had tried to negotiate this matter with CEI and had not been able to reach an agreement⁸⁶ and CEI’s prior conduct with respect to Painesville on the subjects of interconnection and wheeling had been unyielding and oppressive.⁸⁷ Painesville was not required to go through the motions of fruitless negotiations in order to negate any inference that it was waiving its rights under the antitrust laws.

⁸³ Brief, p. 151.

⁸⁴ Finding 74, 5 NRC, *supra* at 179.

⁸⁵ See finding 61, *id.* at 175-76; finding 222(C), *id.* at 242.

⁸⁶ See finding 61, *id.* at 175-76.

⁸⁷ See findings 68-73, *id.* at 177-78.

IV. THE DESIRABILITY OF COMPETITION AMONG ELECTRIC UTILITIES

Applicants assert that the Licensing Board committed legal error by failing to make “any assessment as to whether competition between electric entities in the electric utility industry is, in fact, in the public interest.”⁸⁸ They contend that, in a “highly-regulated, natural monopoly industry” such as this, competition cannot protect the public interest; it must therefore be balanced against the public’s “interest in energy supply at a reasonable price.”⁸⁹ They claim that Congress, in the Federal Power Act, has expressed its “judgment . . . most emphatically that competition cannot accomplish the desired objective of efficient resource allocation in this sector of the economy as it can in other sectors,”⁹⁰ And this is why, they argue, the Licensing Board erred in applying *per se* rules to their conduct, rather than the rule of reason.⁹¹

We answered these arguments in our opinion of March 23, 1977 denying a stay.⁹² And we stand on that answer. We there cited *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973) and *Cantor v. Detroit Edison Co.*, 428 U.S. 579 (1976). We thought that these cases clearly settled the matter but applicants have doggedly continued to pursue these arguments.⁹³ Therefore, in the hope of finally putting this issue to rest, we will add a few comments.

The argument that a highly regulated industry should not be fully subject to the procompetitive requirements of the antitrust laws was nowhere answered better than in Justice Stevens’ opinion in *Cantor* (as to this section of it, supported by a majority)⁹⁴ which said:⁹⁵

Unquestionably there are examples of economic regulation in which the very purpose of the government control is to avoid the consequences of unrestrained competition. Agricultural marketing programs, such as that involved in *Parker*, were of that character. But all economic regulation does not necessarily suppress competition. On the contrary, public utility regulation typically assumes that the private firm is a natural monopoly and that public controls are necessary to protect the consumer from exploitation. There is no logical inconsistency between requiring such a firm to meet regulatory criteria insofar as it is exercising its natural monopoly powers and also to comply with antitrust standards to the

⁸⁸ Brief, pp. 29-30.

⁸⁹ *Id.* at 30-33.

⁹⁰ *Id.* at 33-34.

⁹¹ *Id.* at 35-40.

⁹² ALAB-385, *supra*, 5 NRC at 632-34.

⁹³ See, in addition to the pages of applicants’ main brief cited in notes 88 to 91, *supra*, their reply brief at 24-26.

⁹⁴ Chief Justice Berger concurred in this part of the opinion. 428 U.S. at 603.

⁹⁵ 428 U.S. at 595-96.

extent that it engages in business activity in competitive areas of the economy. [Footnotes omitted.]

And this is the reason which underlies the familiar rule restated recently by Judge Harold H. Greene in *United States v. American Telephone & Telegraph Co.*, 461 F. Supp. 1314, 1328 (D.D.C. 1978):

The purpose of the implied immunity rule is to eliminate adherence to antitrust standards when there are irreconcilable differences between the antitrust laws and federal regulatory statutes. But the antitrust laws cannot be held hostage to a supposed irreconcilability between antitrust and regulatory enforcement when no such irreconcilability exists in fact, nor can the alleged unlawful actions of defendants be deemed protected from the Sherman Act by the cloak of generalized regulation . . . [Footnote omitted.]

Accord, MCI Communications Corp. v. Am. Tel. & Tel. Co., 462 F. Supp. 1072 (N.D. Ill. 1978). Applicants have failed to show that any of the federal regulatory requirements to which they are subject are irreconcilable with the antitrust laws.

Applicants' contention that the Licensing Board had to decide whether competition in the electricity industry is in the public interest and, if it found it not to be, had to take that into account in applying the antitrust laws, is fundamentally inconsistent with the reasoning of the Supreme Court in *Nat. Soc. of Professional Engineers v. United States*, 435 U.S. 679 (1978). There, Justice Stevens, writing on this point for six members of the Court,⁹⁶ stated:⁹⁷

The early cases also foreclose the argument that because of the special characteristics of a particular industry, monopolistic arrangements will better promote trade and commerce than competition. *United States v Freight Association*, 166 U.S. 290, 41 L Ed 1007, 17 S Ct 540; *United States v Joint Traffic Assn.*, 171 US 505, 573-577, 43 L Ed 259, 19 S Ct 25. That kind of argument is properly addressed to Congress and may justify an exemption from the statute from specific industries, but it is not permitted by the Rule of Reason.

• • •

In this respect the Rule of Reason has remained faithful to its origins. From Mr. Justice Brandeis' opinion for the Court in *Chicago Board of Trade* to the Court opinion written by Mr. Justice Powell in *Continental T.V., Inc.*, the Court has adhered to the position that the inquiry mandated by the Rule of Reason is whether the challenged agreement is one that promotes competition or one that suppresses competition. "The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition or whether it is such as may suppress or even destroy competition." 246 US, at 238, 62 L Ed 683, 38 Ct

⁹⁶ Chief Justice Burger concurred in this portion of the opinion. 435 U.S. at 701.

⁹⁷ 435 U.S. at 689-90, 691, 692, 695 and 696 (footnotes omitted).

242; quoted in 433 US at 49 n 15, 53 L Ed 2d 568, 97 S Ct 2549.

There are, thus, two complementary categories of antitrust analysis. In the first category are agreements whose nature and necessary effect are so plainly anticompetitive that no elaborate study of the industry is needed to establish their illegality—they are “illegal per se”—in the second category are agreements whose competitive effect can only be evaluated by analyzing the facts peculiar to the business, the history of the restraint, and the reasons why it was imposed. In either event, the purpose of the analysis is to form a judgment about the competitive significance of the restraint; it is not to decide whether a policy favoring competition is in the public interest, or in the interest of the members of an industry. Subject to exceptions defined by statute, that policy decision has been made by the Congress.

• • •

The Sherman Act reflects a legislative judgment that ultimately competition will not only produce lower prices, but also better goods and services. . . . Even assuming occasional exceptions to the presumed consequences of competition, the statutory policy precludes inquiry into the question whether competition is good or bad.

• • •

In sum, the Rule of Reason does not support a defense based on the assumption that competition itself is unreasonable. Such a view of the Rule would create the “sea of doubt” on which Judge Taft refused to embark in *Addyston*, 85 F, at 284, and which this Court has firmly avoided ever since.

Applicants’ assertion that the Federal Power Act and the Public Utility Holding Company Act manifest Congress’ judgment that competition should not be the goal in the electric utility industry was rejected by the Supreme Court in *Otter Tail*, where it stated:⁹⁸

It is clear, then, that Congress rejected a pervasive regulatory scheme for controlling the interstate distribution of power in favor of voluntary commercial relationships. When these relationships are governed in the first instance by business judgment and not regulatory coercion, courts must be hesitant to conclude that Congress intended to override the fundamental national policies embodied in the antitrust laws. See *United States v. Radio Corp. of America*, *supra*, at 351, 3 L. Ed. 2d 354. This is particularly true in this instance because Congress, in passing the Public Utility Holding Company Act, which included Part II of the Federal

⁹⁸ 410 U.S. at 374.

Power Act, was concerned with 'restraint of free and independent competition' among public utility holding companies. See 15 U.S.C. §79a(b) (2).

Justice Blackmun, writing for the Court in *Gulf States Utilities Co. v. FPC*, 411 U.S. 747, at 759 (1963), construed Congress' intentions with respect to application of the antitrust laws to the electric power industry, as manifested in Title II of the Federal Power Act, thusly:

Indeed, within the confines of a basic natural monopoly structure, limited competition of the sort protected by the antitrust laws seems to have been anticipated.

Applicants' thesis that the Atomic Energy Act shows that Congress rejected competition as a goal in the electric power industry is similarly insupportable. Section 105a of the Atomic Energy Act, 42 U.S.C. §2135(a), explicitly provides that nothing contained in that Act "shall relieve any person from the operation of" the basic antitrust statutes. Moreover, the whole purpose of Section 105c, 42 U.S.C. §2135(c), was to get this Commission to apply the antitrust laws to the electric utility industry. Indeed, Congress intended that proof of conditions running counter to the *policies* underlying the antitrust laws, "even where no actual violation of statute was made out, would warrant remedial license conditions under Section 105c."⁹⁹

The untenability of applicants' position on these questions is underscored by the Supreme Court's decision in *City of Lafayette v. Louisiana Power and Light Co.*, 435 U.S. 389 (1978), which held that municipalities which own and operate electric utility systems are not exempt from the antitrust laws unless they engage in anticompetitive conduct "pursuant to state policy to displace competition with regulation or monopoly public service."¹⁰⁰ It can hardly be expected that private utilities would be subject to a more lenient antitrust standard than public utilities. Yet, that would be the case if we were to adopt applicants' position.

Applicants have submitted to us, with our permission, the July 21, 1978 decision of the Securities and Exchange Commission in *American Electric Power Co.*, Admin. Proc. File No. 3-1476. In that case, the SEC approved an acquisition of a utility by a holding company under the Public Utility Holding Company Act. In its opinion, the SEC said "that competition in the electric utility industry operates only in somewhat limited areas . . . , " that retail competition is "contrary to the public interest," that competition for industrial sales "should not be encouraged" and that competition at the edges of utilities' territories is "rather esoteric" and "minimal."¹⁰¹ These remarks are inconsistent with some of our holdings in *Midland, supra*. The SEC opinion is not binding upon us and we adhere to our *Midland* decision.

⁹⁹ *Midland, supra* 6 NRC 892, at 908-09 and the authorities there cited.

¹⁰⁰ 435 U.S. 389 at 413 (1978).

¹⁰¹ See pp. 276-278, *supra*.

Moreover, the standards of Sections 10(b) (1) and 10 (c) (2) of the Public Utility Holding Company Act are whether the “acquisition will tend towards interlocking relations or the concentration of control of public-utility companies, of a kind or to an extent detrimental to the public interest or the interest of inventors or consumers” and whether the “acquisition will serve the public interest by tending towards the economical and efficient development of an integrated public-utility system.”¹⁰² We have already ruled in our decision denying a stay pending appeal, that such standards are critically different from those we must apply under Section 105c of the Atomic Energy Act. We there stated:¹⁰³

A recognized distinction exists between authority on the one hand to regulate an industry for the public convenience and necessity (which may require giving some consideration to antitrust policies) and, on the other, to enforce the antitrust laws directly. The Supreme Court has held that whether an activity “would serve the public interest” does not present the same issue as whether “the Sherman Act [has] been violated.” *United States v. Radio Corporation of America*. 358 U.S. 334, 350-52 (1959) (distinguishing, *inter alia*, *FCC v. RCA Communications, Inc.*, *supra*, and holding that FCC approval of certain activities by licensed broadcasters did not immunize them from the antitrust laws). Although we are not deciding this matter finally at this preliminary stage, we are inclined to come down on the side of those contending that the Commission is called upon to decide the latter question, not the former. It is to be recalled that this Commission administers no pervasive economic regulatory scheme. It is not authorized to control entry into the various electric power markets. It regulates no rates and approves no mergers. Power over such matters—the normal concomitant of authority for economic regulation “in the public interest”— has been left to others.

Finally, the SEC relied heavily on “the absence of conventional antitrust standards, such as restraint on competition, in the substantive provisions dealing with acquisitions” in the Public Utility Holding Company Act.¹⁰⁴ Under our statute, we must decide “whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws . . .” Thus, unlike the SEC, we are required to apply antitrust standards.

V. REFUSAL TO WHEEL

A. BY CEI

The Licensing Board found that CEI refused to wheel inexpensive power from the Power Authority of the State of New York (PASNY) to

¹⁰² *Id.*, p. 7.

¹⁰³ ALAB-385, *supra*, 5 NRC 621, at 633.

¹⁰⁴ See p. 276.

Cleveland.¹⁰⁵ As we said in analyzing a similar refusal to wheel in *Midland, supra*, at 1026, “unilateral refusals to deal by a firm with a dominant market position have regularly been held to constitute either ‘monopolization’ or an ‘attempt to monopolize’ in violation of Section 2 of the Sherman Act.” In *Otter Tail Power Co. v. United States*, 410 U.S. 366, at 377 (1973), the Supreme Court stated:

The District Court determined that Otter Tail has ‘a strategic dominance in the transmission of power in most of its service area’ and that it used this dominance to foreclose potential entrants into the retail area from obtaining electric power from outside sources of supply. 331 F Supp, at 60. Use of monopoly power ‘to destroy threatened competition’ is a violation of the ‘attempt to monopolize’ clause of Section 2 of the Sherman Act. *Lorain Journal v. United States*, 342 US 143, 154, 96 L Ed 162, 72 S Ct 181; *Eastman Kodak Co. v. Southern Photo Materials Co.*, 273 US 359, 375, 71 L Ed 684, 47 S Ct 400.

The Licensing Board found, and it is not disputed, that Cleveland’s service area is completely surrounded by CEI and that, therefore, “[a]ccess to power supply sources outside its own system is possible only over CEI’s transmission system.”¹⁰⁶ The Licensing Board also found that “[i]t would be impractical for Cleveland to construct transmission lines across CEI territory”¹⁰⁷ and that finding is in accord with the weight of the evidence. However, even if it had been practical for Cleveland to do so, that would not have made CEI’s refusal of access to its transmission lines lawful. As Judge Charles Clark, speaking for the Court in *Gamco, Inc. v. Providence Fruit & Produce Bldg.*, 194 F.2d 484, 487 (1st Cir.) *cert. denied*, 344 U.S. 817 (1952), wrote:

Defendants contend, however, that a discriminatory policy in regard to the lessees in the Produce Building can never amount to monopoly because other alternative selling sites are available. The short answer to this is that a monopolized resource seldom lacks substitutes; alternatives will not excuse monopolization. . . . To impose upon plaintiff the additional expenses of developing another site, attracting buyers, and transshipping his fruit and produce by truck is clearly to extract a monopolist’s advantage.

Accord, National Screen Service Corp. v. Poster Exchange, Inc., 305 F.2d 647, 652 (5th Cir. 1962). It is thus clear that CEI’s refusal to wheel PASNY power to Cleveland was a violation of Section 2 of the Sherman Act.¹⁰⁸

¹⁰⁵ 5 NRC at 173-74.

¹⁰⁶ Finding 34, 5 NRC at 167.

¹⁰⁷ Finding 60, *id.* at 175.

¹⁰⁸ We need not dwell on the question of whether CEI’s vice here was monopolization or attempt to monopolize. It is true that, to prove an attempt, you must show “a conscious desire or

(Continued on next page)

CEI defends its refusal to wheel PASNY power on the ground that it was not available for purchase by CEI and that a company need not permit its property to be used by a competitor to obtain a resource which the refusing company cannot itself obtain. But the cases cited for this proposition by CEI (*United States v. Terminal Railroad Association*, 224 U.S. 383 (1912); *United States v. Associated Press*, 326 U.S. 1 (1945); *Gamco, supra*; and *DeFilippo v. Ford Motor Co.*, 516 F.2d 1313, 1320-21 (3rd Cir.) *cert. denied*, 423 U.S. 912 (1975)), simply do not establish it. Indeed, Cleveland's ability to obtain cheap hydroelectric power for its customers, which could not be purchased by CEI because it is a private utility, would be a public benefit which the antitrust laws should protect. We fail to see how it justifies a refusal to wheel. In holding that a refusal to make monopoly facilities available to a competitor was not justified on the ground that the competitor had lower costs, the Court in *American Federation of Tobacco Growers v. Neal*, 183 F.2d 869, 872 (4th Cir. 1950) said:

A restraint of trade involving the elimination of a competitor is to be deemed reasonable or unreasonable on the basis of matters affecting the trade itself, not on the relative cost of doing business of the persons engaged in competition. One of the great values of competition is that it encourages those who compete to reduce costs and lower prices and thus pass on the saving to the public; and the bane of monopoly is that it perpetuates high costs and uneconomic practice at the expense of the public.

The Licensing Board also found that, in 1975, Cleveland would have been able to obtain seasonal power from Buckeye Power, Inc.¹⁰⁹ and bulk power from the cities of Orrville, Ohio, Richmond, and Indiana, but that "CEI has not agreed to wheel this power."¹¹⁰ CEI claims and the evidence shows that CEI did not refuse to wheel power from Buckeye. CEI repeatedly told Cleveland in writing that it was willing to wheel to Cleveland "electric energy as to which there is no legal or conspiratorial impediment which would

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specific intent to monopolize." *Midland, supra*, at 1029. But this can be inferred from "[e]vidence of anticompetitive actions without legitimate business purpose, i.e., 'predatory conduct' . . ." *Ibid*. In the case at bar, there was ample evidence of predatory conduct by CEI against Cleveland. See the opinion below, 5 NRC at 167-73 and 175-76.

¹⁰⁹ Buckeye Power, Inc. is a corporation owned and controlled by the 28 rural electric cooperatives operating in Ohio. It is their exclusive wholesale electric power supplier. It transmits power from the Cardinal generating plant near Brilliant, Ohio to its member cooperatives. It does this by means of wheeling agreements with six private utilities in Ohio and a buy/sell agreement between Ohio Power Company and Ohio Edison Company which, in effect, transmits Buckeye Power to the cooperatives in Ohio Edison's territory. See Staff Exhs. 84 and 190; Findings 118 and 119, 5 NRC 133, *supra*, at 196-97.

¹¹⁰ Finding 59, 5 NRC 133, at 174.

prevent this Company making a like purchase at a like price.”¹¹¹ In a December 3, 1975 letter to Cleveland from CEI’s outside counsel,¹¹² different phraseology was used. CEI agreed to wheel power to the city on terms similar to those suggested by the city, “provided only that the wheeling was from a market equally open to” CEI. The letter suggested that the schedule provide for wheeling only where the power “would have been available to The Cleveland Electric Illumination Company on equal terms and conditions.” Such a schedule was actually sent to Cleveland for its approval on December 29, 1975.¹¹³

The problem with CEI’s position is that its willingness to wheel Buckeye power to Cleveland was subject to the acceptance by Cleveland of a condition which, as we have shown, violated the antitrust laws. As CEI had no right to insist on this condition, its conduct was tantamount to a refusal to wheel and was as much a violation of Section 2 of the Sherman Act as CEI’s refusal to wheel PASNY power.

CEI contends that this condition only applies to government-owned preference power (such as that from PASNY) and would have permitted the wheeling to Cleveland of power from municipal utilities such as Richmond and Orrville and rural electric cooperatives such as Buckeye. Therefore, the argument goes, it was a meaningless appendage to the service schedule, insofar as the wheeling of power from those sources was concerned. The answer to that is twofold.

First, it is not at all clear from the written correspondence in evidence that this condition had no application to Buckeye power. On September 15, 1975, CEI’s general attorney, Mr. Hauser, wrote to Buckeye and asked “whether there are any legal or contractual impediments to the purchase of Buckeye Power by The Cleveland Electric Illuminating Company for its own use under arrangements similar to those suggested by the City of Cleveland.”¹¹⁴ On October 14 and 30, 1975, Mr. Hauser wrote Cleveland’s attorney, Mr. Hart, that he had still not received a reply to his September 15th letter to Buckeye but, in the October 30th letter, he responded positively to Hart’s suggestion that he meet with Hart and representatives of Buckeye for the purpose of resolving CEI’s doubts on this subject.¹¹⁵ No such meeting ever took place because the Buckeye officials claimed that they had more important business to attend to.¹¹⁶ But the important point is that CEI never indicated that it was

¹¹¹ Applicants’ Exh. 75; *accord*, Applicants’ Exhs. 78, 84, 94.

¹¹² Applicants’ Exh. 96.

¹¹³ Applicants’ Exh. 97. See especially Section 2.1(v) of the draft transmission service agreement.

¹¹⁴ Applicants’ Exh. 81.

¹¹⁵ Applicants’ Exhs. 84 and 94.

¹¹⁶ Tr. 4944-45.

satisfied that Buckeye power met the terms of the condition on which it insisted.¹¹⁷ Although Cleveland was satisfied that Buckeye power met the condition,¹¹⁸ CEI was not. Thus, the condition served as a convenient excuse for CEI not to wheel the power, at least until its doubts about the availability of Buckeye power to itself could be completely allayed—something which in fact did not happen by the time of the hearings on this subject.

Secondly, even had CEI satisfied itself that Buckeye power would be available to CEI “on equal terms and conditions,” and made that satisfaction clear to Cleveland, the city could not reasonably have been expected to sign an agreement containing the illegal condition. This is because acceptance of that condition, whether or not a legal waiver of its rights for all time, was bound to have some sort of detrimental effect on Cleveland’s ability to obtain wheeling for PASNY power in the future.

Cleveland’s request to CEI to wheel power from Richmond was made orally and answered orally but the response was the same as in the case of Buckeye power.¹¹⁹ Cleveland did not make a request to CEI to wheel power from Orrville,¹²⁰ but, as that power also became available in 1975,¹²¹ we must assume that CEI’s answer would have been the same as it was with respect to the Buckeye and Richmond power.¹²²

B. By Ohio Edison

The Licensing Board found that Ohio Edison refused to wheel Buckeye power from Ohio Power Company’s Cardinal plant to the Buckeye member cooperatives located in Ohio Edison’s service area.¹²³ Instead, the Board found, Ohio Edison insisted on a buy/sell arrangement whereby it purchased the power from Ohio Power and sold an equivalent amount of power to the cooperatives. Buckeye finally acceded to such an arrangement on June 20, 1968, six and two-thirds months after the power became available for delivery.¹²⁴ The Board concluded that the refusal to wheel was inconsistent with the antitrust laws.¹²⁵

We can perceive no functional difference between a buy/sell arrangement and a wheeling agreement. The only things that must be looked at, from an

¹¹⁷ That it was not CEI’s fault that this meeting never took place is irrelevant. The condition CEI insisted on was unlawful under the antitrust laws and CEI can get no credit for diligently attempting to see if it was met, if this meant avoiding or delaying the wheeling of the power.

¹¹⁸ Tr. 4923, 4925-26.

¹¹⁹ Tr. 4713-14.

¹²⁰ Tr. 4713.

¹²¹ Tr. 4712.

¹²² See *Midland*, *supra* at 1038.

¹²³ Findings 118-20, 5 NRC 133, at 196-97.

¹²⁴ *Ibid.*

¹²⁵ Finding 125, *id.* at 198.

antitrust point of view, are the terms of the specific agreements. Thus, Ohio Edison may not be faulted for insisting on a buy/sell contract. But it may be faulted if the terms of the contract it insisted on were inconsistent with the antitrust laws. The contract finally concluded for the supply by Ohio Edison of Buckeye power to the cooperatives (actually, it was a buy/sell agreement between Ohio Power Company and Ohio Edison) restricted the resale of the power to consumers in the State of Ohio or consumption by the cooperatives themselves in the operation of their facilities and systems.¹²⁶ Thus, it effectively foreclosed competition by the cooperatives in the wholesale market and prevented them from dealing with utilities other than Ohio Edison in the coordination services market. For the reasons stated in Section IIIA of this opinion, *supra*, we have held that these and similar restrictions were illegal *per se* under Section 1 of the Sherman Act. Thus, the buy/sell agreement and Ohio Edison's refusal to supply power from Buckeye to the cooperatives other than under its terms were inconsistent with the antitrust laws.

In findings 118 and 119, 5 NRC at 196, the Licensing Board implied that Ohio Edison acted unlawfully by refusing to deliver Buckeye power to the cooperatives until June 20, 1968, although it was available for delivery in January 1968. The implication seems to be, as the staff says in its Brief at p. 127, that the vice in Ohio Edison's conduct was that it eliminated Buckeye as a source of bulk power supply for the cooperatives for a period of at least six months. If that is the essence of the finding, we cannot endorse it. Buckeye power was not delivered to the cooperatives until August 1970 because they had to give Ohio Edison two years notice of cancellation of their bulk power contracts with Ohio Edison.¹²⁷ But the record shows that Ohio Edison was willing to supply the cooperatives with Buckeye power under a buy/sell arrangement as early as 1965, in plenty of time for the cooperatives to give two years' notice of cancellation and get delivery by January 1968.¹²⁸ Thus, Ohio Edison may not be criticized for causing a six-month delay in the delivery of Buckeye power; its fault was in insisting on an unlawful contract term as the price for such delivery.

The Licensing Board found: "Another effect of the refusal to wheel Buckeye Power may have been to prevent Newton Falls from purchasing wholesale from Buckeye in 1973."¹²⁹ William Craig, the City Manager of Newton Falls, wrote to Howard Cummins, executive manager of Buckeye, asking him if Buckeye would be interested in selling bulk power to his city.¹³⁰ He said that Ohio Edison "has for various reasons, not been enthusiastic

¹²⁶ Staff Exh. 84, p. 1.

¹²⁷ Exh. DJ-616.

¹²⁸ See Exh. DJ-532.

¹²⁹ Finding 121, 5 NRC 133, at 197. Citations omitted.

¹³⁰ Staff Exh. 210.

about the prospect” of the city buying power to supplement its own generation.¹³¹ Cummins replied in a letter ¹³² which stated in part:

[T]he city of Newton Falls is far removed from the service of any of the Buckeye member cooperatives. Because of this and because of our limited arrangements for the transmission of power in the service area of the Ohio Edison Company, we do not foresee the possibility of any of our member cooperatives being in a position to sell supplemental power and energy to the city of Newton Falls.

Cummins was obviously referring to the buy/sell agreement between Ohio Power and Ohio Edison and to the restriction in that agreement which prevented the cooperatives from re-selling any of the power delivered to them by Ohio Edison. If not for that, it might have been expected that Ohio Edison would be willing to transfer power from a cooperative to Newton Falls by either wheeling or a buy/sell agreement. Thus, it was not the refusal to wheel but the unlawful restriction against resale in the buy/sell agreement which prevented Newton Falls from purchasing Buckeye power in 1973.

It is true that Mr. Craig never contacted any of Buckeye's member cooperatives to request bulk power from them.¹³³ But he testified that he did not do so because, on the basis of Cummins' letter (Staff Exhibit 84), such a course of action “seemed to be fruitless.”¹³⁴ We find that Craig's assessment of the situation was reasonable and that an approach to a cooperative would indeed have been fruitless. Applicants assert in their Brief (at p. 230) that “the documents and the testimony show conclusively that the municipality never made any ... request” of Ohio Edison to wheel Buckeye power to Newton Falls. To the same effect, see note 259 at p. 231 of their Brief. The evidence cited does not show this at all, let alone “conclusively.” However, it is probably safe to assume that, if Newton Falls had made such a request to Ohio Edison, it would have been brought out at the hearing. But this does not help Ohio Edison. Staff Exhibit 84 shows that such a request would have been futile. And the antitrust laws do not require the making of obviously futile requests. *Midland, supra*, 6 NRC at 1038-41.

Nothing need be said about the Licensing Board's findings concerning other instances of refusals to wheel by Ohio Edison other than what we have already said with respect to the findings re the cooperatives and Newton Falls.

C. By Toledo Edison

The Licensing Board's finding that Toledo Edison refused to wheel power

¹³¹ *Ibid.*

¹³² Staff Exh. 84, p. 1.

¹³³ Tr. 2953

¹³⁴ *Ibid.*

to the city of Napoleon¹³⁵ is based largely on its judgment as to the relative credibility of witnesses Lewis and Moran. “[W]here the credibility of evidence turns on the demeanor of a witness, we give the judgment of the trial board which saw and heard his testimony particularly great deference.” *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 404 (1976). We therefore accept the judgment of the trier of fact as to this issue.

VI. CAPCO MEMBERSHIP

A. Reserve Requirements

A utility applying for membership in the CAPCO pool has to agree to carry a specific amount of generating capacity, in excess of peak load, as “reserves.”¹³⁶ The amount of reserves required would be determined on the basis of the “P/N formula.”¹³⁷ The Licensing Board found that this would require small systems “to sacrifice economies of scale in the production of electricity in order to qualify for pool membership without carrying excessive reserves.”¹³⁸ But it did “not condemn the P/N formula as inherently anticompetitive” nor did it “hold that the principal purpose of its design was to exclude competitors.”¹³⁹ Instead, the Board condemned “Applicants’ deliberate and knowing recognition of the effect the application of this formula would have on generating entities at the time of entrance into the pool, and their agreement to deviate from the formula for member companies but to impose rigid formula applications on municipalities in the event municipalities cracked the CAPCO entrance barrier.”¹⁴⁰ And it concluded:¹⁴¹

If membership in the CAPCO pool is regarded as necessary to the competitive viability of electric entities in the CCCT, then the knowing erection of entry barriers through the imposition of the PN formula violates the antitrust laws. This conclusion follows in light of our earlier findings with respect to Applicants’ dominance over generation and transmission and the furnishing of bulk power services and bulk sales at wholesale within the CCCT.

Applicants take exception to these findings.

¹³⁵ Finding 172, 5 NRC, *supra*, at 218.

¹³⁶ We use the definition of reserves given in *Midland*, *supra*, 6 NRC at 902 n. 21. “Reserves” means extra generating capacity maintained to generate power in the event of unexpected demand for power or loss of a generating facility or unit or scheduled outage of a generating facility or unit.”

¹³⁷ The P/N formula is explained at pp. 334-336., *infra*.

¹³⁸ Finding 212, 5 NRC, *supra* at 236.

¹³⁹ Finding 214, *id.* at 237. Moreover, it stated: “We are persuaded by Applicants’ testimony that the formula represented an attempt to distribute in a rational fashion individual reserve requirements necessary for the operation of a wide area pool.” *Ibid.*

¹⁴⁰ *Ibid.*

¹⁴¹ *Ibid.*

The P/N formula represents the ratio of days a pool member can be expected to provide back-up energy to other pool members (positive days—"P") to the days a pool member can be expected to require back-up energy from other members (negative days—"N"). The number of positive and negative days is determined by comparing a member's historical peak load with its projected generating capacity for that day.¹⁴² A system's generating capacity is the electricity produced from the sum of all its generating units less scheduled maintenance and forced outages. Scheduled maintenance outage rates are based on planned maintenance programs. Forced outages are calculated by determining the probability that on any one day a generating unit or units will be out of service.¹⁴³ The purpose of the formula is to make each party's expected ability to provide help to others roughly proportional to that party's need for help from the others.¹⁴⁴ The formula also takes into account the characteristics of the utilities that affect reliability, such as operating philosophies, existing generating equipment and interconnection arrangements with outside parties.¹⁴⁵

The P/N formula requires less reserve capacity for systems with numerous, smaller units than it does for systems with fewer and larger units. Consider this illustration. Suppose two systems each have peak loads of 100 MW with 20 MW reserves. One system has twelve 10 MW generating units. The other has one 100 MW unit and one 20 MW unit. It is obvious that the probability that the second system's large unit will be out of service, leaving the system without enough electricity to meet its peak load (a negative day), is greater than the probability that the first system will simultaneously lose three small units and be unable to meet its peak load. But the system that elects to reduce its reserve requirement by installing many small generating units foregoes the economies of scale produced by large units.¹⁴⁶ Thus, if a utility is required to satisfy the P/N formula in order to be admitted to a pool, it can only gain pool membership by sacrificing one of the many benefits that pool membership should bring—the ability to combine economies of scale with lower reserve requirements.¹⁴⁷

Applicants defend the P/N formula by distinguishing it from the reserve sharing formula faulted on antitrust grounds by the Appeal Board in *Midland*. They argue:¹⁴⁸

¹⁴² The CAPCO pool uses a 252 day year because system peaks on certain days are so low that a member could supply them even with scheduled or forced outages. The projected loads are based on analysis of historical data.

¹⁴³ See generally Applicants' Exh. 124.

¹⁴⁴ Tr. 9252-53.

¹⁴⁵ Tr. 9341.

¹⁴⁶ See *Midland*, *supra*, 6 NRC at 999.

¹⁴⁷ This comes about because a pool member can draw power from a greater number of larger generating units than it could afford to do if it were operating in isolation.

¹⁴⁸ Applicants' Supplemental Brief, p. 39 n.33.

Unlike the evidence in the [*Midland*] proceeding, calculations under the P/N formula do *not* penalize the last system to join a large interconnected network . . . , because the P/N ratio is calculated for each individual member of the pool *under the hypothesis that each system is operating in isolation*. . . . Thus, while the CAPCO pool calculates the total generating needs of all members on a one-system basis, *allocation* of that generating capacity is on the assumption that no pool exists. Thus, a later joining member suffers no penalty whatsoever vis-a-vis existing pool participating. [Emphasis in the original; the omissions in the quotation are citations.]

The applicant in *Midland* calculated reserves using the “Holland formula.” Under that formula, a utility had to carry reserves equal to “the sum of (1) one-half the generating capacity of its largest unit, (2) one-fourth the capacity of its second largest unit and (3) 10 percent of its annual peak load.”¹⁴⁹ It is true that reserve calculations under the P/N formula are entirely different from calculations under the Holland formula. But both methods of calculating reserves penalize a small system that has taken advantage of economies of scale by installing fewer and larger generating units.¹⁵⁰ The P/N formula is difficult for systems just becoming members of the pool because they have not yet had the opportunity to acquire ownership interests in a large number of pool generating units, as the applicants have already done.

There is no dispute that the P/N formula tends to force a small system to forego economies of scale by installing more and smaller units. Applicants’ witness Firestone admitted as much.¹⁵¹ We held in *Midland* that it is unreasonable for a large utility to refuse to coordinate with small utilities except on condition that they share reserves on the basis of a formula which “discourages the small utilities from installing larger, more economical generating units.”¹⁵² We said that such a policy

definitely has anticompetitive consequences. These affect the wholesale market directly, because they increase the probability that small utilities will turn to [the large utility] for wholesale power purchases rather than install their own additional generation. And it has direct adverse consequences in the retail market as well, in location where there is door-to-door competition between [the large] and the small utilities¹⁵³ Of course, as the smaller competitors’ production costs are forced up, they become correspondingly less useful as “yardsticks” for measuring [the

¹⁴⁹ *Midland*, *supra*, 6 NRC at 1065.

¹⁵⁰ With respect to the Holland formula, see *id.* at 1075.

¹⁵¹ Tr. 9325-26.

¹⁵² 6 NRC at 1065 and 1078-79.

¹⁵³ In our case, there is such competition between CEI and Cleveland.

large utility's] own efficiency.¹⁵⁴

This is as true where five large utilities have formed a power pool and refuse membership to small utilities unless they meet such a reserve formula. Indeed, in this case, we have the element of conspiracy which makes such conduct a violation of Section 1 of the Sherman Act.

In his written testimony, Mr. Firestone made a hypothetical showing of the reserves that would have to be carried in three examples of coordination between a large and small utility if reserves were computed alternatively as an equal percentage of each system's peak load¹⁵⁵ or using the P/N formula. In each case, the small system had a total installed capacity of 120 MW and a peak load of 100 MW, whereas the large system had a total installed capacity of 1,200 MW and a peak load of 1,000 MW. For each system, the percent reserve was thus 20 percent. The "very reliable system" (small or large) was assumed to have a number of generating units ranging in capacity from 10 to 15 percent of peak load. The "very unreliable system" (small or large) assumes two units with a capacity of 50 percent of peak load and one unit with a capacity of 20 percent of peak load. Thus, reliability was defined as a function of the number of units in the system and their size in relation to the system's peak load. Mr. Firestone postulated a combination of (1) a very reliable large system with a very reliable small system, (2) a very reliable large system with a very unreliable small system, and (3) a very unreliable large system with a very reliable small system.¹⁵⁶ The amount of reserves each system in each combination would be responsible for, as determined by the two allocation methods, is shown in the following table:¹⁵⁷

	Equal Percentage Method	P/N Method
very reliable large plus very reliable small		
large system	200 MW	199 MW
small system	<u>20 MW</u>	<u>21 MW</u>
Total	220 MW	220 MW

¹⁵⁴ *Midland, supra*, 6 NRC at 1079.

¹⁵⁵ "Under this system, the amount of total reserve and the appropriate percentage of peak load are calculated in this manner: Assume that utilities with peak loads of 50 MW, 100 MW, and 150 MW respectively agree to share reserves on an equalized percentage basis. They would first determine the amount of reserves that three systems combined must carry to meet their combined peak load of 300 MW. Assume that this amount is found to be 60 MW, which is 20 percent of the combined peak load. Each system would then be required to maintain a reserve equal to that percentage of its peak load. The utility with 50 MW peak load would thus be responsible for 10 MW, the one with a 100 MW peak for 20 MW and the one with 150 MW for 30 MW of reserves." *Midland, supra*, at 1065, n. 631 (citations omitted).

¹⁵⁶ Applicants' Exh. 122, pp. 25-26.

¹⁵⁷ *Id.*, p. 26.

	Equal Percentage Method	P/N Method
very reliable large plus very unreliable small		
large system	200 MW	132 MW
small system	20 MW	88 MW
Total	<u>220 MW</u>	<u>220 MW</u>
very unreliable large plus very reliable small		
large system	200 MW	218 MW
small system	<u>20 MW</u>	<u>2 MW</u>
Total	<u>220 MW</u>	<u>220 MW</u>

Analysis of Mr. Firestone's hypothetical shows that the P/N formula requires a small system to carry disproportionately higher reserves than a large system. Thus, an unreliable small system has to carry 440 percent more reserves under the P/N formula (88 MW) than under the equal percentage method (20 MW). But an unreliable large system only has to carry 9 percent more reserves under the P/N formula (218 MW) than under the equal percentage method (200 MW). Thus, we are forced to conclude that the P/N formula was a significant obstacle to CAPCO membership for the relatively small municipal utilities which wanted to join it. And imposition of the formula on small applicants for membership was not necessary to ensure the reliability of the CAPCO pool because a small system, even if it needs help, will need very little help in absolute terms (*i.e.*, megawatts), as opposed to the kind of help a large system might need.¹⁵⁸

Not only did the P/N formula operate as a major obstacle to the entry of small utilities into CAPCO but the members of CAPCO knew that it would and wanted it to function that way. Notes from an early planning meeting in 1967 show that CAPCO members realized that allocating reserves with a probability formula (such as P/N) would force Pennsylvania Power to carry high reserves because it had a few large generating units. Another method of calculating reserves was suggested, but the utilities feared that non-members might ask for similar treatment. Thus, the notes state:¹⁵⁹

There was considerable discussion about the fact that if we apply the probability technique directly to Pennsylvania [Power] in the same manner as which it has been used in the CAPCO determinations, Pennsylvania would have to assume rather large reserve responsibilities because their present units are large compared to their system size. Ohio Edison feels that this is not proper in that the sizes of units which have been installed in Pennsylvania have been influenced by system needs. Therefore

¹⁵⁸ Tr. 9315-16.

¹⁵⁹ Exh. C-54, pp. 2-3.

in our computations we have assumed that each time a unit was installed in Pennsylvania, it was paired up with a similar unit in Edison's System and the assumption was made that these would be treated as two units with mutual back up provisions. The effect of this assumption is to divide each of the Pennsylvania units into two pieces with resultant lower reserve responsibility. For time period A the reserve responsibility of about 30 percent as shown by the calculation would have been in excess of 50 percent if this technique had not been used.

There was considerable discussion as to whether applying this technique to Pennsylvania would tend to create a precedent so that sometime in the future a small isolated system which wanted to join the pool might feel they should be entitled to similar treatment. [Emphasis added]

What is more, notes from a June 5, 1967 meeting between Ohio Edison, CEI, Toledo Edison and Duquesne Light show that one of the applicants' motives for adopting a formula requirement for reserves was that it would provide a useful excuse for refusing pool membership to municipalities. The notes reveal that Mr. Dissmeyer, an Ohio Edison representative,

pointed out that a [reserve] formula is desirable in the dealings of the companies with municipal agencies such as the city of Cleveland. He said that if the parties used an arbitrary approach, a municipality can come in, as Crisp County did with Georgia Power, and demand preferential treatment. On the other hand, if there is a formula the pool companies can insist that the municipality receive the treatment accorded by the formula.¹⁶⁰

Finally, although the applicants insisted that municipalities comply with the P/N formula as a precondition of pool membership, the evidence shows that they did not apply the formula to themselves when the pool was formed but instead negotiated an allocation of capacity among themselves on what they sometimes referred to as an "arbitrary" basis.¹⁶¹ Thus, their treatment of municipalities was discriminatory as well as unreasonable, and, as the Licensing Board found,¹⁶² it seriously undermined the municipalities' competitive position.

B. Denial of Membership to Municipalities

1. Generally

The Licensing Board found that the applicants acted collectively to deny membership in the CAPCO power pool to municipalities.¹⁶³ It held that this denial constituted both monopolization and a group boycott, in violation of

¹⁶⁰ Exh. C-48 p. 7.

¹⁶¹ Tr. 9424-27, 8602-03; Exhs. C-30, C-31, C-44 pp. 12-23, C-48 pp. 1-8, C-49 pp. 1-3 and 9-13.

¹⁶² Findings 214 and 215, 5 NRC at 237.

¹⁶³ Findings 183-89, 5 NRC at 223-27.

Sections 1 and 2 of the Sherman Act.¹⁶⁴ For the reasons stated by the Licensing Board, we agree. Denial of CAPCO membership constituted a group boycott or concerted refusal to deal despite the fact that the CAPCO agreements did not prevent some of the applicants from supplying wholesale power to some municipalities and CEI from supplying emergency power to Cleveland, albeit grudgingly and on oppressive terms.¹⁶⁵ This is no different from the situation in *Klor's v. Broadway-Hale Stores, Inc.*, 359 U.S. 207, at 208 (1959), where the defendants conspired "either not to sell to Klor's or to sell to it only at discriminatory prices and highly unfavorable terms." (Emphasis added). That conspiracy was nevertheless held to be a group boycott. "[T]he fact that an agreement to restrain trade does not inhibit competition in all of the objects of that trade cannot save it from the condemnation of the Sherman Act." *Associated Press v. United States*, 326 U.S. 1, 17 (1945).

Applicants argue that the exclusion of municipalities at the time that CAPCO was formed "was not due to any sinister motive, as the Licensing Board seems to suggest"; but rather because Duquesne Light Company was in a hurry to conclude an agreement on the pool prior to its October 25, 1967 deadline for ordering a new generating unit.¹⁶⁶ The testimony of Philip Fleger, who was chairman and chief executive officer of Duquesne at the time the pool was formed,¹⁶⁷ is cited as support for this contention. We are, however, unable to credit this testimony. In the first place, it is inconsistent with Fleger's immediately prior testimony that he "gave absolutely no consideration to the inclusion of other parties to the pool" in the period leading up to its formation.¹⁶⁸ The need to meet the October 25th deadline could not have been a reason for rejecting a possible course of action which was not even considered.¹⁶⁹ Secondly, the summary rejection by all CAPCO members of Pitcairn's December 1967 application for admission to the pool,¹⁷⁰ as well as the fact that not a single municipality was admitted thereafter, indicates to our satisfaction that the October 25, 1967 deadline had nothing to do with the original decision not to include municipalities. Had that decision been dictated by a time constraint, it could and should have been changed when the time constraint was no longer present.

¹⁶⁴ Finding 189, *id.* at 227.

¹⁶⁵ See findings 34-56, *id.*, at 167-73.

¹⁶⁶ Brief, p. 21.

¹⁶⁷ Tr. 8617, 8619-21.

¹⁶⁸ Tr. 8619.

¹⁶⁹ This is not to say that we accept his testimony that admission of municipalities was not considered, for documentary evidence of what was discussed at the meetings leading to the formation of CAPCO indicates that it was considered. See Exh. C-49, p. 7; Exh. C-50, p. 4; Exh. C-51, p. 4; Exh. C-48, p. 7; Exh. C-54, pp. 2-3. It simply means that we have difficulty believing testimony which is internally inconsistent.

¹⁷⁰ See Staff Exhs. 1-7, 9 and 10.

In defense of their decision to exclude municipalities, the applicants, after alluding to the fact that most of the municipal systems in their areas did not have any generating capacity of their own,¹⁷¹ stated:¹⁷²

The remaining 12 systems, while having some self-generation, were, with the possible exception of Cleveland, all of a size to make their participation economically infeasible (Williams 10365(2-25); and see C-51, p. 4). [Footnote omitted].

There are three answers to this argument.

The first is that we have not found any evidence in the record (and applicants cite none) which shows that the decision to exclude municipalities made at the formation of CAPCO was for the reason that their size made it “economically infeasible” for them to participate.¹⁷³ The evidence that we do have indicates that this was not the reason for their exclusion. Mr. Lindseth, former Chairman of the Board of CEI, after testifying as to the making of the decision not to include any systems other than corporate utility companies as members, gave the following answers to the following questions:¹⁷⁴

Q. If you recall, on what basis was that decision reached?

A. Well, I do not remember the details of the discussion or consideration, but CAPCO was an organization of utility companies, and hence should be an organization of utility companies.

Q. Was there any additional problem that was envisioned if municipal systems were allowed to participate in CAPCO?

A. Well, I don't remember any discussion on that point.

Moreover, Mr. Mansfield, who was President of Ohio Edison Company and Chairman of Pennsylvania Power Company in 1967 (the year of CAPCO's formation),¹⁷⁵ testified that it was his view in the late 1960's “that private utilities should not coordinate with the publicly owned utilities because this would give the publicly owned utilities an unfair advantage to have both access to economies of scale and also the economies of public financing.”¹⁷⁶ The “unfair advantage” referred to is obviously a competitive advantage.

The second answer to applicants' argument of economic infeasibility is that concerted refusals to deal are illegal *per se* under Section 1 of the Sherman Act and “have not been saved by allegations that they were reasonable in the

¹⁷¹ We leave for another day the question of whether a utility with nothing but a distribution system may be excluded for that reason from a power pool. It is not necessary to decide that here because applicants excluded all municipalities, even those with generating units of their own.

¹⁷² Brief, p. 17.

¹⁷³ See our discussion of Exh. C-51, p. 4 at pp. 344-345, *infra*.

¹⁷⁴ Exh. DJ-568 at p. 28.

¹⁷⁵ Staff Exh. 8; Exh. DJ-572 at 5.

¹⁷⁶ Exh. DJ-572, pp. 10-11.

specific circumstances.” *Klor’s v. Broadway-Hale Stores, Inc.*, 359 U.S. 207, 212 (1959); accord, *United States v. General Motors Corp.*, 384 U.S. 127, 146 (1966); *Radiant Burners v. Peoples Gas Light and Coke Co.*, 364 U.S. 656 (1961); *Fashion Originators’ Guild v. FTC*, 312 U.S. 457, 467-68 (1941). “Exclusion of traders from the market by means of combination or conspiracy is so inconsistent with the free-market principles embodied in the Sherman Act that it is not to be saved by reference to the need for preserving the collaborators’ profit margins or their system for distributing automobiles . . .” *United States v. General Motors Corp.*, *loc cit. supra*.

Applicants perforce admit that there is a *per se* rule for group boycotts but contend that its application depends “on a showing of exclusionary intent as the principal motivation for taking collective action,” citing *De Filippo v. Ford Motor Co.*, 516 F.2d 1313, 1318 (3rd Cir.) *cert denied*, 423 U.S. 912 (1975). *E.A. McQuade Tours, Inc., v. Consolidated Air Tour Manual Committee*, 467 F.2d 178, 187 (5th Cir. 1972), *cert denied*, 409 U.S. 1109 (1973), and *Joseph E. Seagram & Sons v. Hawaiian Oke & Liquors, Ltd.*, 416 F.2d 71, 76 (9th Cir. 1969), *cert denied*, 396 U.S. 1062 (1970).¹⁷⁷ We disagree.

The conduct complained of in *De Filippo* was not a group boycott at all and the Court so found, stating (516 F.2d at 1320):

Plaintiffs were not deprived of the opportunity to become a Ford dealer or to purchase products on the same basis as other dealers. They were deprived simply of the benefits of a contract offered to them at special terms.

Similarly, *Seagram* was not a true group boycott case. It was simply a change of an exclusive distributorship within a given territory from one company to another by two whiskey manufacturers acting in concert. The Court stressed that “a manufacturer or supplier has a legitimate interest in the quality, competence, and stability of his distributors,” that “the use of exclusive distributorship is not, without more, invalid under the antitrust laws,” that “a supplier who becomes dissatisfied with an existing distributor also has a legitimate interest in seeing that any new distributor to which it might turn would be viable,” and that, if it is to be viable, a liquor “distributor needs a well rounded group of lines . . .” which a single manufacturer would not have been able to supply. 416 F.2d at 80.

McQuade does seem to be a group boycott case. But there the Court relied heavily on the fact that neither the defendant Committee “not its member airlines are in direct competition with McQuade in the wholesale tour market” and on the lack of any evidence that the Committee “combined or conspired with McQuade’s natural competitive enemies, the other tour operators . . .” 467 F.2d at 187-88.

¹⁷⁷ Brief, p. 107 n. 126.

A recent decision similar in its holding to *McQuade* is *Smith v. Pro Football, Inc.*, 593 F.2d 1173 (D.C. Cir. 1978). There, Judge Wilkey, writing for a unanimous court as to this point, stated:¹⁷⁸

The classic "group boycott" is a concerted attempt by a group of competitors at one level to protect themselves from competition from non-group members who seek to compete at that level. Typically, the boycotting group combines to deprive would-be competitors of a trade relationship which they need in order to enter (or survive in) the level wherein the group operates. The group may accomplish its exclusionary purpose by inducing suppliers not to sell to potential competitors, by inducing customers not to buy from them, or, in some cases, by refusing to deal with would-be competitors themselves. In each instance, however, the hallmark of the "group boycott" is the effort of competitors to "barricade themselves from competition at their own level." It is this purpose to exclude competition that has characterized the Supreme Court's decisions invoking the group boycott *per se* rule.

The Court went on to hold that the National Football League player draft was not unlawful *per se* as a group boycott because the boycotted plaintiff (a drafted rookie football player) was not a competitor of the teams who refused to deal with him.

We are reluctant to seriously qualify a rule of law laid down by the Supreme Court on the basis of decisions of inferior (albeit appellate) courts. However, even accepting *arguendo* the above holdings of *McQuade* and *Smith*, applicants' exclusion of municipalities from CAPCO was still illegal *per se* as a group boycott. That is because there was actual competition in the retail market between Cleveland and CEI and Painesville and CEI¹⁷⁹ and there are extensive findings throughout the opinion below, supported by the evidence, of potential competition between the various applicants and municipalities in all three relevant markets.

Finally, applicants misstate even the *dictum* of the three cases they cite. Those decisions do not say that there must be a showing that exclusionary intent was the *principal* motivation for the collective action but only that there must be evidence of *some* exclusionary or anticompetitive intent. *McQuade*, *supra*, at 187-88; *DeFilippo*, *supra*, at 1318; *Seagram*, *supra*, at 78.¹⁸⁰ In the

¹⁷⁸ *Id.* at 1178 (footnote omitted).

¹⁷⁹ Finding 30, 5 NRC at 166; Finding 65, *id.* at 176.

¹⁸⁰ Although the Court in *Seagram* did quote from a law review article which, at one point, does contrast exclusive dealing contracts with combinations "for the primary purpose of coercing or excluding", the quotation begins by saying that exclusive dealing arrangements are not unlawful *per se* "when the element of purpose to coerce the trade policy of third parties or to secure their removal from competition is absent . . ." *Id.* at 77. And the Court makes it clear immediately after the quotation that there was no evidence in the case of *any* anticompetitive motive for termination of the exclusive distributorship. *Id.* at 78.

case at bar, the Licensing Board found that there was anticompetitive motivation behind the decision to exclude municipalities from CAPCO.¹⁸¹ And the evidence cited supports those findings. Thus, even were we to accept the *dictum* of the three cases upon which applicants rely, the *per se* rule would nevertheless be applicable in this situation.

There is a third answer to applicants' argument of economic infeasibility. Even if the rule of reason were applicable (and it is, insofar as the exclusionary conduct was found to be a violation of Section 2 of the Sherman Act), applicants would not prevail. The evidence which they cite in support of their economic infeasibility thesis simply does not support it. The testimony of CEI Executive Vice President Harold Williams was that the municipals with whom applicants were interconnected other than Cleveland "either had no generation or very small generation, which would have been an insignificant part of the total group."¹⁸² The fact that utilities with "very small generation" (an extremely vague term) might be "an insignificant part of the total group" does not necessarily mean that their participation in the pool would not be economically feasible. Exhibit C-51, at p. 4, indicates that it was agreed at a meeting of the applicants in September 1967, after a brief discussion of participation in CAPCO by municipals, "that none of them were of sufficient size to have a significant impact on reliability or economy." Neither does it follow from this that their participation would have been economically infeasible. Indeed, it suggests the opposite; if the economic effect would have been insignificant, then it was feasible for them to participate without adversely affecting the benefits of the pool for the applicants.

Moreover, there is evidence in the record which supports the thesis that it would have been economically feasible for municipalities with generating facilities to be members of CAPCO. There was testimony that small utilities could help to finance a nuclear generating plant,¹⁸³ that where there is diversity in the time of peak load a large utility could benefit by obtaining peaking power from a small utility,¹⁸⁴ that allowing small utilities to have interests in nuclear plants might permit bigger, more efficient plants to be built and would allow plants to be loaded more quickly, so as to take advantage of their capacity.¹⁸⁵ Justice Department witness Kampmeier testified that even the addition to a pool of small systems would probably reduce the pool's reserve requirements and that the benefits of that reduction would be shared by the pool members.¹⁸⁶ See also our discussion of the benefits to a large utility of coordination with small utilities, even where the latter are wholesale

¹⁸¹ See Findings 183-89, 5 NRC at 223-27.

¹⁸² Tr. 10, 365.

¹⁸³ Tr. 3608-09.

¹⁸⁴ Tr. 3609.

¹⁸⁵ Tr. 5829-30.

¹⁸⁶ Exh. DJ-450, pp. 26-27.

customers of the former, in *Midland, supra*, 6 NRC at 1057-61.¹⁸⁷ It is true that both Kampmeier and we in *Midland* assumed a pool in which reserve requirements would be set on an equal percentage basis. But we have affirmed the Licensing Board's holding that making ability to meet the P/N formula a condition of entry into CAPCO violated the antitrust laws and its license condition permitting new members to participate on an equal percentage of reserve basis for their first twelve years of membership.¹⁸⁹

We also find telling the testimony of one of applicants' own witnesses, Mr. Dempler of Duquesne Light, that a unit capable of generating at least ten megawatts would have a significant effect on the reserve commitments of the CAPCO parties.¹⁹⁰ Applicants' Brief (at p. 17, n. 21) shows that, of the eleven municipalities other than Cleveland which in 1967 had generating units of their own, seven had "net dependable capacity" or "net capability" of more than 10 megawatts.¹⁹¹ Thus, by their own admission, applicants would have benefitted significantly from including most of the generating municipalities in the pool.¹⁹² But even in the minority of cases where admission of a municipality to CAPCO would not have been significant, that would not have excused applicants from their duty to admit them under the antitrust laws. As Mr. Kampmeier testified, "if the benefits are rather small, the costs of interconnecting the smaller systems are also likely to be rather small, with the benefits still outweighing the costs."¹⁹³ A monopolist does not have the right to deliberately exclude competition from a market merely because this will maximize his profits. See *International Railways of Cent. America v. United Brands Co.*, 532 F.2d 231, 239-40 (2d Cir. 1976). Yet, that is what applicants' claim of economic infeasibility comes down to, even as applied to the municipalities whose participation in CAPCO would have benefitted the applicants least.

¹⁸⁷ The Pilgrim nuclear plant in Massachusetts is an example of a generating plant with majority ownership by private utilities, in which municipalities have been allowed to own small shares. See Exh. DJ-634. The New England Power Pool has allowed wholesale customers to join and cease to be wholesale customers in whole or in part, if they so desire. See Exh. DJ-635, p. 42.

¹⁸⁸ See Section VII. A. of this opinion, *supra*, at 334-339 and Finding 211 of the Licensing Board, 5 NRC, *supra*, at 235-36.

¹⁸⁹ Condition 4c, 5 NRC at 258; *infra*, p. 393.

¹⁹⁰ Tr. 8857.

¹⁹¹ They were: Painesville (38 mw), East Palestine (16.5 mw), Norwalk (37.5 mw), Oberline (12.9 mw), Orrville (39.2 mw), Bryan (23.7 mw) and Napoleon (17.5 mw). Applicants' brief provides record citations for these figures.

¹⁹² We recognize that the seven municipalities may have had units in their system with capacity of less than 10 megawatts. But that is not significant; the applicants get credit from CAPCO for such small units. Tr. 8856, 10,063, 10,299, and 11,318. The amount of generation the pool would get as a result of a municipality's membership is the important thing.

¹⁹³ Exh. DJ-450, p. 27.

2. Pitcairn

The Borough of Pitcairn had its own municipal electric utility. As of 1967, it was operating in isolation and was the last surviving municipal system with Duquesne's service area.¹⁹⁴ The Licensing Board made extensive findings concerning the applicants' concerted denial of CAPCO membership to Pitcairn and Duquesne's unilateral refusal to do business with Pitcairn.¹⁹⁵ The evidence cited supports these findings and, with one minor exception noted later, we affirm them. Although the opinion below is critical of Duquesne's conduct, it does not specify in what respects that conduct is inconsistent with the antitrust laws except to say that it was "a refusal to deal and denial of an essential resource."¹⁹⁶ That task falls to us.

Applicants' protestations to the contrary notwithstanding, the evidence cited by the Licensing Board in Findings 190 to 196 establishes conclusively that their denial of CAPCO membership to Pitcairn was a *concerted* refusal to deal. As such, it was illegal *per se* under Section 1 of the Sherman Act and not subject to the defense of reasonableness. *Supra*, pp. 341-344. Even if the *per se* rule's application were to depend on the existence of exclusionary or anticompetitive intent (see *supra*, pp. 343-344), there was ample evidence of such intent here.¹⁹⁷ And, given CAPCO's monopoly power in the coordination services market, the exclusion of Pitcairn from CAPCO constituted monopolization under Section 2 of the Sherman Act.

Even on the unilateral level, we cannot accept Duquesne's argument that its decision to deny Pitcairn's request for CAPCO pool membership was reasonable.¹⁹⁸ Duquesne refused to sell wholesale power to Pitcairn.¹⁹⁹ Duquesne refused to sell emergency power to Pitcairn except under its rate M which, as is obvious from the Licensing Board's findings, was unreasonably and prohibitively high.²⁰⁰ Duquesne denied Pitcairn nuclear access.²⁰¹ It refused to sell Pitcairn power for redistribution on any basis.²⁰² That sort of total refusal to deal with a physically isolated municipal utility by the monopolist surrounding it was assuredly unreasonable in the extreme.²⁰³

¹⁹⁴ Finding 87, 5 NRC at 184; Finding 75 and 77, *id.* at 179-80.

¹⁹⁵ Findings 75-96, 98 and 190-96, *id.* at 179-87 and 227-30.

¹⁹⁶ Finding 98, *id.* at 187.

¹⁹⁷ See Findings 76-79 and 84, 5 NRC *supra* at 179-80 and 181-82, and the evidence there cited; Exh. DJ-572, p. 5.

¹⁹⁸ We therefore disassociate ourselves from the Licensing Board's statement that the desirability of small system membership in the CAPCO pool "was not established." 5 NRC at 230 n. 135.

¹⁹⁹ Exh. DJ-242, p. 2; Staff Exh. 13, p. 1; Staff Exh. 16.

²⁰⁰ See Findings 85-86, 5 NRC, *supra* at 182-84 and the evidence there cited.

²⁰¹ See Findings 92193, *id.* at 185-86 and the evidence there cited.

²⁰² Exh. DJ-243, memorandum of November 30, 1966, p. 2.

²⁰³ See also Finding 89, 5 NRC, *supra* at 185.

Given Duquesne's monopoly power in the retail and wholesale markets,²⁰⁴ it constituted monopolization within the meaning of Section 2 of the Sherman Act.

3. Cleveland

The city of Cleveland has a municipal electric system which is in direct retail competition with CEI. In 1973, it generated part of its own power requirements. In that year, it tried to obtain membership in CAPCO but was turned down. The Licensing Board's summary of the facts of that application and denial is contained in Findings 197 to 200 of the opinion below.²⁰⁵ We have carefully examined the evidence and find that the findings are fully supported by it. We therefore affirm those findings. The reasons for our rejection of applicants' challenges to them follow.

a. Points Raised by Duquesne

At the outset, we are confronted with Duquesne's contention that the decision to refuse Cleveland admission to CAPCO was not a collective one but, rather, was reached independently by each member for its own good and sufficient reasons.²⁰⁶ The Licensing Board relied on the testimony of CEI's president, Karl Rudolph, that, at a December 7, 1973 meeting of CAPCO's executive committee, "it was decided jointly that Cleveland would not be permitted membership in CAPCO."²⁰⁷ Duquesne cites the testimony of its chairman and chief executive officer, John Arthur, that no agreement was reached at the December 7th meeting.²⁰⁸ Mr. Arthur, in response to a leading question from his attorney, also testified that his letter to Cleveland turning down its request (Exh. DJ-105) was not written "in accordance with any agreement or understanding with any other member of the CAPCO group."²⁰⁹ However, neither Duquesne nor Mr. Arthur dispute the last paragraph of the minutes of the December 7, 1973 meeting which state:²¹⁰

A general discussion of the legal and practical considerations involved in the City's request followed, after which representatives from each of DL, OE, and TE agreed to communicate to Mr. Rudolph, by December 10, 1973, their position as to whether membership in the Pool should be offered to the city. Mr. Rudolph in turn agreed to communicate each of these views to the City at a meeting between CEI and city representatives scheduled for December 13, 1973.

²⁰⁴ See Finding 5(c) and (d), *id.* at 153-54.

²⁰⁵ 5 NRC, *supra* at 230-32

²⁰⁶ Brief, pp. 278-79.

²⁰⁷ Finding 198, 5 NRC, *supra* at 231, relying on Exh. DJ-558, p. 245.

²⁰⁸ Tr. 8351.

²⁰⁹ Tr. 8346.

²¹⁰ Exh. DJ-104, p.2.

Neither do they dispute, as was found in Finding 199,²¹¹ that that in fact was done, that Duquesne also mailed a copy of its response directly to the city and that each of the CAPCO members rejected Cleveland's request for membership. Thus, it does not matter whether the decision was made by the CAPCO members around the conference table at the December 7th meeting or within the next few days in the comfort of their own offices. When the members of a group meet to consider whether they should permit another to join, then all decide not to and tell him so, that is collective exclusionary action.

Duquesne also contends that its letter to the city (Exh. DJ-105) "was not in fact a refusal of the Cleveland request; . . ." The letter states that Cleveland's membership in CAPCO has no advantages and serious disadvantages, that CAPCO would not be operable with Cleveland as a member, that Cleveland would not be "a workable addition to Capco," that renegotiation of understandings and arrangements between the members would be "very difficult if not impossible" and that there is a question of whether it would be "legally proper" for Cleveland to become a part owner of CAPCO plants. The letter concludes by suggesting that Cleveland seek some form of arrangement with CEI instead. Although Duquesne avoided the use of the word "no" in this letter, it must be remembered that Cleveland needed the unanimous consent of all CAPCO members to be admitted.²¹² The letter made clear that Duquesne was withholding its consent. Should the Licensing Board have characterized the letter as a rebuff or a discouragement rather than a rejection?²¹³

What's in a name? That which we call a rose
By any other name would smell as sweet.²¹⁴

Finally, Duquesne avers that the Licensing Board's finding that applicants combined to resist Cleveland's entry into CAPCO is " 'overcome' by evidence of independent conduct grounded on a sound business justification."²¹⁵ It cites *First National Bank v. Cities Service Co.*, 391 U.S. 253, 277 (1968), *Dahl, Inc. v. Roy Cooper Co.*, 448 F.2d 17, 19 (9th Cir. 1971), and *Modern Home Institute v. Hartford Accident and Indemnity Co.*, 513 F.2d 102, 111 (2d Cir. 1975) in support of that thesis. But they fail to support it. In those cases, summary judgment was granted for the defendants because all of the evidence suggested that the acts were unilateral. As the Court said in *Dahl, supra* at 19, the record was "wholly lacking in any evidence of conspiracy . . . and in any

²¹¹ 5 NRC, *supra* at 231.

²¹² Tr. 10,436-38.

²¹³ "Rejection" was the word used by the Board in Finding 199, 5 NRC at 231.

²¹⁴ W. Shakespeare, *Romeo and Juliet*, Act II, Scene ii, line 43.

²¹⁵ Brief, p. 279.

facts from which an inference of conspiracy can rationally be drawn. . . .” In the case at bar, we have direct evidence of collective action plus conduct which is inherently collective, *i.e.*, the exclusion of a party from a group by its existing members. That the applicants may have had good individual motives for taking this collective action is entirely without legal consequence.

b. Points Raised by CEI

CEI makes several arguments on its own behalf with respect to the findings below on denial of CAPCO membership to Cleveland. We shall deal with them *seriatim*.

First, CEI asserts that Cleveland’s requests for both membership in CAPCO and interests in specific nuclear power plants were inherently contradictory and inconsistent. Therefore, it argues, it studied the matter to decide what arrangements would be best for Cleveland, found that nuclear participation plus a synchronous interconnection would be best and made Cleveland an offer to provide them, rather than CAPCO membership.²¹⁶ This argument does not hold up under scrutiny. CEI’s executive vice president, Harold Williams, admitted that he regarded the city’s request for membership in CAPCO and its other requests as alternative proposals.²¹⁷ We think that this was a reasonable way to construe them. Moreover, if this really was a ground for CEI’s decision to deny the request for CAPCO membership, we find it odd that CEI did not raise it with Cleveland.²¹⁸

Secondly, CEI contends that the city’s requests for membership in CAPCO and interests in nuclear plants “were a negotiating ploy, in effect, no more than a sham”, relying on *dictum* in *Standard Oil Co. v. Moore*, 251 F.2d 188, 198-99 (9th Cir. 1957), which states that there is no refusal to deal where the request for dealings is not *bona fide*.²¹⁹ The facts underlying this contention are as follows.

There was a member of the Cleveland City Council who had a close relationship with CEI. He received gifts from CEI at holiday and vacation times²²⁰ and often got help from CEI with his speeches and with technical subjects.²²¹ This council member had heard from Lee Howley, CEI’s general counsel and chief negotiator with Cleveland, that the city was seeking either membership in CAPCO or ownership participation in nuclear power plants.²²² There were city council committee meetings on March 4th and 5th,

²¹⁶ Brief, pp. 147-48.

²¹⁷ Tr. 10,485-86.

²¹⁸ See Exh. DJ-188 and Mr. Hauser’s notes of the October 23, 1973 and December 13, 1973 meetings in Exh. DJ-291.

²¹⁹ Brief, pp. 143-44.

²²⁰ Tr. 12,452-53.

²²¹ Tr. 12,449-51.

²²² Tr. 12,432-33, 12,436.

1974, at which this councilman questioned Raymond Kudukis, Director of the city's Department of Public Utilities, about the city's negotiations with CEI.²²³ MELP comes under the jurisdiction of that department.²²⁴ The councilman admitted he may have spoken with Howley between the two meetings.²²⁵ Although city council committee meetings were seldom transcribed or recorded, the March 5th meeting was taped at the councilman's request.²²⁶ The councilman saw to it that the tape was made available to CEI a day or two after the meeting.²²⁷

This was at best a patent attempt by CEI to manipulate the city's legislative processes, by means of a partisan councilman, for the purpose either of undermining the city's negotiating position with CEI or forcing Mr. Kudukis into making damaging admissions. We would be loath to exonerate CEI from antitrust liability on the basis of reprehensible conduct of that nature. However, even forgetting this aspect of the matter, Mr. Kudukis' testimony does not show that Cleveland was not negotiating in good faith.

The tape-recorded portion of Mr. Kudukis' testimony appears at Tr. 12,726-37. The councilman attacked Mr. Kudukis as apparently being part of an administration effort to commit the city to spending many millions of dollars which the city could ill afford. Mr. Kudukis said that this had to be looked at as part of a large negotiation, that he would rather not have to talk about what he really would settle for in public, but that, although the city had asked for several things (CAPCO membership, nuclear unit participation and unit power), he personally would be willing to take unit power from the nuclear units. We think the thrust of his testimony was that, for the city to make these requests did not necessarily mean that ownership interests would have to be purchased. However, he did not say that under no circumstances would the city accept a proposal from CAPCO or CEI for CAPCO membership or unit participation *i.e.*, partial ownership. He merely said that his personal preference at that time was for unit power.²²⁸ Moreover, it was not Kudukis but Law Director Whiting who was primarily in charge of negotiating with CEI on these matters.²²⁹ There is no evidence that his

²²³ Tr. 12,431 and 12,435; Applicants' Exh. 279.

²²⁴ See the organization chart following p. II-3 of Applicants' Exh. 207.

²²⁵ Tr. 12,456-57.

²²⁶ Tr. 12,439.

²²⁷ Tr. 12,439-40.

²²⁸ Indeed, that was the way he explained his 1974 testimony at the hearing below (Tr. 12,741) and, given the circumstances of his 1974 testimony (*i.e.*, being under intense pressure from a hostile councilman), we think it is a reasonable explanation.

²²⁹ See Exhibits DJ-181, DJ-182, DJ-183, DJ-184, DJ-185, DJ-188, and DJ-190. Indeed, Mr. Kudukis did not even appear at the crucial December 13, 1973 meeting at which the city's request for CAPCO membership was turned down and CEI's counter-proposal for nuclear unit participation by the city was presented and discussed. Exh. DJ-291, p. 14340.

intentions were other than those which he expressed to CEI on the city's behalf.

Besides, there is other evidence which indicates that Cleveland was sincerely interested in purchasing interests in generating capacity at around that time. Thus, in February 1974, the month immediately preceding that city council committee meeting, Assistant Law Director Hart visited some of the major underwriting houses in the country and discussed the financing of participation by the city in the nuclear power plants under discussion.²³⁰ Also, a preliminary official statement issued by the city on May 10, 1974 in connection with the floating of a bond issue states, in an engineering report annexed to it, that the city's Division of Light and Power "expects to negotiate, and as a matter of course, perfect a participation arrangement with CEI providing the Division with a source of nuclear capacity for future power supply."²³¹

A party who alleges that his conduct, which we would otherwise find in violation of the antitrust laws, should be excused because the party that he wronged was not negotiating in good faith bears a heavy burden of persuasion. Given the equivocal nature of Mr. Kudukis' testimony in a difficult and hostile political atmosphere, the fact that he was not primarily in charge of the city's negotiations with CEI, and the other evidence that Cleveland was serious about its proposals, we find that that burden has not been met here.

Finally, CEI accuses the Licensing Board of "confusing and misstating the chronology of events . . ."²³² The first alleged misstatement is the finding below that, on August 8, 1973, CEI decided to deny Cleveland membership in CAPCO and access to Davis-Besse and Beaver Valley 2.²³³ The Licensing Board's finding is based on the notes of CEI's own attorney, Mr. Hauser, of a CEI internal meeting of that date.²³⁴ As the notes show exactly what the Board found, we fail to understand on what basis CEI can dispute it. If CEI merely wished to emphasize that it modified its position on participation in the nuclear units in December of 1973, that is true; but it does not vitiate the findings as to what CEI had decided in August.

Similarly, CEI takes issue with this statement in the opinion below: "By letter of August 17, 1973, CEI communicated its intent to exclude the city from CAPCO membership to the other Applicant companies."²³⁵ CEI makes the point that the record does not contain a letter of August 17th. That is true

²³⁰ Tr. 4898-99.

²³¹ Applicants' Exh. 102, Exhibit A, p. A-13.

²³² Brief, p. 148.

²³³ Findings 198 and 203, 5 NRC, *supra* at 231 and 233.

²³⁴ Exh. DJ-291, p. 3.

²³⁵ Finding 198, 5 NRC, *supra* at 231.

but Mr. Hauser's notes of the August 8th meeting (Exh. D.J-291 at pp. 3-4), after stating that CEI decided to refuse the city CAPCO membership and access to Davis-Besse and Beaver Valley 2 but to offer access to Perry, said that, subsequent to the meeting, CEI President Rudolph "did receive approval of the chief executives of the other CAPCO Companies for the Company to proceed with proposing participation in the Company's allocated portion of Perry." We think it reasonable to infer that, if Rudolph told the other chief executives about the part of CEI's decision concerning Perry, he also told them about the rest of the decision. After all, this was CEI's total response to the city's requests, which had been made to the other applicants as well, and was also relevant to their approval of CEI's offer of participation in Perry.

The other alleged factual errors in the opinion below²³⁶ are too insignificant, even if true, to warrant discussion.

c. Application of the Rule of Reason

The findings of the Licensing Board with respect to the denial to Cleveland of membership in CAPCO, which we have affirmed, establish that it was a concerted refusal to deal. Since CEI and Cleveland were competitors in the retail market and Cleveland and the other members of CAPCO were potential competitors in the coordination services market, that refusal was illegal *per se* even under the group boycott rule as enunciated in *McQuade Tours, Inc., v. Consolidated Air Tour Manual Committee, supra* and *Smith v. Pro Football, Inc., supra*. See our prior discussion at pp. 342-344, *supra*. However, even if a rule of reason analysis were applicable, the denial of CAPCO membership to Cleveland would still be illegal.

Applicants offer eleven reasons in justification of their denial of pool membership to the city.²³⁷ We will treat them in turn.

The first reason is that:

within the past seven years Cleveland never has had sufficient generating facilities to meet its own load, let alone maintain adequate reserves (A-19 through A-23; A-134; A-136; A-207; Mayben 7645-56; Hinchee 2827, 2829-33).

The evidence cited by applicants does show that Cleveland had serious problems with its generating equipment in 1973 and the years immediately preceding and following it. (Actually, the period following the refusal of membership is not relevant). But what is significant is, as is also shown by the evidence cited, that despite these difficulties Cleveland was still able to generate a substantial portion of its own electricity needs in 1973. The fact that

²³⁶ Brief, p. 149.

²³⁷ Brief, pp. 110-11.

it also needed help from the outside was not a sufficient reason for denying it pool coordination.

Indeed, this precise point was decided in *Midland*, ALAB-452, *supra*, 6 NRC 892. There, the applicant argued that it was justified in refusing to coordinate with small utilities because “they had insufficient generation to meet their peak load plus some reasonable reserve level.”²³⁸ We rejected that argument, stating that “there is no inherent physical or economic barrier to Consumers’ engaging in simultaneous wholesale and coordination transactions with the same utility.”²³⁹ We explained:²⁴⁰

Under a wholesale-coordination agreement of the type Consumers offered . . . , the small utility would be required to buy wholesale power both to supply the difference between its generating capacity and peak load and also to provide it with a reasonable reserve margin. [Footnote omitted]. Because reserve capacity is not used on a continued or even a daily basis but is tapped in case of an unexpected or schedule outage of a generating unit, Consumers can count on that increment of power as a reserve for its own system. This is true whether the small utility draws the maximum amount of wholesale power contracted for from Consumers, utilizes its own generating capacity as much as possible and draws wholesale power only when needed, or follows some intermediate course.⁶²¹ Thus, while being paid on a firm power basis, Consumers can, in an emergency, generally utilize the power generated by this capacity as though it were being produced by the small utility’s own generators. This is a clear benefit to Consumers, notwithstanding the absence of the reciprocal power flow that the company focuses on. Indeed, the “burden” on Consumers’ generation and reserves is less under a wholesale-coordination arrangement than under a wholesale power contract.⁶²²

²³⁸ 6 NRC at 1056.

²³⁹ *Id.* at 1059.

²⁴⁰ *Id.* at 1059-61.

⁶²¹ Under a wholesale-coordination agreement, if the small utility draws the maximum amount of wholesale power, Consumers could in an emergency reduce its flow of wholesale power to the small utility, thus forcing it to operate the generation it is holding in reserve.... If the parties had strictly a wholesale arrangement (rather than a wholesale-coordination agreement) Consumers would not be entitled to reduce the flow of wholesale power to the small system but would be required to look elsewhere for power to meet its emergency.

Similarly, under a wholesale-coordination type of agreement, if the small utility as a matter of course used its generating capability to the maximum, Consumers could rely in an emergency upon that portion of wholesale power the small utility had contracted for as reserve capacity, because the utility would call for that power *only if* it experienced an emergency.

⁶²² For example, assume that Consumers is dealing with Utility A, . . . peak load of 43.5 MW, installed capacity of 45.1 MW, largest unit 23.5 MW in capacity. Assume further that Utility A’s largest unit fails during peak load conditions. Under a strictly wholesale arrangement, Consumers will have to deliver 21.9 MW of power to make up for this outage [peak load + largest unit

(Continued on next page)

We need not reach here the question of the reserve level a small utility must maintain so as not to burden Consumers' system. Consumers has defended its refusals to coordinate on the ground that it could never benefit by coordinating with a deficient utility that was also purchasing wholesale power from it. As we have seen, that position does not withstand analysis.⁶²³

Indeed, Cleveland would not have had to rely on buying wholesale power to meet reserve requirements. Instead, it could and no doubt would have done so by buying interests in CEI plants or plants jointly owned by the applicants, thus taking advantage of the tax benefits and cheaper financing available to a municipality and the lower cost power available from nuclear and more modern fossil fuel plants.

The second reason offered by applicants for denying pool membership to Cleveland is that:

the mismanagement and incompetence that led to Cleveland's sorry state of affairs is so egregious as to preclude the CAPCO companies from

(Continued from previous page)

capacity] - installed capacity). In contrast, under a hybrid wholesale-coordination agreement with a 20 percent reserve requirement, Consumers will have to deliver only 7.1 MW of power to Utility A (.20 [(peak load) - installed capacity - peak load]). The remaining 14.8 MW (21.9 MW - 7.1 MW) would be delivered only if Consumers had excess capacity available either on its own system or via short-term power purchases from other systems. Thus, by insisting on a strictly wholesale arrangement, Consumers assumes an unnecessarily large share of the reserve burden Of course selling wholesale power is more profitable than selling coordination services. See p. 964, *ff.*, *supra*.

⁶²³ Coordination between a utility deficient in generation and one which is self-sufficient can also lower the reserve levels each must carry. Assume, for example, that Utility A has a 200 MW peak load and a 200 MW generating capacity, its largest unit being 50 MW. Assuming that the "largest unit criterion" for calculating reserves is valid, Utility A's reserve requirement before coordination would be 50 MW, which it purchases from Utility B under a wholesale power arrangement. Assume that Utility B has a peak load of 850 MW (including the 50 MW wholesale purchase by Utility A) and generating capacity of 1,050 MW, its largest unit being 200 MW. Utility B's reserve requirement before coordination would be 200 MW.

Upon coordination the combined peak load of the two systems would be 1,000 MW (viewing the two systems as one, the 50 MW wholesale purchased by A would not be part of the combined system's load). Again assuming that the largest unit criterion is valid, the reserve requirement for the combined system is 200 MW, or 20 percent of their combined peak load. If the utilities were to share reserves on an equalized basis, . . . Utility A's reserve requirement would be 20 percent of 200 or 40 MW; Utility B's reserve requirement would be 20 percent of 800 or 160 MW. Thus, both could reduce their reserve requirements upon coordination: Utility A need buy only 40 MW of power from Utility B, and B need maintain only 160 MW of reserves.

Of course, if Utility B could not market elsewhere the extra power that it would have available through coordination with Utility A, B would naturally prefer to continue selling wholesale power to that utility rather than coordinate.

relying on Cleveland for mutual assistance in operating and planning their systems. [citations omitted.]²⁴¹

In the first place, it is not clear to what extent MELP's problems were due to mismanagement and incompetence as opposed to unwise decisions as to maintenance, rates, funding for operations and capital investment which came about as a result of its being a child of the political process. Secondly, the unreliability of MELP was due in large part to anticompetitive and monopolistic practices of CEI²⁴² and so is hardly a fit excuse for further practices of the same type. Thirdly, to the extent generating equipment was unreliable, CAPCO could simply have refused to accept it in satisfaction of MELP's pool requirements. But the most basic answer to this argument is that, if Cleveland was too unreliable outside CAPCO, it would have become sufficiently reliable by virtue of its membership in CAPCO because that would have entailed ownership participation in reliable CAPCO generating plants and a complete range of coordination services to make possible adequate maintenance and service during emergencies.²⁴³

Applicants' third reason is that:

Cleveland similarly lacks adequate and competently-trained personnel to participate in CAPCO's committee structure (A-207; A-208; A-210; A-211).

Most of the exhibits cited deal with the years 1975 or 1976, whereas the request and turndown occurred in 1973. Applicants' Exhibit 211 does deal with 1973 and 1974 but does not establish the proposition for which it is cited. Moreover, in 1973, Cleveland's commissioner of light and power was Warren Hinchee, who had excellent qualifications for that position.²⁴⁴

The fourth reason offered by applicants is that

Cleveland never has been, nor is today, able or willing to meet and honor the financial commitments that membership in the CAPCO pool entail, even though CEI has repeatedly sought such assurances. [Citations omitted.]

This is a red herring. Admittedly, MELP had financial difficulties and was slow in paying its bills to CEI. However, if the city's offer to join CAPCO had been accepted, the city would have had to raise the money to buy interests in CAPCO generating plants in order to meet its pool obligations; if it could not or would not do so, that would have soon become apparent and the deal would

²⁴¹ Brief, p. 110.

²⁴² Findings 33-63 and 201-10, 5 NRC *supra* at 166-76 and 232-35.

²⁴³ See Findings 33, 42 (second paragraph), 63 and 209 (second paragraph); *id.* at 166-67, 169, 176 and 235.

²⁴⁴ Tr. 2613-16.

have been off. As for other payments to pool members, CAPCO might have required some sort of security to insure payment. It will not suffice to say that Cleveland would not have met its financial commitments when it was not given any opportunity to demonstrate that it would.

Of applicants' remaining seven reasons, five of them boil down to the proposition that, because of differences between Cleveland and the CAPCO members in size, location, cost structure, financing structure and economic objectives, Cleveland's membership in CAPCO would have severely hampered, prevented or delayed the pool's ability to make decisions.²⁴⁵ We are not convinced. There is evidence in the record that the New England Power Pool contains within it investor-owned and public utilities, generating and non-generating utilities, large and small utilities.²⁴⁶ Indeed, applicants' own witness Slemmer testified that he is familiar with pools in which the members have different financing costs, that they are viable pools and that they have been able to surmount their problems.²⁴⁷ He also admitted that, as a general rule, coordination permits utilities of almost any size to obtain the benefits of economies of scale.²⁴⁸

There are many ways that can be devised to establish a decision-making mechanism in a power pool which takes account of the diversity of the pool's members. One way is to provide, as did the Licensing Board, that smaller systems have non-voting membership.²⁴⁹ Another is to adopt a more complex system of committee membership and voting which gives more decision-making power to larger systems but makes sure that municipalities and cooperatives have some modicum of committee representation and voting rights, as was done in the New England Power Pool Agreement.²⁵⁰ The point here is that it was possible to admit Cleveland on terms which would have

²⁴⁵ Brief, pp. 110-11.

²⁴⁶ See Tr. 11,524-27. The New England Power Pool Agreement permits "[a]ny Entity which is engaged in the electric utility business in New England" to join the pool. Exh. DJ-635 Sections 1.1 and 1.2 at 2-3. Investor-owned, municipally owned and cooperatively owned utilities may join. See *id.* Sections 7.1 and 8.1 at 18-19 and 23. Utilities which are partial or full requirements wholesale customers of other entities may be pool members. See Exh. DJ-636 Section 3.3 at 2. The membership of the pool in September 1975 may be seen from the signature pages of Exh. DJ-636. The nature of some of the small municipal systems may be seen in Exh. DJ-637. Exh. DJ-634 shows that it is possible for large investor-owned utilities and small municipal systems to participate together in the ownership of a nuclear generating plant planned pursuant to a pool agreement.

²⁴⁷ Tr. 9108.

²⁴⁸ Tr. 9107-08.

²⁴⁹ 5 NRC *supra* at 257-58. This was done "to prevent impediments to the operation and development of an areawide power pool through the inability of lesser entities to respond timely or to make necessary planning commitments." *Id.* at 258 n. 174.

²⁵⁰ See, for example, Exh. DJ-635 Sections 5.1, 5.3, 5.4, 5.10, 6.1, 6.3, 7.1, 7.3, 8.1, and 8.3, at pp. 10, 11, 12-13, 16, 17, 18-20, 23 and 24.

permitted CAPCO to continue to function effectively.

A tenth reason relied on by applicants for not allowing Cleveland into the pool is that:

any fixed-charge rate advantage Cleveland might theoretically bring to the CAPCO group would be lost to the pool (and to Cleveland) due to the relatively insignificant size of the Cleveland system [Citation omitted].²⁵¹

This is obviously a misstatement. Whatever such advantage Cleveland would bring could not be lost; it would merely redound to the pool's benefit to the extent that Cleveland had participatory interests in pool generating plants. However, this is not enough to satisfy the applicants. They take the position that coordination can only take place if "the benefits one party derives and the responsibilities he undertakes will accrue in similar fashion to all parties in the coordinating transaction, and on a basis which will, in the final analysis, result in a net benefit to each of the participants and a total net benefit to the group as a whole. [Citations omitted]."²⁵² There is basis in the record for concluding that the pool and its members would have derived some benefit from the admission of Cleveland to the pool.²⁵³ But the applicants are probably correct in believing that the benefits to Cleveland from admission to the pool would have been greater. The question is whether that was a good reason for turning Cleveland down.

The answer is that it was not. The Federal Power Commission, in determining the terms and conditions of compulsory interconnections under Section 202(b) of the Federal Power Act,²⁵⁴ has rejected the thesis that benefits must be equal for both parties. *Gainesville Utilities v. Florida Power Corp.*, 40 FPC 1227, 1237-38 (1968), *rev'd sub nom. Florida Power Corp. v. FPC*, 425

²⁵¹ Brief, p. 110.

²⁵² Brief, pp. 103-04.

²⁵³ Mr. Schaffer, Duquesne's president, testified that the contribution to CAPCO of generation capacity of any variety would benefit the members of the pool. Tr. 8565-66. And Mr. Dempler, in charge of system planning for Duquesne (Tr. 8664-65), testified that a unit with as little as 10 megawatts of capacity would have a significant effect on CAPCO reserve requirements (Tr. 8857). Also, Roland Kampmeier, a consulting engineer with expertise in the management of electric systems who appeared as a witness on behalf of the Justice Department, testified that, in his opinion, the argument that large systems do not benefit from taking small systems into a power pool is not valid. Exh. DJ-450, pp. 26-27. He said that "there are likely to be real benefits to the large systems, as well as to the small systems." *Id.* at 27. These are an ability "sooner to install larger units" and a slight lowering of their percentage reserve requirements (which would be greater if there is load diversity). *Ibid.* He added that, "if the benefits are rather small, the costs of interconnecting the smaller systems are also likely to be rather small, with the benefits still outweighing the costs." *Ibid.* Of course, this very reason advanced by applicants for excluding Cleveland reveals another benefit that would have accrued from admitting it—the cheaper financing which a municipal system can obtain from the issuance of tax-free bonds which is reflected in lower capital costs for generating plants.

²⁵⁴ 16 U.S.C. Section 824a(b).

F.2d 1196 (5th Cir. 1970), *rev'd and remanded for entry of a judgment enforcing the Commission's order sub nom. Gainesville Utilities v. Florida Power Corp.*, 402 U.S. 515 (1971). See also *Village of Elbow Lake v. Otter Tail Power Co.*, 46 FPC 675, 678-79 (1971), *aff'd as modified sub nom. Otter Tail Power Co. v. FPC*, 473 F.2d 1253 (8th Cir. 1973). We rejected it in deciding that it was inconsistent with the antitrust laws for a large utility to refuse to coordinate with small utilities so long as the large utility would derive some benefit from doing so. *Midland, supra*, 6 NRC at 1047-78. We see no reason to depart from that conclusion.

It should be remembered that the Licensing Board found that the denial of CAPCO membership to municipalities violated Section 2, as well as Section 1, of the Sherman Act.²⁵⁵ Surely, it cannot be claimed that companies with monopoly power, such as the applicants, had the right to maintain their monopolistic position by refusing to deal with much smaller electric systems such as MELP on the ground that the smaller electric systems would benefit more from the relationship than they would. *Midland, supra*, 6 NRC at 1050.

The eleventh reason advanced by applicants for denying CAPCO membership to Cleveland is based on the alleged inconsistency of the request for membership with the request for nuclear access. We have already shown that there was no inconsistency.²⁵⁶

One final word on this subject. We find it hard to believe that applicants turned Cleveland down on this subject. We find it hard to believe that applicants turned Cleveland down on the basis of business reasons, given the fact that none of them did any engineering or economic studies of the effect of taking MELP into CAPCO prior to turning down the request in December of 1973.²⁵⁷

VII. DENIAL OF NUCLEAR ACCESS TO CLEVELAND

The Licensing Board held that applicants' "joint and separate denials of access to nuclear units" to Cleveland "creates and maintains a situation inconsistent with the antitrust laws."²⁵⁸ Some of the arguments made against this finding by the applicants were dealt with in the immediately preceding section of this opinion because they were also made in connection with the findings on denial of CAPCO membership to Cleveland. However, there are two points made by applicants which were not covered in that section because they relate peculiarly to nuclear participation. We will treat them here.

Applicants appear to take the position that, whatever may have been the case with respect to the decision to deny CAPCO membership to Cleveland, there was no joint action on the subject of Cleveland's participation in nuclear units.²⁵⁹ Cleveland's proposals (for CAPCO membership, ownership in

²⁵⁵ Finding 189, 5 NRC, *supra* at 227.

²⁵⁶ See p. 349, *supra*.

²⁵⁷ Exh. DJ-581, p. 10; Tr. 8349, 9808, 10,441.

²⁵⁸ Finding 210, 5 NRC, *supra* at 235.

²⁵⁹ Brief, pp. 148-50.

nuclear plants or the purchase of unit power from nuclear plants, if ownership was impossible for legal reasons) were made to all the members of CAPCO. The city requested a meeting with all the members.²⁶⁰ Applicants dispute the Licensing Board's statement that "Cleveland's request for nuclear access" was jointly considered" by the applicants at the CAPCO executive committee meeting of December 7, 1973.²⁶¹ They rely in part on Exhibit DJ-103, a CEI inter-office memo stating that CEI's president, Mr. Rudolph, would attempt to convene a CAPCO Executive Committee meeting to consider Cleveland's request for CAPCO membership. The memo did not mention Cleveland's other proposals. That is hardly persuasive. As the memo was written for the purpose of seeing if the recipients had any conflict with the proposed dates, it would not have been important to set forth a complete agenda of what would be discussed.

The minutes of the meeting²⁶² are more important evidence. Although they open with a statement that the meeting was called to discuss Cleveland's request for CAPCO membership, they go on to set forth Cleveland's alternate proposals for ownership participation in specified nuclear units, with the capacity entitlement requested from each unit listed, or for the purchase of the specified amounts of capacity from these units. This gives rise to a very strong inference that the proposals for nuclear access were discussed along with the request for membership. Moreover, although the minutes state that the other pool members agreed to let Rudolph know of their position on the CAPCO membership proposal by December 10th, their responses to Rudolph or, to Cleveland itself in the case of Duquesne, all combine a negative response on CAPCO membership with a suggestion to negotiate some sort of nuclear access or other arrangement for the purchase of power with CEI.²⁶³ This indicates to us that Cleveland's other proposals were discussed at the executive committee meeting and that a tentative approach was decided on, subject to confirmation by each member.

Our conclusion that applicants acted jointly in responding to Cleveland's request for nuclear access is reinforced by the following testimony of Mr. Rudolph:²⁶⁴

Q. Was a position formulated at the CAPCO meeting?

MR. REYNOLDS: By whom?

MR. HJELMFELT: The group position formulated.

MR. REYNOLDS: I will allow him to answer that.

²⁶⁰ Exh. DJ-185

²⁶¹ Finding 206, 5 NRC, *supra* at 234.

²⁶² Exh. DJ-104.

²⁶³ Exh. C-61; Exh. DJ-581, p. 17; Exh. DJ-187.

²⁶⁴ Exh. DJ-558, p. 245.

A. I think the position we took is the one I repeated; that we would communicate to Muny that membership in CAPCO had, from our point of view, had no particular benefits to Muny; that we could give them what they needed and wanted without such membership.

Q. Now, when you said the position "we took," did you mean the position C.E.I. took? Or are you speaking of the position CAPCO took?

A. I am talking about the position that CAPCO took at that meeting.

The statement "that we could give them what they needed and wanted without such membership" obviously refers to a bilateral agreement for nuclear access between the City and CEI. Since the statement represents the position taken by CAPCO, it seems clear that both pool membership and nuclear access were discussed at the executive committee meeting.

Another piece of evidence points in the same direction. CEI attorney Hauser's minutes of CEI's meeting of its own executives and attorneys on August 8, 1973 indicates that a decision to offer Cleveland participation in CEI's shares in the Perry nuclear plants was made subject to clearance by the other CAPCO companies and that, after the meeting, Mr. Rudolph did receive "approval" of that proposal from the chief executives of those companies.²⁶⁵ Also there is evidence that CEI attorney Greenslade stated to Duquesne attorney Munsch, in a phone conversation on May 21, 1974, that CEI's proposal to give Cleveland ownership participation in three nuclear plants "is based on what Rudolph *thought* the Executives had authorized on December 7, 1973."²⁶⁶ In addition, the participation agreement proposed by CEI to the City on February 27, 1974 (Exh. DJ-192, p. 21) obligates CEI to use its best efforts to get the consent of the other CAPCO members to the transfer by CEI of part of its ownership interests in the nuclear plants to the City.

We conclude from all this evidence that a CAPCO member could not assign part of its interest in a CAPCO unit without the consent of the other members.²⁶⁷ Thus, the offer of participation in CAPCO units made to Cleveland by CEI on December 13, 1973 had to have been approved by the other CAPCO members and the evidence shows that they did approve it, acting both jointly and individually.

In addition, we hold that the decision of the applicants other than CEI in effect refusing to deal with Cleveland with respect to access to their shares of CAPCO nuclear plants but, instead, relegating the city to negotiate with CEI for a piece of CEI's share in those plants, was an unreasonable restraint of trade in violation of Section 1 of the Sherman Act. Even as individual decisions, they constituted monopolization under Section 2 of that Act. These

²⁶⁵ Exh. DJ-291, pp. 3-4

²⁶⁶ Exh. C-65, p. 1.

²⁶⁷ In our view, the Licensing Board's finding that their consent "was considered important" (Finding 203, 5 NRC, *supra* at 233) did not go far enough.

applicants had monopoly power in the coordination services market in the CAPCO region and they had ownership shares and other rights in all the nuclear plants in that region. By jointly deciding to put Cleveland's fate in the hands of its arch rival in the retail market which had been very hostile to the city for many years, these companies acted in an anticompetitive manner which tended to maintain their own monopolistic positions.

They cannot claim that they did not know that CEI was proposing nuclear access to Cleveland on unreasonable, anticompetitive terms. The record shows that, at the CAPCO executive committee meeting of December 7, 1973, CEI agreed to keep the other CAPCO members "informed on our negotiations with the city of Cleveland regarding their request to obtain power from CAPCO units" and did send them a copy of CEI's December 13, 1973 letter to the city containing its proposal for nuclear participation.²⁶⁸ Moreover, the evidence shows that, in the spring of 1974, Duquesne was informed by CEI of its negotiating posture with the city and made specific recommendations for changes in CEI's proposed agreement with the city.²⁶⁹ It is reasonable to infer that the other pool members were given the same information and opportunity.

We turn now to a consideration of CEI's proposal to the city. CEI agreed to negotiate with the city for its participation in three nuclear plants, subject to the following conditions:²⁷⁰

1. That CEI would have a "right of first refusal to purchase any power from the City's participation not required by the City for its own use or the use by retail customers of the City."
2. "[T]hat the city would agree that it would not sell electric energy to its retail customers below cost."
3. "[T]hat the city commit itself to withdraw any informal or formal petitions or requests for antitrust review or opposition in any pending proceedings before any administrative agency or court pertaining to those units" as a "condition precedent to entering into negotiations" for a nuclear participation agreement with CEI.²⁷¹

The Licensing Board deemed these conditions, along with CEI's refusal at a later date to wheel power out of these units to a system other than MELP, "unreasonable" and "an outrageous affront to the policies underlying the antitrust laws."²⁷² The applicants take issue with that characterization.²⁷³

We have already dealt with the right of first refusal at pp. 320-322, *supra*.

²⁶⁸ Exh. C-62.

²⁶⁹ Exhs. C-65 and C-66.

²⁷⁰ There were other conditions as well but these were the only ones found objectionable by the Licensing Board.

²⁷¹ Exh. DJ-188.

²⁷² Findings 62 and 208, 5 NRC, *supra* at 176 and 234. See also Finding 222(B), *id.* at 242.

²⁷³ Brief, p. 150.

The applicants raise three defenses to the second condition.

First, they contend that their prohibition on below cost sales was merely an attempt to make the city subject to the same rule to which they were subject under a state statute which did not cover municipal electric systems.²⁷⁴ This makes no sense. If the State of Ohio saw fit to exempt municipalities, what gave CEI the right to impose a prohibition upon the city. As CEI had monopoly power in the wholesale and coordination services markets, its attempt to put a floor under its retail competitor's rates as a *quid pro quo* for nuclear access was monopolization under Section 2 of the Sherman Act.

Secondly, applicants argue that the City had already covenanted in a bond indenture not to sell electricity below cost, so that a similar provision in a contract with CEI would impose no additional restraining influence on it. But, if it would not have made any difference, why would CEI have proposed it? Moreover, the statement published in connection with the bond issue did not pledge that each rate would be compensatory but only that the total revenue received from all rates would be "sufficient to pay, when due, debt service charges, all expenses of operation and maintenance, and all other obligations and indebtedness payable by" the city.²⁷⁴ Besides, this statement is dated May 10, 1974—approximately five months after the proposal for nuclear access was made by CEI. Applicants are correct in stating that the rate floor provision was dropped in the participation agreement proposed by CEI on February 27, 1974.²⁷⁶ But we fail to see the significance of that. The attempt to impose it was made and it did violate the antitrust laws.²⁷⁷

VIII. INTERCONNECTION WITH CLEVELAND BY CEI

A. Collateral Estoppel

CEI attacks the Licensing Board's findings that it refused to interconnect with the City of Cleveland's municipal electric system ("MELP") except upon unfair terms²⁷⁸ on several grounds. One of them is that a decision of the Federal Power Commission favorable to CEI on the issue of anticompetitive practices in a proceeding in the early 1970's should have been treated as a collateral estoppel against Cleveland.²⁷⁹ The FPC proceeding was one in which Cleveland sought to compel an interconnection from CEI pursuant to Section 202(b) of the Federal Power Act, 16 U.S.C. Section 824a(b).

²⁷⁴ See Exh. DJ-191, p. 2; Tr. 10,763.

²⁷⁵ Tr. 5407; Appl. Exh. 102, p. 15.

²⁷⁶ See Exh. DJ-192.

²⁷⁷ Of course, any violation of the antitrust laws also meets the less rigorous standard of Section 105c of the Atomic Energy Act—inconsistency with the antitrust laws. *Midland, supra*, 6 NRC at 907-09.

²⁷⁸ Findings 34-56, 5 NRC at 167-73.

²⁷⁹ The decision was expressed in a series of orders which are denominated, for purposes of our record, Applicants' Exhibits 19 through 22.

In the first place, it must be noted that, while the hearings before the FPC concluded on April 6, 1972,²⁸⁰ some of the Licensing Board's findings on this issue relate to events which occurred subsequently.²⁸¹ Surely, the FPC orders could create no collateral estoppel as to those.

Even as to events occurring before that date, however, there is no collateral estoppel. Where the legal standards of two statutes are significantly different, the decision of an issue under one statute does not give rise to collateral estoppel in a litigation of a similar issue under a different statute. *See United Shoe Machinery Corp. v. United States*, 258 U.S. 451 (1922); *In re Yarn Processing Patent Validity Litigation*, 498 F.2d 271, 278-79 (5th Cir. 1974); *Tipler v. E.I. duPont de Nemours & Co.*, 443 F.2d 125, 128-29 (6th Cir. 1971); *Pacific Seafarers, Inc. v. Pacific Far East Line*, 404 F.2d 804 (D.C. Cir. 1968), *cert. denied*, 393 U.S. 1093 (1969). The standard which governed the Federal Power Commission's decision on whether to order an interconnection under Section 202(b) of the Federal Power Act was

whether such action is 'necessary or appropriate in the public interest.' Although antitrust considerations may be relevant, they are not determinative.

Otter Tail Power Co. v. United States, 410 U.S. 366, 373 (1973). The Nuclear Regulatory Commission's duty under Section 105(c)(5) of the Atomic Energy Act is solely to enforce the antitrust laws. ALAB-385, *supra*, 5 NRC 621, at 632-34 (1977). Therefore, the Licensing Board was correct in not regarding the FPC's decision under Section 202(b) as collateral estoppel on the interconnection question in this case.²⁸²

Moreover, Cleveland got the primary relief that it sought from the FPC—an order requiring a permanent 138 kv synchronous interconnection.²⁸³ The city also received an order compelling CEI to provide it with a 69 kv temporary interconnection, albeit not the synchronous one it preferred.²⁸⁴ If the findings on anticompetitive conduct had gone the other way, it would not have made any difference in the relief granted. In a case such as this, "the adjudication of the issue does not dictate the judgment, and is thereby deprived, to some degree, of the assurances of integrity and correctness that the judicial process affords to genuinely dispositive adjudications." 1B Moore's Federal Practice 0.443[5] at 3922 (2d ed. 1974). Moreover, appellate

²⁸⁰ Applicants' Exh. 19, p. 4.

²⁸¹ *See* Findings 51, *et seq.*, 5 NRC at 172-73.

²⁸² Although the Licensing Board did not discuss this collateral estoppel issue in the opinion below, it did rule upon it. Tr. 11,750-51. Of course, it would have been better if the Licensing Board had set forth somewhere the reasons for its ruling.

²⁸³ *See* Applicants' Exhs. 19, 21 and 22.

²⁸⁴ *See* Applicants' Exh. 19.

review on this issue was not available.²⁸⁵ Thus, the findings were not necessary to the Federal Power Commission's decision and therefore do not constitute collateral estoppel in later litigation. *Norton v. Larney*, 266 U.S. 511, 517 (1925); *Haize v. Hanover Ins. Co.* 536 F.2d 576 (3rd Cir. 1976); *Lombard v. Board of Education of City of New York*, 502 F.2d 631, 637 (2d Cir. 1974); *Eastern Foundation Co. v. Creswell*, 475 F.2d 351 (D.C. Cir. 1973); *Fibreboard Paper Products Corp. v. East Bay Union of Machinists, Local 1304*, 344 F.2d 300, 306-07 (9th Cir.), *cert. denied*, 382 U.S. 826 (1965); Restatement (Second) of Judgments Section 68, Comment h (Tent. Draft No. 1, 1973).

Closely connected to but distinct from its collateral estoppel argument is CEI's assertion that the Licensing Board's failure to accept the FPC's findings on anticompetitive practices disregarded the legislative history of the 1970 amendments establishing Section 105c antitrust review.²⁸⁶ In support of this statement, it cites the Congressional testimony of Walter B. Comegys, who was head of the Antitrust Division at the time.²⁸⁷ While Mr. Comegys did say that his Department believed the Atomic Energy Commission to "be capable of very intelligent and responsible coordination of activities with other Federal agencies" concerned with antitrust problems in the electric power industry, he also stated:²⁸⁸

We would not propose that the AEC be required to be bound by past FPC or State commission decisions. The electric utility industry is changing and developing rather quickly. The law concerning the application of antitrust policies in regulated industries has also developed rapidly in recent years, and we expect it to continue to evolve. All agencies involved in this industry must be free to conform their judgments as closely as is possible to new circumstances and the new understandings of appropriate economic policy.

Thus, his testimony does not support the proposition that the FPC findings in question were binding on the Licensing Board.

B. The Attempt to Force Cleveland to Raise Its Rates

CEI takes exception to the Licensing Board's holding that CEI's offers to

²⁸⁵ Though Cleveland was able to appeal from the FPC's decision on the question of rates (see *City of Cleveland, Ohio v. FPC*, 525 F.2d 845 (D.C. Cir. 1976)), it could hardly have appealed from the findings on anticompetitive conduct because it was not "aggrieved" by them. See Section 313(b) of the Federal Power Act, 16 U.S.C. Section 825 (b).

²⁸⁶ Brief, pp. 155-56.

²⁸⁷ *Prelicensing Antitrust Review of Nuclear Powerplants: Hearings Before the Joint Comm. on Atomic Energy*, 91st Cong., 1st Sess. 135 (1969).

²⁸⁸ *Ibid.*

interconnect with Cleveland if the city raised its rates to CEI's level, were an attempt to fix rates and thus a *per se* violation of the antitrust laws.²⁸⁹ CEI contends that a unilateral attempt to do something cannot be a violation of Section 1 of the Sherman Act because an indispensable element of a violation of that Section is joint action.²⁹⁰ While this argument may have some merit, we think that trying to impose price-fixing as a condition of interconnection was such an abuse of monopoly power as to constitute a violation of Section 2 of the Sherman Act²⁹¹ and to be inconsistent with the antitrust laws within the meaning of Section 105c of the Atomic Energy Act. Thus, the conduct was unlawful in any event.

C. Cleveland's Debt to CEI For Services Rendered

CEI asserts that Cleveland was in arrears on its debt to CEI from 1970 on and that the total indebtedness of Cleveland to CEI, as of April 1, 1977 was \$17,103,331.45. It argues that its "hesitancy to negotiate with Cleveland for new forms of service while past bills are outstanding and continuing to escalate is justifiable."²⁹¹ Of course, the amount of this debt in 1971 (the time period CEI was discussing at the point in its brief at which it made this argument) was by CEI's own admission, only somewhat over \$1 million.²⁹³ Moreover, CEI admits that it had judicial remedies available to it for this failure to pay. Its brief tells of its 1971 suit in the Cuyahoga County Common Pleas Court to collect the arrearages as of that time, its intervention in a suit filed by the Federal Power Commission against Cleveland in 1975 to enjoin the city from continuing to refuse payment of the amounts due and owing to CEI, and of its counterclaim in the city's civil antitrust suit against it for payment of past due bills.²⁹⁴ That counterclaim has already yielded CEI summary judgments of \$9,525,067.50 on September 21, 1976 and \$3,925,-460.98 on April 7, 1977. See orders of those dates in *City of Cleveland v. Cleveland Electric Illuminating Company*, Civil Action No. C75-560, U.S. District Court, N.D. Ohio.²⁹⁵ Those judgments were affirmed by the Court of Appeals. 570 F.2d 123 (6th Cir. 1978). Given the availability of such remedies to CEI, it is difficult to see how their violations of the antitrust laws and conduct inconsistent therewith may be justified as a legitimate reaction to the city's failure to pay its debts.

D. The 69 kv Interconnection

The decision below states that, although the FPC decision required only

²⁸⁹ Finding 38, 5 NRC at 167-68.

²⁹⁰ Brief, p. 157.

²⁹¹ See pp. 329-330, *supra*. See also p. 328 n. 108, *supra*.

²⁹² Brief, pp. 165-66 n. 196.

²⁹³ *Id.* p. 165; Tr. 10,565.

²⁹⁴ Brief, pp. 165-66.

²⁹⁵ See also *id.*, p. 166 n. 196.

that there should be a nonsynchronous 69 kv temporary interconnection between CEI and MELP, it "did not prevent synchronous operation."²⁹⁶ CEI excepts to this statement.²⁹⁷ It relies on the FPC examiner's initial decision which, in one of its ordering paragraphs, provided that:

the 69 KV connection must be operated in the open-switch mode at all times except when used for emergency or short-term service to the city. The 69 KV emergency nonsynchronous interconnection should transmit energy from CEI to the city on an if, as and when available basis only.²⁹⁸

Applicant's point is well taken. To be sure, before the FPC litigation, CEI would have had the right to agree to a synchronous temporary interconnection with Cleveland, if it so desired. See *Otter Tail Power Co. v. United States*, 410 U.S. 366, 373 (1973). And the proviso in Section 202(b) of the Federal Power Act that "the Commission shall have no authority . . . to compel . . . [a] public utility to sell or exchange energy when to do so would impair its ability to render adequate service to its customers" is a limitation on the FPC's jurisdiction, not a prohibition on voluntary agreements. Thus, the FPC order quoted above was only a condition on the operation of the interconnection compelled by the FPC; it could not operate as a bar to a subsequent voluntary agreement or to dictate the terms of such an agreement. So the statement in the opinion below that it "did not prevent synchronous operation" was true, insofar as it went. However, as Congress had prohibited the FPC from ordering an interconnection in a case where compliance with the order would impair the compelled utility's ability to render adequate service to its customers and the FPC found that synchronous operation of the 69 kv temporary interconnection would imperil the reliability of CEI's service,²⁹⁹ we fail to see how CEI's refusal to operate that interconnection synchronously could constitute a violation of the antitrust laws or even be characterized as inconsistent with those laws. It was therefore wrong for the Licensing Board to imply culpability on CEI's part for refusing to permit such operation.

Nevertheless, CEI cannot, by any construction of the evidence, be considered blameless in the way that the 69 kv interconnection was operated. The basis for the FPC's decision to deny Cleveland's request for synchronous operation of the intertie was summed up in the following way in the initial decision:³⁰⁰

The public interest does not require that the city's customers be protected from temporary blackouts at the expense of CEI's customers. Particularly, since Gunderson's testimony shows that "operation of the 69 KV tie in the

²⁹⁶ Finding 51, 5 NRC at 172.

²⁹⁷ Brief, pp. 166-67 n. 197.

²⁹⁸ Applicants' Exh. 19, p. 19.

²⁹⁹ Applicants' Exh. 19, p. 12.

³⁰⁰ *Ibid.*

normally open . . . mode can be implemented to avoid any risk of an outage to MELP extending beyond two or three minutes.” [Citation omitted.]³⁰¹

Yet, CEI did not permit the interconnection to be operated in that fashion. As the Licensing Board found and the evidence showed:³⁰²

Connection at 69 kv required CEI executive clearance and would at times require up to 12 hours notice before CEI would take any action on MELP's request, Tr. 2570-2571. MELP's system would experience brownouts, blackouts, or voltage reductions while awaiting CEI approval of a request for power over the 69 kv tie, Tr. 2669-2670.

Moreover,³⁰³

CEI was aware that MELP outages resulted in the conversion of customers from Cleveland to CEI, DJ 344-350; DJ 352; DJ 559, p. 60; DJ 560, pp. 132-133; DJ 563, pp. 36-37; DJ 566, p. 62; DJ 569, pp. 24, 94-95; C 11-12; C 14-15; C 19; C 159, p. 59, and solicited the affected MELP's (sic) customers after these outages, DJ 352; Tr. 2691-2695.

It is clear therefore, that CEI violated the spirit and underlying rationale of the FPC order, if not its letter.

The Licensing Board also found that, after the City experienced a major outage in December 1972 lasting several hours, CEI refused to sell emergency power to MELP over the 69 kv interconnection unless MELP agreed to sign a contract for the purchase of street lighting services.³⁰⁴ What the Licensing Board failed to state is that CEI had a request to raise the rates for those services pending at the time. The city had objections to it. CEI told the city that its approval of that increase was a condition of CEI's provision of emergency service to the city over the 69 kv line. According to Mr. Kudukis, Cleveland's Director of Public Utilities at the time, the city acquiesced for the following reason:

Because without the 69 service and the fact that some of our equipment was not functioning, we couldn't continue to provide electrical power to our customers, and since the condition of getting that 69 service was the approval of those rates, as I said earlier, we were put into a situation where we had to make a choice and that was the choice we made.³⁰⁵

Finally, the Board below found and the evidence shows that “Cleveland

³⁰¹ Gunderson was FPC staff witness. *Ibid.*

³⁰² Finding 52, 5 NRC at 173 and the evidence there cited. The Licensing Board's reference to Tr. 2570-71 was mistaken. The pages of that volume of the transcript were renumbered to make them higher by 100. Thus, the reference should be to Tr. 2670-71.

³⁰³ Finding 47, *id.* at 172.

³⁰⁴ Finding 53, *id.* at 173.

³⁰⁵ Tr. 7496-98.

was forced to take power over the 11 kv and 69 kv load transfer points on conditions that prevented the municipal system from performing necessary maintenance on its generating units," thus adversely affecting its reliability and "causing it severe competitive injury."³⁰⁶

Our ultimate conclusion is that CEI used its monopoly power in the coordination services market (by withholding and delaying the supply of power across the 69 kv intertie) to increase the price it received from MELP for street lighting service. Furthermore, CEI used its monopoly power to drive MELP out of business in the retail power market. The progressive deterioration of MELP's generating equipment and its frequent blackouts and brownouts caused customers to leave MELP for CEI. CEI's conduct constituted monopolization, in violation of Section 2 of the Sherman Act. *See Midland, supra*, 6 NRC at 918 and 922-23.

E. Occasions When CEI Lacked Sufficient Power to Supply Cleveland

The Licensing Board stated:³⁰⁷

On occasions when CEI lacked sufficient generation to supply Cleveland, Tr. 10,698; App. 134, it did not attempt to reach any other bulk power supplies nor did it offer to transport power to Cleveland from some other source with which it was interconnected, Tr. 10,703-10, 704. [Footnote omitted.]

CEI contends that "the very record references listed by the Licensing Board as supporting this proposition, explicitly and directly refute it"³⁰⁸

The testimony does show that, when CEI was unable to generate enough power to meet Cleveland's needs, it also purchased as much power as it could from other sources.³⁰⁹ Thus, the finding complained of is misleading. However, the Licensing Board may have had in mind other testimony by CEI's house counsel, Mr. Hauser, that on such occasions CEI did not approach any suppliers of preference power on Cleveland's behalf and did not tell Cleveland that it would be willing to wheel power to it if the city could find a supplier of power on its own.³¹⁰ We have already discussed CEI's refusal to wheel power from other public utilities to Cleveland and we have held that that was a violation of Section 2 of the Sherman Act.³¹¹ It follows that CEI's unwillingness to explore or permit Cleveland to explore the possibility of wheeling public power to the city over CEI's lines on these occasions was

³⁰⁶ Finding 54, 5 NRC at 173, and the evidence there cited. *See also* Finding 55, *ibid.*

³⁰⁷ Finding 48, 5 NRC at 172.

³⁰⁸ Brief, p. 162 n. 190.

³⁰⁹ Tr. 10,700.

³¹⁰ Tr. 10,702-04. Preference power is a type of power produced by a governmental entity which may not be sold to a private utility.

³¹¹ *See* Part V of this opinion, *supra*, at pp. 328-331.

inconsistent with the antitrust laws.

IX. TERRITORIAL AGREEMENTS

A. Between CEI and Ohio Edison

CEI takes strenuous exception to the finding below that “an agreement to recognize territorial boundaries between CEI and Ohio Edison has been in effect since as early as 1964.”³¹² The Licensing Board relied on two exhibits—DJ-488 and DJ-588.

CEI is quite correct in asserting that DJ-488, in and of itself, is an insufficient basis for that finding. It indicates that an agreement was reached between the two utilities in 1964 or earlier as to who should serve a customer but does not establish that that agreement continued to limit future competition between them.³¹³ Moreover, the memo’s statement that the utilities had agreed in 1974 that “CEI would explore the legality” of an agreement to divide customers by territory in the area then in dispute does not prove that such an agreement was ever reached. For all we know from the memo, counsel may have advised CEI that such an agreement would be illegal and that ended the matter.

However, Exhibit 488 does state that, in 1964 or earlier, “the two companies had had difficulty at certain boundaries and it was concluded that the company with the lowest cost should serve; . . .” And CEI’s President, Rudolph, testified in 1975 (Exh. DJ-558, p. 53) that CEI does not compete with Ohio Edison for new retail customers. Although Mr. Rudolph testified that this was because Ohio law prohibits such competition, CEI admits that that was a misstatement of the law.³¹⁴ It is therefore reasonable to draw the inference that CEI refrained from retail competition with Ohio Edison not because of Ohio law but because of the understanding it had reached with Ohio Edison in 1964 or earlier that, in the case of new customers at the boundary between their territories, the company with the lowest cost would provide service. Accordingly, we agree with the Licensing Board’s conclusion that a territorial agreement between CEI and Ohio Edison was in effect between 1964 and 1975.

B. Between Toledo Edison and Ohio Power

The Licensing Board found that Toledo Edison and Ohio Power Company “have had a territorial agreement since at least the early 1960’s.”³¹⁵ However, the evidence it relies upon, an unexplained map, is clearly an insufficient foundation for the finding. Still, the record does contain

³¹² Finding 111, 5 NRC at 192-92; see also Finding 112, *id.* at 193-94.

³¹³ Arguably, an agreement which had no effect beyond 1964 might be too remote for us to consider in this proceeding. See 5 NRC at 180 n. 75.

³¹⁴ Brief, p. 183. See also Finding 112, 5 NRC at 193.

³¹⁵ Finding 164(B), *id.* at 214.

documentary evidence showing that, in 1964 and 1966, each company refused to sell electricity at wholesale to a municipality being served by the other and, in the case of Toledo Edison, it informed Ohio Power of the request and refusal.³¹⁶ On the basis of this evidence, we infer that there was an agreement between these two utilities not to compete for wholesale customers already being served by one of them.

The testimony of Toledo Edison officials Kozak, Williamson, and Moran³¹⁷ that they were not aware of a territorial or customer allocation agreement between the two utilities is not significant. The issue is not whether these particular officials were aware of such an agreement³¹⁸ but whether such an agreement did in fact exist. The Toledo Edison official who would have known about the existence and implementation of agreements not to compete for wholesale customers was Mr. Schwalbert, who from 1962 to 1974 was in charge of "overseeing relationships with municipal and cooperative systems."³¹⁹ It was he who refused the request for service of a municipal wholesale customer of Ohio Power Company in 1966 and communicated that to Ohio Power.³²⁰ And he was one of the key people involved in the execution of territorial agreements with Ohio Edison Company.³²¹ Although Mr. Schwalbert's deposition was taken in this proceeding,³²² the pages of it offered into evidence do not contain a denial of the existence of a territorial agreement between Toledo Edison and Ohio Power in the 1960's.

C. Between Toledo Edison and Consumers Powers

The Licensing Board found that Toledo Edison and Consumers Power Company were parties to a territorial agreement as a result of which Toledo Edison refused to sell power to a cooperative in Consumers' territory.³²³ Toledo Edison points out that the Justice Department had raised the same issue in the *Midland* proceeding and that the Licensing Board had decided the issue against the Justice Department.³²⁴ After the appellate briefs were filed with us in the case at bar, we issued our decision on the *Midland* appeal.³²⁵ Although we did not specifically mention the alleged territorial agreement

³¹⁶ Exh. DJ-512, attachments 4, 4(a), 4(b) and 8.

³¹⁷ Exh. DJ-579, p. 68; Exh. DJ-581 p. 50; Tr. 9903-05.

³¹⁸ Mr. Moran acknowledged that he "may not have had knowledge of" an oral agreement. Tr. 9904.

³¹⁹ Exh. DJ-577, p. 32.

³²⁰ Exh. DJ-512, attachment 1800062.

³²¹ See Exhibits DJ-513 and DJ-515-17.

³²² It is Exh. DJ-577.

³²³ Findings 164-65, 5 NRC at 214-16.

³²⁴ *Consumers Power Company* (Midland Plant, Units 1 and 2), LBP-75-39, 2 NRC 29, 106 (1975). The basis given for the Licensing Board's decision was that the evidence offered in support of the allegation that such an agreement existed was hearsay.

³²⁵ ALAB-452, 6 NRC 802 (1977).

between Consumers and Toledo Edison, we affirmed the Licensing Board's findings with respect to all of the asserted territorial agreements, on the basis of "the weight of the evidence."³²⁶ Toledo Edison argues that the *Midland* decision should have barred the Justice Department and the staff from raising an issue with respect to the alleged territorial agreement between it and Consumers Power in this case.³²⁷ We agree.

The Justice Department refers us to its brief in response to Toledo Edison's motion to dismiss, for its answers to the claim of collateral estoppel. Although we normally do not permit incorporation by reference in briefs,³²⁸ especially where we have imposed page limits, we will let the matter pass this time in the interest of expediting our already long-delayed decision.

The Justice Department contends that the issues in the two cases are different. But we have examined the evidence cited by the *Midland* Licensing Board with respect to this alleged agreement and we find that it relates to the same series of events described in Finding 164(C) in this case.

Justice argues that the *Midland* Licensing Board's findings on territorial agreements cannot have collateral estoppel effect because that Board characterized them as "neither essential nor necessary to the disposition of the case" because the issue was "not within the relevant matters in controversy and [the conduct was] not within the relevant market."³²⁹ Thus, Justice invokes the rule that rulings not essential to the judgment do not give rise to collateral estoppel.³³⁰

This point is not well taken. The *Midland* Licensing Board also rejected the charges of territorial agreements on their merits.³³¹ Thus, its decision on territorial agreements was based on alternate grounds. In such a case, "the judgment includes each adjudicated issue that is necessary to support any of the grounds upon which the judgment is rested." 1B Moore's Federal Practice para. 0.443[5] at 3921 (2d ed. 1974); accord, *Winters v. Lavine*, 574 F.2d 46, 66-69 (2d Cir. 1978) (Waterman, J.); *Kaiser Industries Corp. v. Jones & Laughlin Steel Corp.*, 515 F.2d 964, 980 n. 74 (3rd Cir. 1975) (Adams, J.);

³²⁶ *Id.* at 1093-94.

³²⁷ Toledo Edison presented this position to the Licensing Board in a motion to dismiss this issue served April 20, 1976.

³²⁸ *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 370 (1978); *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit No. 1), ALAB-424, 6 NRC 122, 126-27 (1977); *Public Service Electric and Gas Company* (Hope Creek Generating Station, Units 1 and 2), ALAB-394, 5 NRC 769 (1977); *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-367, 5 NRC 92, 104 n.59 (1977).

³²⁹ LBP-75-39, *supra*, 2 NRC at 102.

³³⁰ See pp. 363-364 *supra*, and the cases there cited.

³³¹ LBP-75-39, *supra*, 2 NRC at 105-06.

Restatement of Judgments Section 68, Comment n (1942).³³² *But cf. Stebbins v. Keystone Ins. Co.*, 481 F.2d 501, 508 (D.C. Cir. 1973) (no collateral estoppel where one of the grounds was the plaintiff's failure "to make an extra-judicial request or demand, or pursue a non-judicial remedy, prior to presenting his claim in court"). Moreover, where an appeal has been taken and decided, it is the decision of the appellate court which counts, for purposes of collateral estoppel or *res judicata*. *Martin v. Henley*, 452 F.2d 295, 300 (9th Cir. 1971); *International Refugee Organization v. Republic S.S. Corp.*, 189 F.2d 858, 862 (4th Cir. 1951); *Moran Towing & Transp. Co. v. Navigazione Libera Triestina, S.A.*, 92 F.2d 37, 40-41 (2d Cir. 1937) (A. Hand, Jr.), *cert. denied*, 302 U.S. 744 (1937). In this case, it is our decision in *Midland* which controls and not the Licensing Board's. And there was only one ground for our decision on the territorial agreements—the weight of the evidence. Thus, our holding on this issue was patently necessary to the judgment, at least as to these allegations of antitrust violations.

Finally, the Justice Department argues that there must be mutuality of estoppel where reasons of equity require it.³³³ This contention is also without merit. Any doubt that may have lingered about whether mutuality is required for defensive use of collateral estoppel was eliminated in *Parklane Hosiery Co. v. Shore*, 439 U.S. 322, 58 L.Ed. 2d 552 (1979). There, the Supreme Court stated that, in its earlier decision in *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313 (1971), it had asked the broad question of "whether it is any longer tenable to afford a litigant more than one full and fair opportunity for judicial resolution of the same issue" and had "strongly suggested a negative answer to that question . . ."³³⁴ Although the Court went on to say that equitable reasons may dissuade a trial court from permitting the offensive use of collateral estoppel, it placed no such limitation on defensive use. The Department of Justice does not assert that it did not have a full and fair opportunity to litigate this issue in the *Midland* case. Accordingly, collateral estoppel must apply.

For all these reasons, we *reverse* the finding below of a territorial agreement between Toledo Edison and Consumers Power Company.

³³² One of the main reasons for this is that "appellate review of all grounds supporting the judgment is available at the instance of the interested party, since all the determinations are unfavorable to the losing litigant." 1B Moore's Federal Practice, *supra*, at 3923. The case is thus quite different from one in which the issue was lost by the winning litigant. *See supra*, p. 363.

The Restatement of Judgments (2d), Tentative Draft No. 1 (1973) would deny collateral estoppel effect to alternative determinations by a court of first instance but would give collateral estoppel effect to alternative determinations of an appellate court. Compare Section 68, Comment i with Section 68, Comment o. We could find no support for this dichotomy in the Federal case law.

³³³ As Toledo Edison was not a party in *Midland*, mutuality is lacking.

³³⁴ 439 U.S. at —, 58 L.Ed.2d at 560 (1979).

D. Between Ohio Edison and Holmes-Wayne Cooperative

The Licensing Board found that, "at least until 1967, Ohio Edison had a territorial agreement with Holmes-Wayne Cooperative which eliminated retail competition between those two utilities, DJ 522."³³⁵ But Exhibit DJ-522 fails to support this finding. It is an internal memorandum by an Ohio Edison official which shows that there was active competition in 1967 between those two utilities with respect to service for a proposed industrial development. Although the memo states that Ohio Edison officials, at a meeting with Holmes-Wayne officials, referred to a 1961 agreement between the utilities, it does not explain the nature and terms of that agreement. And it shows that, at the meeting, both sides maintained that they had a right to serve the development. The finding is therefore reversed.

E. Between CEI and Painesville

Finding 70 of the opinion below³³⁶ states in part:

CEI offered an interconnection to Painesville on anticompetitive terms for the specific purpose of eliminating competition. The company proposed that it supply an interconnection in consideration for CEI taking over Painesville's greatest load growth area, DJ 370; NRC 141, together with Painesville's promise not to seek to serve that area in the future, Tr. 3624A; Tr. 3133-3135.

CEI takes the position that it was Painesville which first proposed the transfer of a customer service area to CEI and that there was no discussion about precluding Painesville from seeking to serve future customers in the area.³³⁷

CEI first proposed an exchange of customers and a territorial agreement with Painesville in 1962.³³⁸ CEI revived its proposal for an exchange of customers in 1964 or 1965.³³⁹ There is no dispute that CEI was the initiator of these proposals. CEI's disagreement relates to the third such proposal, made in 1974.³⁴⁰ CEI relies on the testimony of Wayne Milburn, Painesville's Law Director and negotiator with CEI, who stated that he made the proposal in 1973 as a partial means of funding the interconnection with CEI.³⁴¹ However, Painesville later changed its mind because (1) it found that it would not be able to finance its bonds without the customers in Perry who were to have been given to CEI, (2) the value of the interconnection was not as great as the value

³³⁵ Finding 133, 5 NRC at 201.

³³⁶ *Id.* at 177-78.

³³⁷ Brief, p. 178.

³³⁸ Staff Exh. 144.

³³⁹ Tr. 3624-A to 3629.

³⁴⁰ See Finding 67, 5 NRC at 177.

³⁴¹ Appl. Exh. 195, pp. 31-32 and 70-72.

of the revenue plus the future potential revenue in the area,(3) there was concern about the legality of the transfer and (4) it would have been bad public relations for the city to abandon those customers.³⁴²

Yet, in 1974, CEI made an attempt to get Painesville to reconsider and accept the transfer of territory and customers.³⁴³ This initiative was clearly CEI's and, in our view, constituted monopolization under Section 2 of the Sherman Act.

Moreover, Mr. Milburn wrote, in a 1973 letter to the staff:³⁴⁴

The city of Painesville has been negotiating for a couple of years with the Cleveland Electric Illuminating Company (C.E.I.) for a tie-in to provide stand-by power in the event of an outage.

We have never been refused. In fact, we have been offered a tie-in at a cost of about Seven Hundred Fifty Thousand Dollars (\$750,000.00) which they know our small municipal plant cannot pay. It is possible that something will be worked out.

Meantime the C.E.I. uses its great economic power to compete with us for our customers while holding out the hope that "something" can be worked out.

And, in explaining the reason for his proposal to sell the Perry territory to CEI, Mr. Milburn said:³⁴⁵

We had to find 750,000 bucks. We didn't know how to find it and I proposed to them they buy the Perry Lines.³⁴⁶

In studies conducted by CEI in 1970 and 1972, CEI listed acquisition of Painesville's customers in Perry Township as possible objectives to be obtained in return for an interconnection with the city.³⁴⁷ Naturally the CEI people "jumped up and down in glee" when Mr. Milburn first made the proposal.³⁴⁸ We conclude from all this that for CEI to have used its monopoly power in the wholesale and coordination services markets to extract this proposal from a small retail competitor was monopolization under Section 2 of the Sherman Act.

CEI also takes issue with the finding below that CEI sought "Painesville's promise not to seek to serve that area in the future . . .,"³⁴⁹ relying on the testimony of Mr. Milburn that the question of Painesville's right to serve

³⁴² *Id.*, p. 32; Tr. 3177-79.

³⁴³ Staff Exh. 141.

³⁴⁴ Staff Exh. 137.

³⁴⁵ Appl. Exh. 195, p. 32.

³⁴⁶ *See also id.*, pp. 70-71.

³⁴⁷ Exh. DJ-364, p. 2; Exh. DJ-371, p. 102765. *See also* Exh. DJ-369.

³⁴⁸ Apl. Exh. 195, p. 32.

³⁴⁹ Finding 70, 5 NRC, *supra* at 177-78; Brief, p. 178.

future customers in the area was never discussed.³⁵⁰ However, Mr. Pandy, Painesville's electric power superintendent charged with managing and administering the city's electric system,³⁵¹ testified that CEI's proposal was that CEI would build and pay for the interconnection "in exchange for the customers that the city served in Perry as well as the future load growth potential of the Perry area."³⁵² A memorandum from CEI's vice president for engineering³⁵³ to its President, Mr. Rudolph, dated November 6, 1972 suggested: "An agreement which would transfer customers outside Painesville city to CEI and confine future Painesville Munny expansion to the city limits, might be worth careful study."³⁵⁴ And an internal CEI memorandum of the previous month concerning the purchase of Painesville's customers in Perry township as a means of financing the interconnection stated: "Moreover, a commitment to insure no further expansion of the Painesville service territory would be advisable."³⁵⁵ Thus, we think that the Licensing Board's finding was in accord with the weight of the evidence. Beside, once the city had given up its customers and transmission lines in the area,³⁵⁶ it was not likely to be able to serve it in the future. As the Licensing Board wrote:³⁵⁷

Applicants recognize the phenomenon in the electric industry of "one time competition", that once acquired, utilities "serve forever a new customer," App. ff 23.05. It requires no analysis, it is axiomatic, that, with this factor in the industry, territorial and customer allocation agreements cause rigidity in the market. The longer they are in force, the less they are needed.

F. The Impact of the Agreements

We reject categorically Toledo Edison's assertion³⁵⁸ that we may not condemn their territorial agreements with other utilities without assessing their actual impact on competition. An agreement between competitors to divide markets territorially is illegal *per se*. *United States v. Topco Associates*, 405 U.S. 596 (1972); *Gainesville Utilities Dept. v. Florida Power and Light Company*, 573 F.2d 292 (5th Cir.), *cert. denied*, 58 L.E.d 2d. 424 (1978). Therefore, it is unnecessary to inquire into its actual effect on the market in question.³⁵⁹

³⁵⁰ Appl. Exh. 195, p. 33.

³⁵¹ Tr. 3095-96.

³⁵² Tr. 3134.

³⁵³ Tr. 10,347.

³⁵⁴ Exh. DJ-371, p. 012765.

³⁵⁵ Exh. DJ-369.

³⁵⁶ See Appl. Exh. 195, pp. 31-32.

³⁵⁷ Finding 114, 5 NRC, *supra* at 194.

³⁵⁸ Brief, pp. 192-94.

³⁵⁹ We note, in passing, that Toledo Edison's assumption (at pp. 192-94 of applicants' main brief) that the territorial agreements applied only to the retail market is manifestly incorrect. Of the three territorial agreements between Toledo Edison and neighboring investor-owned utilities

(Continued on next page)

X. TOLEDO EDISION—ACQUISITIONS

Toledo Edison takes exception to Findings 158 and 159 of the opinion below³⁶⁰ which found, *inter alia*, that Toledo Edison had monopoly power in its service area, had an active policy of trying to acquire municipal electric systems and, since 1965, did in fact acquire two self-generating systems, Clyde and Waterville, and one distribution system, Libertyville. Basically, its arguments are that the effect on competition of the three acquisitions was *de minimis*, and that, despite anything Toledo Edison might have done, these systems could not survive because they were inefficient, unreliable and short of financial resources.³⁶¹

It is not clear from the opinion below that the Licensing Board held that Toledo Edison's acquisitions and acquisition policy, in and of themselves, violated the antitrust laws. Whether or not it so held, however, it is clear to us that they did.

To begin with, the *de minimis* argument is not well taken. "Monopolization, proscribed by Section 2 of the Sherman Act, occurs when an individual or group uses market power to control prices or to control or to exclude competitors," *Moore v. Jas. H. Matthews & Co.*, 473 F.2d 328, 332 (9th Cir. 1973), citing *United States v. E.I. DuPont DeNemours and Co.*, 351 U.S. 377 (1956). The inquiry in Section 2 cases is always directed toward ascertaining whether defendant had monopoly power and used it to exclude competition, not toward how much competition was excluded. Even under Section 7 of the Clayton Act, where the question is whether the effect of an acquisition "may be *substantially* to lessen competition or to tend to create a monopoly,"³⁶² the Supreme Court has said, on at least two occasions, that, "if concentration is already great, the importance of preventing even slight increases in concentration and so preserving the possibility of eventual deconcentration is correspondingly great." *United States v. Aluminum Co. of America*, 377 U.S. 271, 279 (1964); *United States v. Philadelphia National Bank*, 374 U.S. 321, 365 n. 42 (1963). This principle should apply *a fortiori* where the charge is monopolization.

Nevertheless, even if the acquisitions and the policy to acquire were not illegal in and of themselves, they would be relevant as part of a pattern of monopolistic conduct under Section 2. It is not necessary that each component of a monopolistic scheme be illegal in itself. See *United States v. International Business Machines Corp.*, CCH 1975-2 Trade Cases 60,495

(Continued from previous page)

which were found by the Licensing Board, two (those with Ohio Power and Consumers Power) applied to the wholesale market. See Section IX(B) of this opinion, *supra* at pp. 369-370, and Findings 164(C) and 165, 5 NRC at 214-15. Of course, we have reversed the decision with respect to the Consumers agreement. See Section X(C), *supra*, at pp. 370-373.

³⁶⁰ 5 NRC, *supra*, at 211-13.

³⁶¹ Brief, pp. 185-89.

³⁶² 15 U.S.C. Section 18 (1970), emphasis added.

(S.D.N.Y. 1975). As was stated in *American Tobacco Co. v. United States*, 147 F.2d 93, 107 (6th Cir. 1944), *aff'd*, 328 U.S. 781 (1946):

Where the several acts charged are lawful, nevertheless, if bound together as parts of a single plan, the plan may make the parts unlawful. [Citation omitted.] Thus, a contract may not be inherently illegal, but if part of a general scheme of monopoly, it falls within the condemnation of the statute. [Citation omitted.]

The Licensing Board found (and we are affirming all but one of its findings³⁶³): (1) that Toledo Edison had territorial agreements with private utilities and imposed them on wholesale customer municipalities,³⁶⁴ (2) that it refused to wheel power to Bowling Green and Napoleon in order to cement their dependence on its own more expensive power,³⁶⁵ (3) that when Napoleon requested waiver of a provision in an agreement which provided that Toledo Edison would not wheel Buckeye power to a municipal wholesale customer of an investor-owned utility unless that customer disconnected from the utility and operated in isolation for 90 days, it refused,³⁶⁶ (4) that it refused to operate in synchronism with Napoleon if the latter should obtain Buckeye power,³⁶⁷ (5) that it refused to sell wholesale power to Waterville, an isolated self-generating municipal system, ultimately forcing Waterville to sell its system to Toledo Edison,³⁶⁸ and (6) that it refused to permit Napoleon and other municipalities to share ownership of large scale generating facilities.³⁶⁹ It is the totality of this conduct which must be evaluated to see if the finding of monopolization can be sustained.

"Section 2 of the Sherman Act condemns any enterprise which has exercised power to control a defined market if that power is to any substantial extent the result of barriers erected by its own business methods—even though not predatory, immoral or violative of Section 1 of the Act—unless it is shown that the barriers are exclusively the result of superior skills, superior products, natural advantages, business acumen or the like." *Duplan Corp. v. Deering Milliken, Inc.* 444 F. Supp. 648, 684-85 (D. S.C. 1977); *accord, United States v. United Shoe Machinery Corp.*, 110 F. Supp. 295, 344-45 (D. Mass. 1953), *aff'd*, 347 U.S. 521 (1954). In our view, many of the practices of Toledo Edison were either predatory or violative of Section 1 of the Sherman Act. But, even if this were not so, its pattern of conduct constituted monopolization under Section 2 because it was the acquisition or maintenance of monopoly power

³⁶³ *Supra*, pp. 369-373.

³⁶⁴ 5 NRC, *supra*, at 214-17.

³⁶⁵ *Id.* at 217-21.

³⁶⁶ *Id.* at 219-21.

³⁶⁷ *Id.* at 220.

³⁶⁸ *Id.* at 221-22.

³⁶⁹ *Id.* at 222-23.

by means (at least in part) of barriers erected by Toledo Edison's own business methods and not merely the result of superior skills or products, natural advantages, business acumen or historic accident. *See United States v. Grinnel Corp.*, 384 U.S. 563, 570-71 (1966); *Duplan, supra*; *United Shoe, supra*.³⁷⁰ Toledo Edison cannot say, in the familiar words of Learned Hand,³⁷¹ that monopoly was "thrust upon it."

XI. TOLEDO EDISON—JOINT OWNERSHIP OF FACILITIES

The weight of the evidence supports the findings of the Licensing Board³⁷² that Toledo Edison Company was not willing to consider joint ownership of large scale generating facilities with Napoleon and other municipal electric systems, with the exception of joint construction of a refuse-burning unit, consideration of which began after the start of these proceedings.³⁷³ Toledo Edison points to evidence that, in December 1972, in response to a general inquiry, it wrote AMP-O (American Municipal Power - Ohio, Inc.) that it would be "willing to participate with AMP-O in the generation, wheeling, accepting and delivering bulk power within our general service area, providing equitable, technological, financial, legally feasible, and other arrangements can be arrived at through studies of your proposals."³⁷⁴ This letter was written after the start of these antitrust proceedings. Such general expressions of willingness, made under the gun of litigation, cannot prevail when contrasted with the prior denials of specific requests by individual municipalities for joint ownership of generating units, wheeling and wholesale power.³⁷⁵

In addition, Toledo Edison cites its offer of joint ownership of large generating facilities contained in Applicants' Exhibit 44. As we have already noted, however,³⁷⁶ that offer was not adequate.

XII. OHIO EDISON—NEGOTIATIONS WITH WCOE

Twenty one municipal wholesale customers of Ohio Edison Company ("WCOE") reached agreement with Ohio Edison, as part of the settlement of a rate case before the Federal Power Commission, to study a new form of power arrangement for the municipalities.³⁷⁷ WCOE hired an engineering firm to

³⁷⁰ Thus, even assuming *arguendo* that the municipal systems acquired by Toledo Edison were inefficient, unreliable and short of financial resources, that does not exonerate Toledo Edison. It is not a defense to murder that the victims were sick when you drowned them.

³⁷¹ *United States v. Aluminum Co. of America*, 148 F.2d 416, 429 (2d Cir. 1945).

³⁷² Findings 181-82, 5 NRC, *supra*, at 222-23.

³⁷³ It is hard to imagine where Toledo Edison would turn for large amounts of garbage, if not to municipalities.

³⁷⁴ Applicants' Exh. 131, written in response to Applicants' Exh. 250.

³⁷⁵ See Findings 169-182, 5 NRC, *supra*, at 217-23.

³⁷⁶ *Supra*, pp. 320-322.

³⁷⁷ Finding 126, 5 NRC, *supra*, at 198.

study the possibilities for such an arrangement³⁷⁸ The Licensing Board listed seven possibilities which it found were eliminated from the study at the outset at the insistence of Ohio Edison.³⁷⁹ Ohio Edison objects vigorously to these findings; it asserts that it merely put forth negotiating proposals, not restrictions on the scope of the study. In support of that thesis, it argues that the matters said by the Licensing Board to have been excluded from the study were in fact considered therein.³⁸⁰

It is true that several of the alternatives found below to have been excluded from the study were, in fact, considered in it.³⁸¹ But the degree to which Ohio Edison restricted the scope of the study is not terribly significant. What is significant is that Ohio Edison had monopoly power.³⁸² Therefore, in negotiations with municipal systems dependent upon it for power, insistence on anticompetitive or exclusionary conditions which would tend to maintain its monopoly constituted monopolization. See *Otter Tail Power Co. v. United States*, 410 U.S. 366, 377 (1973). Acts, even if lawful in the absence of monopoly, "because of their tendency to foreclose competitors from access to markets or customers or some other inherently anticompetitive tendency, are unlawful under Section 2 if done by a monopolist . . ." *Sargent-Welch Scientific Co. v. Ventron Corp.*, 567 F.2d 701, 711-12 (7th Cir.) cert. denied 439 U.S. 822 (1978).

Ohio Edison goes onto complain of the injustice of its having received any antitrust condemnation at all for the WCOE negotiations in view of the undisputed fact³⁸³ that it agreed in principle to the "prepayment of power purchases" plan recommended by the engineering firm in the study as the best alternative. There are several answers to that. First, though the study did explore a few areas which were contrary to Ohio Edison's position, it did not explore all of them.³⁸⁴ Some of the options not studied might have been better for WCOE than the plan recommended in the study. Second, the "prepayment of power purchases" plan did not give WCOE access to any particular

³⁷⁸ See *Staff Exh. 44, p. I-1.*

³⁷⁹ Findings 127 and 128, 5 NRC, *supra*, at 198-200.

³⁸⁰ Brief, pp. 219-20 and n.250.

³⁸¹ See *Staff Exh. 44* at the places cited in note 250 of applicants' brief at 219-20.

³⁸² Findings 5 and 99, 5 NRC, *supra* at 153-54 and 187-88.

³⁸³ Finding 129, *id.* at 200.

³⁸⁴ This can be seen by comparing Finding 127, *id.* at 198-200, with *Staff Exh. 44*. For example, note 250 of applicants' brief suggests that the study's "prepayment of power purchases plan" considers alternatives to Ohio Edison's proposed requirement that "the WCOE power not supplied from WCOE generation would be supplied exclusively from the Ohio Edison System." Finding 127, subparagraph 7, *id.* at 200. Yet, in describing the advantages of this plan for Ohio Edison, the study states that Ohio Edison "would retain the WCOE as total wholesale customers (with the exception of Oberlin and Newton Falls, Ohio) of the Company." *Staff Exh. 44, p. VII-2*. Similarly, the study does not contemplate third party wheeling or the resale by WCOE of baseload power to parties other than Ohio Edison.

generating units (including nuclear units) or any kind of property interest in generating equipment at all.³⁸⁵ Finally, and most important of all, there is no indication in any parts of the record cited to us on this subject by Ohio Edison that Ohio Edison ever backed down from the so-called negotiating positions it had taken prior to the study, with the exception of the 10 percent of peak load limitation.³⁸⁶ Because these restrictive positions would have been violative of Section 2 of the Sherman Act, agreement by Ohio Edison to the "prepayment of power purchases" plan subject to them also would have constituted monopolization.

XIII. OHIO EDISON—ACQUISITIONS

The Licensing Board made a number of findings concerning acquisitions by Ohio Edison,³⁸⁷ all of which except one are clearly in accord with the evidence and the law. It is the exception which we shall discuss.

Finding 103 states:³⁸⁸

In 1965, Ohio Edison acquired the system of Lowellville, in 1973 it acquired the system of Hiram and later it acquired the system of East Palestine, Ohio. The record does not demonstrate the circumstances surrounding the acquisitions of these municipal systems, DJ 587, p. 66. They indicate only that Ohio Edison had acquired three potential direct horizontal competitors, eliminated any possibility of supplier competition for their loads, and that the pattern of consolidation by acquisition in its service area continues.

Insofar as these statements apply to East Palestine, they present a problem.

So far as we know, the only evidence of record concerning the East

³⁸⁵ This latter point was driven home in a letter from Ohio Edison's James Wilson to WCOE's engineering firm (Applicants' Exh. 170 at p. 2) which points out that the "prepayment of power purchases" plan "inadvertently omitted" property taxes from the rate base. Municipalities would not have to pay property taxes on plants they owned. Section 5709.08 of the Ohio Revised Code exempts "public property used exclusively for a public purpose" from taxation. Property owned by a municipal corporation is public property. *City of Columbus v. County of Delaware*, 132 N.E.2d 747, 750 (1956). Furnishing a public utility service is a public purpose. *Ibid.* The word "exclusively" does not mean that the entire facility must be used by the municipality; the exemption applies to that part of the property or facility which is owned and used by the municipality. See *City of Toledo v. Jenkins*, 54 N.E.2d 656, 659, 663-64 (Ohio 1944). Property belonging to the state or its political subdivision "shall be considered as used exclusively for . . . public purposes . . . if it is . . . made available under the direction or control of such . . . political subdivision for use in furtherance of or incidental to its . . . public purposes and not with the view to profit." Ohio Revised Code Section 5709.121.

³⁸⁶ See Finding 127, paragraph 4, 5 NRC, *supra* at 199. This was replaced by another proposal which the Licensing Board also found to be unfairly restrictive.

³⁸⁷ Findings 100-03, *id.* at 188-90.

³⁸⁸ *Id.* at 190.

Palestine acquisition is contained in the written testimony of economist Harold Wein, a Justice Department witness.³⁸⁹ He there stated:

As of March 1974, OE reported to the Department of Justice that a proposal submitted to the city of East Palestine for its acquisition by OE was under consideration by the city. I am informed by counsel that the system of East Palestine has been acquired by OE since then. East Palestine, Hiram, and Norwalk, the most recent acquisitions, were small generating systems, the largest having a generating capacity of 32,000 kw (Norwalk).

Thus, even our knowledge that the acquisition occurred is based on what a witness says he heard from counsel.

After the hearing, Ohio Edison filed a motion for the dismissal of certain allegations of anticompetitive conduct made against it by the opposition parties.³⁹⁰ Among these allegations was the following:³⁹¹

G. Ohio Edison has eliminated, through acquisition, competing municipal electric systems, including the following systems which had their own generation capability; Norwalk, Hiram and East Palestine.

With respect to East Palestine, the reason given in support of the motion was that Ohio Edison is "unaware of any evidence that has been introduced concerning Ohio Edison's purchase of the East Palestine electrical system"³⁹² In a ruling from the bench on June 16, 1976, the Licensing Board dismissed the allegation with respect to East Palestine but denied the motion as to the other municipal systems.³⁹³ Two days later, in the course of the introduction of documentary evidence by the parties, counsel for Ohio Edison stated that three specified documents dealing with the acquisition of East Palestine would not be introduced because, "in view of the Board's order of two days ago, we feel that would be repetitive and unnecessary."³⁹⁴

In view of the findings as to Ohio Edison's monopoly power and its history of acquiring smaller systems,³⁹⁵ as well as the rule that neither predatory conduct nor specific intent need be shown to establish monopolization,³⁹⁶ the

³⁸⁹ Exh. DJ-587, at p. 67.

³⁹⁰ The motion was dated April 20, 1976.

³⁹¹ Motion, p. 14.

³⁹² *Id.*, pp. 14-15.

³⁹³ Tr. 11,755-56.

³⁹⁴ Tr. 11,823-24.

³⁹⁵ See Findings 99-103, 5 NRC, *supra*, at 187-90.

³⁹⁶ See pp. 328-329, *supra*; *United States v. Griffith*, 334 U.S. 100, 105-06 (1948); *United States v. Aluminum Co. of America*, 148 F.2d 416, 431-32 (2d Cir. 1945); *United States v. United Shoe Machinery Corp.*, 110 F. Supp. 295, 346 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521 (1954).

Board's findings as to East Palestine would be sustainable on little more than evidence that the acquisition occurred. Putting aside the problem of the skimpy hearsay evidence of its occurrence, we are disturbed because the Licensing Board's finding 103, insofar as it applies to East Palestine, comes directly within the ambit of the dismissed allegation. Moreover, Ohio Edison could have defended against the charge of monopolization by showing that this acquisition was "thrust upon it," *i.e.*, that it was forced to make the acquisition even though it had no desire to do so.³⁹⁷ For all we know, the documentary evidence on East Palestine which it withheld may have been relevant to that defense. In any event, Ohio Edison's counsel acted reasonably in relying on the Licensing Board's dismissal of the allegation concerning East Palestine and in deciding that the proffer of evidence on that question would be unnecessary.³⁹⁸ It would therefore be unfair, and probably even a violation of due process, to permit the Licensing Board's findings as to the East Palestine acquisition to stand. We therefore *reverse* them.

XIV. OHIO EDISON AND PENNSYLVANIA POWER—PRICE SQUEEZE

The Licensing Board found that Ohio Edison Company and Pennsylvania Power Company charged wholesale rates to municipalities which were higher than comparable industrial rates, thus creating a price squeeze which violated the Robinson-Patman Act (Clayton Act, Section 2, 15 U.S.C. Section 13).³⁹⁹ We agree with all that the Board below has said on this subject but we wish to supplement it briefly.

First, we should add that the price squeeze violated Section 2 of the Sherman Act, as well as the Robinson Patman-Act, because it tended to maintain or extend the existing monopoly position of Ohio Edison and Pennsylvania Power in the retail market.

Second, applicants argue that their rate structure cannot be discriminatory because their retail rates are regulated by state agencies and their wholesale rates are regulated by the Federal Power Commission (now the Federal Energy Regulatory Commission).⁴⁰⁰ This precise argument was rejected by the Court of Appeals in *City of Mishawaka v. Indiana and Michigan Electric Company* 560 F.2d 1314 (7th Cir. 1977), *cert. denied*, 436 U.S. 922 (1978), which held that an alleged price squeeze perpetrated on municipalities may be examined by a district court under Section 2 of the Sherman Act. The words of

³⁹⁷ See *United States v. Aluminum Co. of America*, *supra*, at 429.

³⁹⁸ Although the record shows that the Licensing Board Chairman went off the record when counsel said that the ruling made it unnecessary to offer the evidence (Tr. 11,824), there is nothing on the record expressing the Board's disagreement with his statement.

³⁹⁹ Findings 155-57, 5 NRC, *supra* at 208-11.

⁴⁰⁰ Brief, pp. 254-55.

Judge Blumenthal, in rejecting a claim of exclusive FERC jurisdiction over price squeeze, in *City of Groton v. Connecticut Light and Power Company*, 456 F. Supp. 360, 367 (D. Conn. 1978), are apt here:

In the present case, the rate structure and practices challenged by the plaintiffs are not the product of "regulatory coercion." The terms and conditions are in the first instance the product of the regulated utility. Although the defendants' tariffs are reviewed and in many instances modified by the FERC, defendants exercise sufficient freedom of choice concerning the contents of the rate schedules to require them to take responsibility for the harmful consequences, if any, of their conduct [Footnote omitted].

Finally, Ohio Edison and Pennsylvania Power take issue with the Licensing Board's view that wholesale rates which are higher than industrial rates are unlawfully discriminatory unless the generating utilities can justify the difference between the two rates.⁴⁰¹ This holding of the Licensing Board has been vindicated, however, by the recent judicial decision in *City of Mishawaka v. American Electric Power Co.*, 465 F. Supp. 1320 (N.D. Ind. 1979). The Court there found that "the absence of 'relative parity' " between wholesale rates charged to municipalities and rates charged to retail customers for like amounts of electric power establishes a price squeeze which creates a rebuttable presumption that the rates are "unduly discriminatory."⁴⁰² As justification for the rate difference was not proven by the defendants and as the defendants had monopoly power, the Court held that Section 2 of the Sherman Act had been violated. *Id.* at 1328 and 1341. Moreover, the Licensing Board's rule is consistent with Section 2(b) of the Robinson-Patman Act, 15 U.S.C. Section 13(b), which provides that, once there is proof of price discrimination, "the burden of rebutting the prima-facie case thus made by showing justification shall be upon the person charged with a violation of this section, . . ." See *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 694 (1967). In addition, as the Licensing Board pointed out,⁴⁰³ only applicants "have the data by which cost justification may be proved or disproved." Plainly, its decision on burden of proof was correct.⁴⁰⁴

⁴⁰¹ Brief, pp. 250-53.

⁴⁰² *City of Mishawaka v. American Electric Power Co.*, *supra*, 465 F. Supp. at 1333.

⁴⁰³ 5 NRC, *supra* at 210 n.101.

⁴⁰⁴ Applicants, at pp. 90-91 of their Reply Brief (n. 75), call our attention to the FERC's regulation on price squeeze (18 C.F.R. 2.17 (1978)) and contend that the opposition parties here have not proven all of the elements required for a *prima facie* case by that regulation. Although they do not specify which elements are not proven, we believe that the unproven elements are the fourth and fifth—"The wholesale customer's prospective rate for comparable retail service, *i.e.*, the rate necessary to recover bulk power costs (at the proposed wholesale rate) and distribution costs" and "An indication of the reduction in the wholesale rate necessary to eliminate the price

Although the applicants in question did offer some evidence on cost justification, it was conclusionary and contradicted by another witness.⁴⁰⁵ We agree with the Licensing Board that the evidence was insufficient to carry applicants' burden of proof on this defense.⁴⁰⁶

XV. NEXUS

Two of the arguments made by applicants in their challenge to the Licensing Board's findings on the issue of nexus⁴⁰⁷ are (1) that only the applicants' latest offer for nuclear access, and not prior anticompetitive practices of the applicants, has any relevance to "activities under the license" because only it will reflect the "activities under the license" which must be the subject of the Commission's finding under Section 105c(5) of the Atomic Energy Act (42 U.S.C. Section 2135c(5)) and (2) that third-party wheeling has no connection with "activities under the license."⁴⁰⁸ Applicants ignore the fact

(Continued from previous page)

squeeze alleged." However, it seems obvious to us that these two requirements are imposed by the FERC because it has the duty to change the wholesale rate in a manner which will eliminate the effect of the price squeeze on the wholesale customer, while still being equitable to the filing utility. Since we have no jurisdiction over rates, we have no need for proof of these matters. Moreover, we note that Section 2.17(e) puts "the burden of proof (i.e. the risk of nonpersuasion) to rebut the allegations of price squeeze and to justify the proposed rates . . . on the utility proposing the rates . . ." i.e. on the utility selling at wholesale. This is in accord with what the Licensing Board did.

⁴⁰⁵ Applicants rely on the testimony of Ohio Edison's chief rate and valuation engineer—James Wilson. (Tr. 10,995). Mr. Wilson tried to show that Ohio Edison's wholesale municipal rate was higher than the company's retail industrial rate because municipal customers contribute more to Ohio Edison's peak load than industrial customers do. (Tr. 11,046-47).

The Board recessed the hearing for five minutes so that Mr. Wilson could draw a graph, in order to clarify his testimony. Mr. Wilson's hand-drawn sketch appears as Appf. Exh. 166. It is explained at Tr. 11,051-52. The chart shows that the municipal and Ohio Edison systems peak at 7 P.M., while the industrial customers peak at 1 P.M. Wilson testified that industrial customers of Ohio Edison only have 75 percent of their peak load at the time of Ohio Edison's peak. (Tr. 11,050-51). But, on cross-examination, he admitted that the graph only applies to the winter months and that, during the summer, Ohio Edison, the municipal utilities and industrial customers *all* peak at about the same time in the afternoon (Tr. 11,158-59).

Justice Department witness Kampmeier testified that many municipalities buying power from CAPCO companies have their peaks either at a different time of day or at a different time of year. (Exh. DJ-450, p. 36). Moreover, Wilson testified that the demand component of the cost of power for Ohio Edison is only 50 percent of the total cost. (Tr. 11,047). Rates cannot be justified by looking at only half of the costs of the service. In this regard, we note that Wilson provided no explanation of why Ohio Edison's fuel adjustment provisions were different for municipal and industrial customers. (Exh. DJ-450 at 34; Tr. 11,128-29). Finally, applicants did not even attempt to justify the wide disparity between Pennsylvania Power's municipal and industrial rates. Mr. Wilson's testimony dealt only with Ohio Edison's rates.

⁴⁰⁶ See Finding 157, 5 NRC, *supra*, at 210-11.

⁴⁰⁷ Findings 216-22, *id.* at 237-43.

⁴⁰⁸ Brief, pp. 128-29 and 133-34.

that we rejected these arguments in *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unite No. 1), ALAB-279, 1 NRC 559 (1975), where we stated (at 572-73):

Accordingly, we conclude that the legislative history of Section 105c does not support the applicant's argument that the Commission must consider the operations of each nuclear plant in isolation when making its precicensing antitrust review. On the contrary, the Commission's statutory obligation is to weigh the anticompetitive situation—which to us means that operations in an "air tight chamber" were not intended. A review conducted under the artificial restraints suggested by the applicant would allow long understood and well recognized patterns of anticompetitive conduct to evade Commission notice. It is far too late in the day to dispute that it runs counter to basic antitrust precepts to exercise monopoly power—however lawfully acquired initially—to foreclose competition or to gain competitive advantage, or to use dominance over a facility controlling market access to exclude competition and preserve a monopoly position. Electric utility companies are no more free than others to engage in those practices; their unjustified refusals to wheel power to or to interconnect with smaller entities in the field have regularly been called to account as violative of antitrust policies. It was a key purpose of the precense review to ". . . nip in the bud any incipient antitrust situation." We can therefore perceive no valid reason why the Commission should wear blinders when confronted by such matters. No statute should be construed to render it ineffective. Undoubtedly there are outer limits to the Commission's antitrust jurisdiction. But there is nothing lurking in the background of Section 105c of the Atomic Energy Act to place it beyond this agency's power to look behind an offer of "access" to a nuclear facility to see if it is *bona fide* or, because of the offeror's concurrent refusal to wheel power, but a mask for a situation inconsistent with the antitrust laws. [Footnotes omitted.]

XVI. RELIEF

Both the applicants and the city of Cleveland appeal from various aspects of the relief ordered below. We will treat the applicants' appeal first.

A. Applicants' Appeal

1. Public Interest

Applicants claim that the relief provided for below was unlawful because it was not predicated upon findings as to public interest factors other than those bearing on antitrust policy.⁴⁰⁹ Their position is based on Section 105c(6) of the Atomic Energy Act (42 U.S.C. Section 2135(c) (6)) which provides:

⁴⁰⁹ Brief, pp. 284-86.

In the event the commission's finding under paragraph (5) is in the affirmative, the Commission shall also consider, in determining whether the license should be issued or continued, such other factors, including the need for power in the affected area, as the Commission in its judgment deems necessary to protect the public interest. On the basis of its findings, the Commission shall have the authority to issue or continue a license as applied for, to refuse to issue a license, to rescind a license or amend it, and to issue a license with such conditions as it deems appropriate.

We have had occasion in this very case to comment on the meaning of Section 105c(6). In our opinion denying a stay, ALAB-385, 5 NRC 621, at 630-31, we said:

To be sure, as the applicants point out, the Commission has authority under Section 105c(6) of the Act to license the operation of a nuclear power plant notwithstanding the anticompetitive consequences of doing so. But, as we noted in the "*Grandfather*" decision, "[t]he legislative history makes it very clear that the Commission was to resort to authority under Section 105c(6) sparingly. It was to be invoked only in the exceptional case where the power from the plant is vitally needed and the antitrust impact of its operation cannot be otherwise ameliorated . . ."²⁶ [Citations omitted.]

²⁶ *Davis-Besse*, ALAB-323, *supra*, 3 NRC at 346 fn. 41. At the cited page the Joint Committee Report states: "While the Commission has the flexibility to consider and weigh the various interests and objectives which may be involved, the committee does not expect that an affirmative finding under paragraph (5) would normally need to be overridden by Commission findings and actions under paragraph (6). The Committee believes that, except in an extraordinary situation, Commission-imposed conditions should be able to eliminate the concerns entailed in any affirmative finding under paragraph (5) while, at the same time, accommodating the other public interest concerns found pursuant to paragraph (6)." H.R. Rep. No. 91-1470 (also S. Rep. No. 91-1247), 91st Cong., 2nd Sess. (1970), p. 31.

Thus, it is clear that the public interest is to be consulted only in that rare case where it is not possible to fashion license conditions which eliminate the concerns entailed in the finding of a situation inconsistent with the antitrust laws. In the normal situation, however, the Commission is to issue the license, subject to "such conditions as it deems appropriate" in light of its findings under Section 105c(5).

2. Objections to Specific License Conditions

Applicants raise a variety of objections to some of the license conditions imposed below:

a. Percentage of Nuclear Plant Capacity to be Made Available to Others

Applicants object to Condition 9(a) which provides that applicants shall make available to requesting entities in the CCCT area (*i.e.*, the area served by applicants) up to 10 percent of the capacity of the Davis-Besse and Perry units and up to 20 percent of future units for which any applicant applies for a construction permit or operating license during the next 25 years.⁴¹⁰ Their first line of attack is that the percentages are arbitrary.⁴¹¹ This point was addressed by the Licensing Board in its decision denying a stay (LBP-77-7, 5 NRC 452, 462-63) as follows:

For purposes of additional clarification, we discuss why we selected the 10 percent figure for Davis-Besse and Perry. Applicants' proposals for access (Ex. A-44, attached to Applicants' motion) offers participation only in "reasonable amounts." Throughout our findings, however, we have indicated that what Applicants advance as reasonable may in fact be unreasonable and anticompetitive. There was evidence of record that Applicants' offers to supply wholesale power to the WCOE group contained limitations tied or related to existing load levels of Ohio Edison wholesale customers. These limitations themselves were anticompetitive in that they gave Applicant companies assurance that any competition for retail customers would be limited. Restrictions also were placed on the use of wholesale energy obtained from Applicant companies to prohibit sale to industrial customers presently served by Applicants. Thus, we encountered a situation in which growth opportunities of Applicants' disadvantaged competitors were restrained. It, therefore, became necessary for the Board to ensure that energy from the Davis-Besse and Perry units be available to competitive entities in amounts we considered reasonable and that this energy be made available without restraints which would limit the owners of the power from competing with Applicants. We selected 10 percent as a figure not likely to be disruptive of Applicants' intended use of Davis-Besse and Perry power while at the same time preventing denial of requests because Applicants label them unreasonable. The difficulty in permitting Applicants to be the arbiter of the reasonability of requests for access should be obvious.

As to the provision that Applicants yield up to 20 percent of the capacity of future nuclear plants—which provision is effective for only a limited number of years—we perceive no basis for complaint that this

⁴¹⁰ 5 NRC, *supra* at 259.

⁴¹¹ Brief, p. 286.

license condition frustrates Applicants planning to service future load growth. Applicants have adequate notice of the possibility that up to 20 percent of the power from any newly proposed plant may be requested by competitive entities. At the same time, we have imposed strict time limitations during which such request must be honored. Thus, well prior to the completion of license proceeding, Applicants will know exactly how much power must be allocated to competitive entities and their plans will become firm long prior to the operation of the unit.

The reason we selected 20 percent rather than 10 percent as the amount of capacity to be made available for future units is because we do not want nonapplicant entities to encounter a ceiling on their ability to compete. As competition is enhanced these entities may need and desire additional generation. [Footnote omitted.]

We find this explanation reasonable and persuasive.

b. Allocation of Nuclear Capacity Among Requesting Entities.

Applicants also complain of the fact that Condition 9(a) requires them to sell capacity in their nuclear plants on a first come, first served basis.⁴¹² But the alternatives to that are either to permit applicants to decide how much to sell to whom⁴¹³ or to require parties to come back to the Licensing Board from time to time to make such decisions. As for the former method, the evidence and findings in this case show how badly the applicants abused this power in the past. As for the latter, it would entail much additional litigation, at great cost in time and money to the parties. We think that the Licensing Board's method, though certainly far from perfect, is both workable and reasonable. In the past, it was not the municipalities and cooperatives who blocked one another's attempts to get power; it was the applicants. There is reason to hope, therefore, that any conflicting claims of municipalities and cooperatives can be negotiated between them.

c. Wheeling Out—Impact on Reliability

Applicants contend that the wheeling provisions in the decision below⁴¹⁴ may result in the excessive export of nuclear power from the CCCT area, thus threatening the reliability of electric service in the area.⁴¹⁵ In response to this, the Licensing Board said in its stay decision:⁴¹⁶

It is anticipated that most of the power which may be requested either

⁴¹² Brief, pp. 286-87; see 5 NRC 452, *supra* at 462.

⁴¹³ This would be the result of the offer in Applicants' Exh. 44 at 3 to offer nuclear participation "in reasonable amounts."

⁴¹⁴ Licensing condition 3, 5 NRC, *supra* at 257.

⁴¹⁵ Brief, pp. 287, 288.

⁴¹⁶ 5 NRC 452, *supra* at 463-64.

from present or future units will be used to supply energy requirements within the CCCT which otherwise would be supplied by Applicants. Thus, we discern a tradeoff between the reduced amount of power which will be available to Applicants and the lesser demands which will be placed upon their systems.

• • •

One of the points of greatest concern throughout these proceedings has been Applicants' unfair and anticompetitive efforts to restrict and control the use of all power generated or transmitted within the CCCT. Our conditions should be read as insistent that power purchased by a competitive entity in a nuclear unit, be available for whatever purposes it may designate. It is not Applicants' burden nor their privilege to decide on behalf of other entities where or to whom that power shall be sold.

It also might be noted that Applicants themselves engage in regional power exchange transactions which involve exports of power from the CCCT to neighboring power pools. The CAPCO agreement contemplates such sales and even provides a mechanism whereby one Applicant company wheels for another to accomplish this result. It is absurd for Applicants to challenge a license condition which does nothing more than make available to their competitors what Applicants long ago obtained through agreement with one another.

We agree with this but would add an additional point. It may be that some municipalities or cooperatives will want nuclear access but will either not want or not have the ability to join CAPCO. While License Condition 8 requires an applicant to share reserves with any interconnected generating entity, past experience shows that it may be difficult for a municipality or cooperative to negotiate an agreement with one of the applicants. It may be easier and more advantageous for it to coordinate with another electric generation system, possibly outside the CCCT area. To do so, it may want to wheel power out to such a system. Without the ability to wheel out, these entities may not be able to integrate effectively the nuclear power they have acquired into a reliable electric power system. Thus, the ability to wheel power out is important for them. And it will introduce competition in the coordination services market in the CCCT area.

d. Deadline for Commitments to Nuclear Plant Participation

Applicants take issue with License Condition 9(b)⁴¹⁷ insofar as it permits entities to make commitments for participation in future units up to two years after the filing of a license application for such units.⁴¹⁸ They say this is too

⁴¹⁷ 5 NRC, *supra* at 259.

⁴¹⁸ Brief, pp. 289-90.

long because the existence of new nuclear projects is known well in advance of the date on which an application for a license is filed. The city of Cleveland argues, on the other hand, that the time is needed because municipal systems are not consulted during the early planning stages and are not notified by CAPCO of its plans for particular units well in advance of the filing of a license application.⁴¹⁹

We think that the interests of both sides can be accommodated. We modify license condition 9(b) in the following way. If applicants have given detailed written notice of their plans to construct a nuclear power plant to a given entity, the entity will have two years from the receipt of the notice to request access to that plant and to commit itself to purchase it; provided, however, that the time for making such request and commitment shall not expire until at least three months after the filing of the application for a construction permit for that plant. Where an applicant is planning to operate a nuclear power plant which it did not build, the same notice procedure may be followed. The time will not expire until at least three months after the filing of an application for an operating license for that plant.⁴²⁰

e. Reduction in Wheeling Services

License condition 3⁴²¹ requires applicants to wheel power both to and from requesting entities (municipalities and cooperatives). It then states:

Such wheeling services shall be available with respect to any unused capacity on the transmission lines of Applicants, the use of which will not jeopardize Applicants' system. In the event Applicants must reduce wheeling services to other entities due to lack of capacity, such reduction shall not be effected until reductions of at least 5 percent have been made in transmission capacity allocations to other Applicants in these proceedings and thereafter shall be made in proportion to reductions imposed upon other Applicants to this proceeding. [Footnote omitted.]

Applicants attack this part of the condition on essentially two grounds: (1) that it will work great hardship on them by decreasing the reliability of their systems and by giving them planning problems; (2) that it would be impossible to reduce transmission for an applicant while giving a requesting entity all the

⁴¹⁹ Brief of the city of Cleveland, p. 184.

⁴²⁰ With respect to a plant as to which an Applicant had an ownership interest when the construction permit was applied for, it would make no sense to allow a small system to request nuclear access at the operating license stage if it did not do so at the construction permit stage. And there is no indication that the Licensing Board really intended that. Whether or not it did, however, we do not. Of course, relief might be available from the Commission in the event of significant changes in the applicants' activities or proposed activities. Atomic Energy Act Section 105c(2); *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), CLI-77-13, 5 NRC 1303, 1310 (1977).

⁴²¹ 5 NRC, *supra* at 257.

wheeling it wants.⁴²²

As for the first of these objections, we begin with the following statement of the Licensing Board in its stay opinion:⁴²³

The record indicates that there is abundant capacity available to meet license condition requirements. CEI has stipulated capacity to wheel PASNY power to Cleveland. See Applicants' Motion for Summary Disposition, August 15, 1974. Ohio Edison has agreed to sell displacement power to wholesale customers who otherwise would request direct wheeling from Buckeye's Cardinal generating station. TECO purports to be willing to effect transmission services for the Southeastern Michigan Cooperative. Duquesne has only one full requirements wholesale customer remaining. The record is devoid of any showing of hardship associated with our access requirements.

Thus, at least for the foreseeable future, it appears doubtful that applicants will have to reduce any of the wheeling that they do among themselves. However, should applicants' transmission capacity become tight, we think the condition is warranted. As the Licensing Board stated in its main opinion:⁴²⁴

The objective of this requirement is to prevent the preemption of unused capacity on the lines of one Applicant by other Applicants or by entities the transmitting Applicant deems noncompetitive. Competitive entities are to be allowed opportunity to develop bulk power services options even if this results in reallocation of CAPCO transmission channels. This relief is required in order to avoid prolongation of the effects of Applicants' illegally sustained dominance.

If the condition creates some hardship, suffice it to say that "those caught violating the [Sherman] Act must expect some fencing in." *Otter Tail Power Co. v. United States*, 410 U.S. 366, 381 (1973), quoting from *FTC v. National Lead Co.*, 352 U.S. 419, 431 (1957).

As for the contention that the license condition would be impossible to implement, we are simply not convinced. The evidence cited for this proposition in footnote 306 of applicants' Brief certainly does not establish it. While changes in the transmission of power may sometimes entail technical problems, the operators of sophisticated power pools such as CAPCO are usually quite able to solve those problems. Moreover, we hasten to add that the condition is not as Draconian as footnote 306 would make it seem. Applicants would not have to reduce all of their transmission allocations with each other by 5% every time a reduction has to be made in order to wheel for a

⁴²² Brief, pp. 290-91.

⁴²³ 5 NRC 452, at 464.

⁴²⁴ 5 NRC, *supra* at 257 n. 171.

requesting entity. It would only have to make as much of a reduction as is necessary to accommodate the needs of that entity. In most cases that will be much less than a 5% across the board cut. The reduction will usually have to be made only on the transmission line carrying the wheeled power for the requesting entity, not on the entire system. The effects of the reduction can be mitigated in most cases by either re-routing power to the other applicant or by sending it power from a different generating plant. The 5% reduction only represents a point beyond which the applicants need not meet 100% of the needs of the requesting entity at some cost to themselves but may share the burden of insufficient transmission capacity proportionally.

However, should this license condition confront the applicants with a situation of extreme hardship or impossibility at some time in the future, they may petition the Licensing Board for relief from it. We hereby vest the Licensing Board with continuing jurisdiction to entertain such a petition. This is precisely what the District Court did in response to a similar argument in *Otter Tail, supra*, that interconnection or wheeling would “erode its integrated system and threaten its capacity to serve adequately the public”; and the Supreme Court held that that was a proper exercise of discretion. 410 U.S. at 381-82.

f. The Planning of Transmission Lines

The last paragraph of License Condition 3⁴²⁵ is as follows:

Applicants shall make reasonable provisions for *disclosed* transmission requirements of other entities in the CCCT in planning future transmission either individually or within the CAPCO grouping. By “disclosed” is meant the giving of reasonable advance notification of future requirements by entities utilizing wheeling services to be made available by Applicants.

Applicants say that this “obligates Applicants to undertake transmission construction that may ultimately not be used” because the condition does not require an entity to “make any firm commitment in advance to use or pay for the transmission once it is constructed.”⁴²⁶ Applicants have simply misread the condition. It does not require applicants to construct anything without a firm commitment by the requesting entity. It merely requires them to make provision for such entities’ disclosed needs in their *planning* of future transmission facilities. If an entity is not willing to make a firm commitment in advance of construction, then nothing need be constructed for its use.

g. Reserve Sharing

License condition 4(c)⁴²⁷ provides that entities applying for membership in

⁴²⁵ 5 NRC, *supra* at 257.

⁴²⁶ Brief, pp. 291-92.

⁴²⁷ 5 NRC, *supra* at 258.

CAPCO “may elect to participate on an equal percentage of reserve basis rather than a P/N allocation formula for a period of twelve years from date of entrance.” License Condition 8⁴²⁸ permits “any interconnected generation entity in the CCCT” to share reserves with an applicant, at its option, “on an equal percentage basis or by use of the CAPCO P/N allocation formula or on any other mutually agreeable basis.” Applicants quarrel with the fairness of these conditions.⁴²⁹

We hold that the conditions are reasonable, for the reasons stated in Part VI of this opinion, pp. 334-339, *supra* and in footnote 173 of the Licensing Board’s main opinion, 5 NRC, *supra* at 258.

We note, by way of illustration, two pieces of evidence in the record which show how harsh it would be to apply the P/N formula to small systems upon joining CAPCO. A study done by Ohio Edison in 1967 indicated that, if the city of Cleveland were to join CAPCO in 1974, under the P/N formula, it would have to maintain reserves of 62.7 percent of peak load.⁴³⁰ And a study done in 1975 for WCOE by an independent consulting firm showed that, if WCOE were to buy participation in Ohio Edison’s portion of some CAPCO units and coordinate with Ohio Edison beginning in 1976, it would have to maintain reserves in that year equal to 283.9 percent of its peak load.⁴³¹

3. Failure to Impose Separate License Conditions for Each Applicant

Applicants allege that it was error for the Licensing Board to have “framed a single set of conditions to be applied uniformly to all Applicants.⁴³² This is so, it argues, because there were different inconsistencies with the antitrust laws in each of their service areas.

We disagree. Applicants forget that many of the violations of the antitrust laws which appear from the opinion below were the result of joint and concerted action by the applicants. Indeed, the CAPCO pool established a system whereby many of their activities are conducted jointly, many of their decisions are made jointly and, where this is not so, an individual decision may sometimes require the consent of the other members.⁴³³ In this kind of situation, it was necessary to have a single set of conditions applicable to all applicants. However, applicants’ professed fear that a violation by one applicant, acting alone and without the knowledge of the others, would create liability on the part of the other applicants⁴³⁴ is without foundation. We

⁴²⁸ *Id.* at 259.

⁴²⁹ Brief, p. 292.

⁴³⁰ Exh. C-46, p. no. 2.

⁴³¹ Staff Exh. 44, p. V-2.

⁴³² Brief, p. 293.

⁴³³ Notable in this regard is an applicant’s decision to sell part of its entitlement in a CAPCO plant to a non-member system. See p. 360, *supra*.

⁴³⁴ Brief, p. 293 n.308.

construe the conditions as creating both joint and several responsibility for compliance—joint when acting together (or pursuant to a common plan, agreement or conspiracy), several when acting alone. There is no unfairness in this.

4. The Scope of Relief

The Licensing Board granted entities in the CCCT access to the five nuclear plants involved in these proceedings and to future nuclear plants of the applicants as to which they apply for a license within the next 25 years.⁴³⁵ Applicants contend that, insofar as this condition applies to future plants, it is beyond the Commission's power because it denies the applicants a hearing on future applications for licenses before conditions are imposed on those licenses.⁴³⁶

We find that argument without merit. Applicants are not being denied a hearing on conditions to future licenses because the conditions of which they complain are being attached to present licenses and they have had a full hearing as to them. The only relevant question is whether that relief is justified by the evidence in this case. We hold that it is. The evidence shows an extensive history of anticompetitive conduct by applicants which has enhanced and entrenched their very great monopoly power. We agree with the Licensing Board that access to future nuclear plants is important to make sure that the nuclear access afforded to small electric systems is both fully useful and sufficient to remove them from a condition of abject subjugation to the applicants' monopoly power. This is especially true because it may be that the small systems, which the record indicates are generally financially strapped, will not be able to buy very large interests or blocks of power from the units involved in this proceeding. However, over 25 years, purchases of interests in or power from new units should gradually build up their economic independence and restore at least some of them to a condition in which they can survive and even provide the applicants with some competition.⁴³⁷ Moreover, if some of the requesting entities are to join CAPCO, which the license conditions permit them to do, they will need twelve years in which to acquire "ownership shares and entitlements . . . so that adverse consequences of applying the P/N formula will be mitigated."⁴³⁸

Applicants assert that it is not necessary to afford CAPCO membership to entities with 10 Mw of generation because they can achieve the benefits of coordination without pool membership.⁴³⁹ It may be that that will turn out to

⁴³⁵ License condition 9, 5 NRC, *supra* at 259.

⁴³⁶ Brief, p. 297.

⁴³⁷ Even their survival is a form of successful competition for the markets which they presently serve, for if they had to go out of business, one of the applicants would probably take over that service.

⁴³⁸ 5 NRC, *supra* at 258 n.173.

⁴³⁹ Brief, p. 296.

be true. However, in the past, applicants have used the CAPCO pool to afford the broadest range of coordination services and planning of generation and transmission facilities to each other, while denying these things to other systems in the area. We think the Licensing Board was justified in giving systems with 10 Mw of self-generation the option of deciding for themselves how best they can achieve coordination and joint planning—inside or outside CAPCO—rather than permitting applicants to make that decision.

Applicants object further that the Licensing Board's decision to grant interconnections, wheeling and various coordination services, such as maintenance power, emergency power, economy energy and reserve sharing, to entities which are not participating in any way in the Davis-Besse and Perry nuclear facilities goes beyond the authority of the Commission. The opposition parties ask us to affirm all of the relief granted below.

This issue is governed by Sections 105c(5) and (6) of the Atomic Energy Act, 42 U.S.C. 2135c(5) and (6), which provide, insofar as is relevant:

(5) . . . The Commission . . . shall make a finding as to whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws as specified in subsection 105a.

“(6) In the event the commission's finding under paragraph (5) is in the affirmative, the Commission shall also consider, in determining whether the license should be issued or continued, such other factors, including the need for power in the affected area, as the Commission in its judgment deems necessary to protect the public interest. On the basis of its findings, the Commission shall have the authority to issue or continue a license as applied for, to refuse to issue a license, to rescind a license or amend it, and to issue a license with such conditions as it deems appropriate.

Applicants' position is ultimately based on the words “activities under the license” in paragraph 5. Under their theory, the Commission may only grant relief that would govern “activities under the license.” In *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit No. 1), ALAB-279, 1 NRC 559, at 573-74 (1975), we held that this phrase was broad enough to give the Commission authority to condition a license for a nuclear generating plant on a requirement that the licensee “wheel a reasonable amount of supplemental power to another utility entitled to access to that facility.”

The staff places its reliance on the last sentence of subsection 6 which gives the Commission power “to issue a license with such conditions as it deems appropriate.”⁴⁴⁰ Of course, the question is: appropriate for what purpose? The staff says that the relief must be appropriate “to remedy the situation inconsistent with the antitrust laws . . .”⁴⁴¹ However, it must be remembered

⁴⁴⁰ Oral argument, Tr. 158.

⁴⁴¹ *Ibid.*

that the test of subsection 5 is “whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws” Appropriateness must be viewed under this total standard.

And it will not do to argue that because, as we held in *Wolf Creek, supra*, at 568-73, the Commission, in attempting to assess the anticompetitive situation, must consider past “anticompetitive conduct which is not traceable immediately and directly to operations of the licensed nuclear facility itself,”⁴⁴² it has unlimited power to remedy such patterns of conduct. As we pointed out in *Wolf Creek*, at 568, we reached that conclusion because “for activities under a license to ‘maintain’ a pre-existing situation inconsistent with the antitrust laws, some conduct of the applicant apart from its license activities must have been the ‘cause’ for bringing about those anticompetitive conditions.” Merely because we must consider an applicant’s historic anticompetitive conduct in order to determine whether an unfettered license would create a situation inconsistent with the antitrust laws does not mean that we have statutory power to impose remedies unrelated to the nuclear power plants which are the subject of the licensing proceeding.⁴⁴³

Similarly, we do not regard as significant the remark in the Joint Committee on Atomic Energy’s report on the current version of Section 105⁴⁴⁴ that “except in an extraordinary situation, Commission-imposed conditions should be able to eliminate the concerns entailed in any affirmative finding under paragraph (5)” In the first place, this phrase occurs in a sentence attempting to explain the meaning of the first sentence of subsection 6 which deals with consideration of the public interest in deciding whether or not to issue a license. Thus, its reference to license conditions must be taken as a shorthand way of alluding to them, not as an explication of the standard to be used for imposing them. More importantly, however, the reference is to concerns entailed in the finding under subsection 5 that “the activities under the license would create or maintain a situation inconsistent with the antitrust laws” This mere reference to the Delphic phrase of the statute does not shed any light on what it means.

How, then, shall we construe paragraphs 5 and 6 to determine the extent of our power to impose license conditions? It seems to us, after careful reflection, that the construction we made of them in *Midland*, 6 NRC, *supra* at 1099-1100, is the correct one. We said there:

We believe that no type of license condition—be it a requirement for wheeling, coordination, unit power access, or sale of an interest in the

⁴⁴² The quoted language appears at p. 568.

⁴⁴³ See the Commission’s statement in *Louisiana Power and Light Company* (Waterford Steam Electric Generating Station, Unit 3), CLI-73-25, 6 AEC 619, at 621 (1973) that “the propriety of pooling arrangements and physical interconnections . . . could not be dealt with by this Commission where no meaningful tie exists with nuclear facilities.”

⁴⁴⁴ S. Rep. No. 91-1247 and H.R. Rep. No. 91-1470, 91st Cong., 2nd Sess., p. 31 (1970).

plant itself—is necessarily foreclosed as a possible form of relief. Section 105c imposes no limits in this respect; it gives the Commission “authority . . . to issue a license with such conditions as it deems appropriate.” But as broadly as it is framed, that discretion is not *carte blanche*. The authority to act may not be divorced from the purposes of the legislation. The Congressional goals as we understand them are these: to insure the smaller utilities a fair access to nuclear power under conditions which permit them a reasonable opportunity to make effective use of its potential, and to see that activities undertaken pursuant to Consumers’ licenses neither create nor maintain an anticompetitive situation.

Section 105c is one provision in a statute that regulates the use of nuclear power. Nothing on the face of the section or in its legislative history suggests that, except as reasonably necessary to achieve the goals just outlined, it may be employed as an implement to restructure the electric utility industry. [Footnote omitted].

The application of that standard to the case at bar is not difficult. Electric systems acquiring access to nuclear power, whether by “ownership share, or unit participation or contractual prepurchase of power basis,”⁴⁴⁵ must be permitted “a reasonable opportunity to make effective use of its potential.” On the facts of this case, that means that applicants must make available to them interconnections, membership in CAPCO and the full range of coordination services provided in the Licensing Board’s conditions. For reasons we will state later, *infra*, at 398-401, we also hold that the license conditions should be broadened to require applicants to sell wholesale power to any requesting entity in the CCCT and that such entities should be afforded interconnections with the applicants, as provided in License Condition 2.⁴⁴⁶ Any entity acquiring neither access to nuclear power nor wholesale power from at least one of the applicants is not entitled to any relief in this proceeding; indeed, such relief would be beyond the Commission’s statutory power to grant. Insofar as the decision below grants such entities relief, it is reversed and the license conditions will be amended accordingly.

Finally, applicants maintain that, even if the Licensing Board had authority to require that they provide interconnections, wheeling and coordination services to requesting entities, “there should also have been an explicit limitation on the use of those services only to the extent necessary to make the nuclear access meaningful.”⁴⁴⁷ We disagree. The record reveals instances where applicants, even when willing to supply municipalities or cooperatives with power or interconnections, attempted to limit severely: (1) the amount or voltage of the power supplied or (2) the capacity, characteristics

⁴⁴⁵ Condition 9(a), 5 NRC, *supra* at 259.

⁴⁴⁶ 5 NRC, *supra* at 257.

⁴⁴⁷ Brief, pp. 295-96.

or operation of the interconnections. These limitations made it difficult for the smaller entities to meet their present and future needs or to compete for new business.⁴⁴⁸

We are determined that that situation must cease. We will not permit the applicants to be the judge of the quantity of power or of the size or type of interconnection a smaller entity should get. If compliance with a request authorized by one of the license conditions would cause extreme hardship, an applicant may seek relief from the Licensing Board. We vest that Board now with continuing jurisdiction to entertain such a request. But the burden will be on the applicants to demonstrate a right to relief. Up to now, no such demonstration has been made.

B. Cleveland's Appeal

1. Wholesale Power

The first issue raised by the City of Cleveland on its cross-appeal from the decision below is the failure of the Licensing Board to require that applicants sell wholesale power to any requesting entity in the CCCT.⁴⁴⁹ The Licensing Board expressed its reason for not doing so in its opinion on Cleveland's motion for clarification of license conditions.⁴⁵⁰ That reason is that the applicants are now selling wholesale power to requesting entities and have represented to the Board that they will continue to do so. "The Board has taken Applicants at their word."⁴⁵¹

We think that the applicants should not be taken at their word. The record is replete with evidence that, in the past, they have either refused or delayed the provision of wholesale power or of the interconnections necessary for it, to the great detriment of the small electric systems in their area.⁴⁵² Moreover, wholesale power is extremely important for small electric systems in the CCCT. It may be that many of them will be too hard pressed financially to

⁴⁴⁸ The following are some examples of such conduct. CEI's operation of its 69 kv interconnection with MELP caused unnecessary outages on the city of Cleveland's system pp. 365-368, *supra*. Toledo Edison refused to agree to operate synchronously with Napoleon if the city were to buy Buckeye power. Finding 175, 5 NRC, *supra* at 220. Duquesne refused to operate in parallel with Pitcairn. Finding 91, *id* at 185. Ohio Edison and Penn Power refused to sell high voltage power to their municipal competitors, thus hampering their ability to compete for industrial customers. Finding 152 *id* at 207. Ohio Edison agreed to sell wholesale power to the city of Newton Falls, but only with a capacity limitation which barely provided for Newton Fall's normal load growth and which would have prevented it from obtaining new industrial customers or extending its system. Findings 144-46 *id* at 204-05.

⁴⁴⁹ We have defined wholesale power as "all firm bulk power." p. 301, *supra*.

⁴⁵⁰ LBP-77-8, 5 NRC 469 (1977). The Board did prohibit applicants from insisting that an entity buy all requirements wholesale power or none at all. *Id* at 472-73.

⁴⁵¹ *Id* at 472.

⁴⁵² Findings 41-46, LBP-77-1, 5 NRC, *supra* at 170-73; Findings 44 and 72, *id* at 170 and 178; Finding 102, *id* at 189; Findings 148-51, *id* at 205-06; Findings 179-80, *id* at 221-22.

purchase interests in nuclear plants or be become members of CAPCO.⁴⁵³ Thus, wholesale power may be the only form of nuclear power that some of the small systems can afford.⁴⁵⁴ Moreover, as nuclear plants are used for baseload power and as the five nuclear units in these proceedings will make a substantial contribution to the production of such power by the applicants, the relationship of these plants to the wholesale power to be produced by the applicants is direct and clear. It is therefore within our authority to order applicants to sell it to requesting entities in their service area.

For all the foregoing reasons, a license condition will be added requiring applicants to sell wholesale power to requesting entities, who shall also be entitled to interconnections under license condition 2.

Applicants' arguments against such a license condition are not convincing. We have already dealt with the thesis that nuclear access plus coordination services is sufficient, pp. 398-99, *supra*. Their other primary argument is that entities in the CCCT who want wholesale power from the applicants, including the city of Cleveland, are getting it.⁴⁵⁵ The obvious answer to it is that, after this case is over and the license conditions are fixed, they may have a change of heart. "The order to desist from an abandoned unlawful practice is in the nature of a safeguard for the future." *Clinton Watch Co. v. FTC*, 291 F.2d 838, 841 (7th Cir. 1961), *cert. denied*, 368 U.S. 952 (1962). As the Court stated in *Giant Food, Inc. v. FTC*, 322 F.2d 977, 987 (D.C. Cir. 1963), *cert. denied*, 376 U.S. 967 (1964): "The voluntary abandonment of part of the program under the circumstances shown by the record does not disable the Commission from formulating a rule of conduct for the future as broad as the derelictions of the past." *Accord, Fedders Corp. v. FTC*, 529 F.2d 1398, 1403 (2d Cir.), *cert denied*, 429 U.S. 818 (1976); *Diener's Inc. v. FTC*, 494 F.2d 1132, 1133 (D.C. Cir. 1974); *Doherty, Clifford, Steers & Shenefield, Inc. v. FTC*, 392 F.2d 921, 927 (6th Cir. 1968); *Libbey-Owens-Ford Glass Co. v. FTC*, 352 F.2d 415, 418 (6th Cir. 1965).

As for applicants' assertion that Cleveland's complaint about wholesale power is moot (see footnote 455, *supra*), it is equally without merit. As was stated by the Court of Appeals in *Rubbermaid, Inc. v. FTC*, 575 F.2d 1169, 1172-1173 (6th Cir. 1978):

While a suit to enjoin future illegal action may be moot if it is certain that such violations cannot recur, it is likewise well-established that

⁴⁵³ Cleveland itself may be in that position due to its well-publicized insolvency.

⁴⁵⁴ Applicants' argument that wholesale power is "only a pricing technique" and not a different commodity from other types of power is simply wrong. Applicants' brief in opposition to Cleveland's appeal, p. 6. We have held both here and in *Midland* that wholesale power is so unique as to constitute a separate product market. *Supra*, pp. 301-302; *Midland, supra*, 6 NRC 892, at 990-97.

⁴⁵⁵ Applicants' brief in opposition to Cleveland's appeal, pp. 7-8. The contention that the issue is moot because Cleveland is already getting wholesale power is but a variation on this theme.

discontinuance of past illegal practices does not necessarily render moot a controversy over an injunction against similar future actions. [Citations omitted.] The crucial question, of course is to what degree one can be certain that the same or related practices will not recur. Here, the Commission, having found that illegal acts had occurred in the past, further concluded that there was at least some possibility of similar future acts from which the public should be protected.

• • •

A company bears a heavy burden in showing that past conduct will not be repeated . . . We decline to find that the likelihood of similar conduct in the future is so remote that the present case is moot.

Applying this test, we have concluded that the extensive past misconduct of the applicants suggests a real possibility that they may again try to force small electric systems in their area out of business once the heat of this litigation has passed. Therefore, whatever must be done to protect the small systems must be done through the imposition of license conditions. We cannot rely on the good faith of those who have acted in bad faith.

Applicants tell us that we need not rely on their good faith because the Federal Power Commission (now the Federal Energy Regulatory Commission ("FERC")) has the authority under Section 205(d) of the Federal Power Act, 16 U.S.C. Section 824(d), to halt the termination of wholesale service.⁴⁵⁶ The City of Cleveland protests strenuously that, even though the FERC thinks that it has such authority, it does not.⁴⁵⁷

We need not decide this question for, even if this authority exists, it does not afford sufficient protection. By applicants' own admission⁴⁵⁸ and by the terms of Section 205(e), the FERC may suspend the date of termination, pending final decision, for only five months. More important, the FERC has itself said, in reviewing wholesale rate schedules under Section 205(e): "The anticompetitive effect of resale prohibitions is of course not conclusive under the Federal Power Act." *Gulf States Utilities Co.*, Docket No. ER76-816, slip opinion at 6 (Oct. 20, 1978).⁴⁵⁹ And, in interpreting a public interest standard of review over refusals to interconnect under Section 202(b) of the Federal

⁴⁵⁶ Applicants' brief in opposition to Cleveland's appeal, pp. 3-4. The Commission's powers in a Section 205(d) case are enumerated in Section 205(e), 16 U.S.C. Section 824(d)(e).

⁴⁵⁷ Reply Brief in support of the City's exceptions, pp. 2-8.

⁴⁵⁸ Brief in opposition to Cleveland's appeal, p. 4 n.3.

⁴⁵⁹ The applicants have called our attention (by letter of Aug. 25, 1977) to the FPC's decision in *Public Service Co. of Indiana, Inc.*, Docket No. ER76-739 (Aug. 1, 1977), as being illustrative of the Commission's authority over cancellation of electric service. In that case, the FPC ordered an investigation of a proposed termination of contractual planning functions under a power pool agreement. It cited as authority for its action Section 202(a) of the Federal Power Act, 16 U.S.C. Section 824a(a). It is clear from the opinion that the standard of review was to be not the antitrust laws but protection of the public interest.

Power Act, 16 U.S.C. Section 824a(b), the Supreme Court has said: "Although antitrust considerations may be relevant, they are not determinative." *Otter Tail Power Co. v. United States*, 410 U.S. 366, 373 (1973).⁴⁶⁰ As we are the only administrative agency with authority to protect, under the antitrust laws, the right of the municipal and cooperative electric systems to buy wholesale power, we will do so with an appropriate license condition.

2. Voting Rights for New Members of CAPCO

License condition 4(d)⁴⁶¹ provides:

d) New members joining CAPCO pursuant to this provision of relief shall not be entitled to exercise voting rights until such time as the system capability of the joining member equals or exceeds the system capability of the smallest member of CAPCO which enjoys voting rights.

The city of Cleveland excepts to this condition. It points out that none of the municipalities in the CCCT has anywhere near enough generating capacity to equal that of the smallest present member of CAPCO and therefore would never be able to exercise voting rights. The same, it tells us, is true of WCOE. The city contends that, "in light of the substantial obligations which any entity joining CAPCO would assume . . . , no entity would be willing or should be required to join CAPCO without some form of voting rights."⁴⁶² "The effect," it states, "is to deny non-applicant entities reasonable access to CAPCO membership."⁴⁶³ It asks that the condition be modified to permit any system as large as 50 MW to become a voting member of CAPCO.⁴⁶⁴

The Licensing Board explained its decision on voting rights in the following manner:⁴⁶⁵

Our objective is to prevent impediments to the operation and development of an area-wide power pool through the inability of lesser entities to respond timely or to make necessary planning commitments. While we grant new member entities the opportunity to participate in CAPCO it is not our intent to relieve joining entities of responsibilities and obligations necessary to the successful operation of the pool. For those

⁴⁶⁰ The new Section 210 of the Federal Power Act, 16 U.S.C. Section 824i, gives the FERC the power to order both interconnection and "such sale or exchange of electric energy or other coordination, as may be necessary to carry out the purposes of" an interconnection order. This section could be used to require applicants to sell wholesale power to an entity which does not presently receive it but which may need it at a later time. But the authority to order the sale of power is only incident to the authority to order or improve interconnection and, clearly, the standards for decision (in Section 210(c)) are not those of the antitrust laws.

⁴⁶¹ 5 NRC, *supra* at 258.

⁴⁶² Brief of city of Cleveland in support of exceptions, p. 12.

⁴⁶³ *Ibid.*

⁴⁶⁴ *Id.*, p. 13.

⁴⁶⁵ 5 NRC, *supra* at 258 n.174.

smaller entities which do not wish to assume the broad range of obligations associated with CAPCO membership we have provided for access to bulk power service options which will further their ability to survive and offer competition in the CCCT.

Despite the protestations of the city that there is no evidence of record which shows that smaller systems will not be able "to respond or make necessary planning commitments,"⁴⁶⁶ we think that there is something to be said for the Licensing Board's reasoning. The small systems in the CCCT are municipalities. Because municipalities must go through a political process in order to make decisions, they are often not able to make commitments or take actions in an expeditious manner.

However, we think there is a more important reason which supports the Licensing Board's decision. Power pools serve an important public service function in planning for adequate generation and transmission facilities and in ensuring reliability of service. We therefore would not want to impose any conditions which would impede the functioning of the CAPCO pool. Fundamental to that pool is the principle of unanimity. If one of the present members feels that a proposed action is strongly detrimental to its interests, it may veto that action. This principle made the pool possible; it permitted each applicant to join with the assurance that its vital interest would be protected. However, a pool can only function on this basis where there is a strong community of interest among its voting members. If anything is clear from the record of this case, it is that the interests of the applicants are antithetical to those of the municipalites. Therefore, if the latter were given voting rights, which necessarily include veto rights,⁴⁶⁷ the likely result would be that CAPCO would be perpetually deadlocked. We therefore affirm the Licensing Board's decision with respect to voting rights.

Perhaps it is true, as the city asserts, that none of the lesser systems will feel it is worthwhile to join CAPCO without voting rights, especially when our decision gives them rights to nuclear access or wholesale power. But that does not mean that the decision on voting rights is wrong. The Licensing Board felt, as do we, that the benefits of CAPCO membership might be of value to some of the non-applicant entities even without voting rights. If they decide they would rather pursue one of the other avenues that we have opened to secure their electric power needs, that is fine. Our objective is to give them the full range of alternatives that they might have had in a truly competitive market to gain meaningful access to the benefits of nuclear generation. Which they choose is up to them. But we are not prepared to go so far as to risk the

⁴⁶⁶ Brief of city of Cleveland in support of exceptions, p. 13.

⁴⁶⁷ Giving new members anything less than the right to veto would be meaningless for them. If their right to vote were based on size, they would be easily outvoted. And even if they received votes equal to those of existing members, they would be outvoted unless they were at least five in number, which is very unlikely.

destruction of the CAPCO pool.

3. Access to Beaver Valley, Unit 2

The city of Cleveland asks that the license conditions approved below be made applicable to Beaver Valley, Unit 2, another CAPCO nuclear power plant. In effect, it seeks access to that plant under the terms of License Condition 9.⁴⁶⁸ The applicants oppose the city's request; the Justice Department and the staff take no position with respect to it. The basis for this request is historical.

The city filed an untimely petition to intervene and seek an antitrust review in the *Beaver Valley 2* proceeding. The petition came before the Licensing Board together with petitions of the city and others to intervene in the *Davis-Besse* and *Perry* proceedings. At that time, in order not to delay the award of a construction permit, in return for a denial of intervention in *Beaver Valley*, applicants offered to accept a condition on the Beaver Valley 2 construction permit that any conditions imposed in the *Davis-Besse* and *Perry* proceedings could also be imposed on the Beaver Valley 2 license.⁴⁶⁹ The Licensing Board granted intervention in *Davis-Besse* and *Perry* and consolidated them; it denied Cleveland's petition for intervention in *Beaver Valley 2*, both for lack of good cause for its late filing and for failure to meet the nexus test previously laid down by the Commission in *Waterford, supra*.⁴⁷⁰ Cleveland moved for reconsideration. The Licensing Board denied the motion, stating in part:⁴⁷¹

Furthermore, a key point in assessing the weight to be given to a question of untimeliness is Cleveland's ability to protect its interests without a *Beaver Valley* hearing. The city of Cleveland has been admitted to the *Davis-Besse* and *Perry* proceedings which involve the same factual and legal issues that Cleveland seeks to litigate in *Beaver Valley*. If Cleveland shows in these two proceedings that relief is in order, Cleveland may then request the same type of remedy it seeks in *Beaver Valley*.

But the Licensing Board did not put a condition on the Beaver Valley 2 construction permit of the type which the applicants had offered to accept.

We affirmed the decision of the Licensing Board.⁴⁷² We held that good cause for the untimely filing had not been established and that Cleveland's

⁴⁶⁸ 5 NRC, *supra* at 259.

⁴⁶⁹ Tr. 151-53, 168-70, 237-39, 243-45. They had originally offered this as a stipulation but Cleveland turned it down. Tr. 238.

⁴⁷⁰ *Toledo Edison Company* (Davis-Besse Nuclear Power Station), LBP-74-13, 7 AEC 282 (1974).

⁴⁷¹ *Toledo Edison Company* (Davis-Besse Nuclear Power Station), LBP-74-24, 7 AEC 705, 707 (1974).

⁴⁷² *Duquesne Light Company* (Beaver Valley Power Station, Unit 2), ALAB-208, 7 AEC 959. (1974).

interests could be protected in the *Davis-Besse* and *Perry* proceedings.⁴⁷³ On the latter subject, we said:⁴⁷⁴

Assuredly, the city's claim of a right of access to the CEI transmission line and to participate with CAPCO members in various activities can be given appropriate recognition in those two proceedings. And should it be determined that the City has a solid footing for its insistence that it be allowed to acquire a share of the nuclear power which becomes available to CEI in the future, that too can be given effect in *Davis-Besse* and *Perry*. For one thing, it is far from certain that a meaningful remedy for the rectification of any anticompetitive situation which might be found would necessarily entail access to, specifically, Beaver Valley Unit 2 generated power. Electricity to be generated by the three facilities (assuming their operation) will be indistinguishable after it enters the CAPCO system. Moreover, the Beaver Valley facility is located at the greatest distance from Cleveland and, in all likelihood, will not be the first to commence operation. In any event, at issue in *Davis-Besse* and *Perry* is not the impact upon competition of simply a single, isolated nuclear facility. Rather what is involved is a generating and transmission system embracing several proposed facilities (to which others may well be later added). Particularly since CEI is a participant in all three of the nuclear generating facilities here involved, and each of the units is to be a part of the system, there would seem to be little doubt respecting the Licensing Board's authority to provide relief in *Davis-Besse* and *Perry* on a system-wide basis if the Board should be persuaded that such is required to remedy or avoid a situation inconsistent with the antitrust laws. See Section 105c (6) of the Atomic Energy Act, 42 USC 2135(c) (6).

The Commission thereafter denied Cleveland's motion to revoke the construction permit, referring to "the theoretical possibility that the same requested may be granted through other proceedings."⁴⁷⁵

The city relies on "Applicants' oft repeated assurances"⁴⁷⁶ and on the various decisions denying it *Beaver Valley* intervention to support its claim to relief. Its reliance on the former is misplaced. The city did not accept applicants' proposed stipulation and the license condition applicants offered was never imposed. As for the decisions, they certainly do not go so far as to promise Cleveland access to Beaver Valley 2 if it should win in *Davis-Besse* and *Perry*. However, though not free from ambiguity, they do seem to suggest that such relief is not foreclosed by the denial of intervention in *Beaver*

⁴⁷³ Both of these points were relevant under the Commission's rule for untimely intervention petitions—10 CFR 2.714(a).

⁴⁷⁴ ALAB-208, *supra*, at 969.

⁴⁷⁵ *Duquesne Light Company* (Beaver Valley Power Station, Unit 2), CLI-74-24, 7 AEC 953, 954 (1974).

⁴⁷⁶ Brief of the city of Cleveland in support of exceptions, p. 18.

Valley.⁴⁷⁷

But that is not the end of the analysis. We must still decide whether the relief should be granted. The standard to be applied is the same one we applied to test the justification for the relief which the Licensing Board granted—whether the relief is necessary to give the smaller entities a chance to make effective use of the access which we are affording them to the nuclear plants being licensed in these proceedings. Cleveland argues that “splitting its allocation among several units coming available at different times allows the city to more closely match power supply with load growth . . .”⁴⁷⁸ But this is a general statement which falls far short of the showing required. The city is already getting access to five nuclear plants coming on line at different times. It has not shown why Beaver Valley 2 is also needed to make effective use of the other five.

CONCLUSION

The opinion below is affirmed, except as modified herein.

The license conditions attached by the Licensing Board to the licenses for the Davis-Besse 1, 2, and 3 and the Perry 1 and 2 nuclear units⁴⁷⁹ are hereby revised to read as follows:⁴⁸⁰

1. Applicants shall not condition the sale or exchange of wholesale power or coordination services to an entity buying wholesale power from them or acquiring nuclear access from them, in a manner described in License Condition 9, upon the condition that any such entity:

a. enter into any agreement or understanding restricting the use of or alienation of such energy or services to any customers or territories;

b. enter into any agreement or understanding requiring the receiving entity to give up any other power supply alternatives or to deny itself any market opportunities;

c. withdraw any petition to intervene or forego participation in any

⁴⁷⁷ For example, though we said (in the paragraph quoted) that “it is far from certain” that access to this specific plant will be necessary, we went on to say that “there would seem to be little doubt respecting the Licensing Board’s authority to provide relief in *Davis-Besse* and *Perry* on a systemwide basis . . .” ALAB-208, *supra* at 969.

⁴⁷⁸ Brief of the city of Cleveland in support of exceptions, p. 17.

⁴⁷⁹ 5 NRC, *supra* at 256-59.

⁴⁸⁰ The words listed below have the definitions indicated when used in the conditions:

Entity shall mean any electric generation and/or distribution system or municipality or cooperative with a statutory right or privilege to engage in either of these functions.

Wheeling shall mean transportation of electricity by a utility over its lines for another utility, including the receipt from and delivery to another system of like amounts but not necessarily the same energy. Federal Power Commission, *The 1970 National Power Survey*, Part I, p. I-24-8.

proceeding before the Nuclear Regulatory Commission or refrain from instigating or prosecuting any antitrust action in any other forum.

2. Applicants, and each of them, shall offer interconnections upon reasonable terms and conditions at the request of any other electric entity in the CCCT which seeks to or is buying wholesale power from them or seeks to or is acquiring nuclear access from them in a manner described in License Condition 9; such interconnection to be available (with due regard for any necessary and applicable safety procedures) for operation in a closed-switch synchronous operating mode if requested by the interconnecting entity. Ownership of transmission lines and switching stations associated with such interconnection shall remain in the hands of the party funding the interconnection subject, however, to any necessary safety procedures relating to disconnection facilities at the point of power delivery. Such limitations on ownership shall be the least necessary to achieve reasonable safety practices and shall not serve to deprive purchasing entities of a means to effect additional power supply options.

3. Applicants shall engage in wheeling for and at the request of any entity in the CCCT which is acquiring nuclear access from them, in a manner described in license condition 9:

(1) of electric energy from delivery points of applicants to the entity; and,

(2) of power generated by or available to the other entity, as a result of its ownership or entitlements⁴⁸¹ in generating facilities, to delivery points of applicants designated by the other entity.

Such wheeling services shall be available with respect to any unused capacity on the transmission lines of applicants, the use of which will not jeopardize applicants' system. In the event applicants must reduce wheeling services to other entities due to lack of capacity, such reduction shall not be effected until reductions of at least 5 percent have been made in transmission capacity allocations to other applicants in these proceedings and thereafter shall be made in proportion to reductions imposed upon other applicants to this proceeding.

Applicants shall make reasonable provisions for *disclosed* transmission requirements of entities in the CCCT acquiring nuclear access from them in a manner described in license condition 9, in planning future transmission either individually or within the CAPCO grouping. By "disclosed" is meant the giving of reasonable advance notification of future requirements by such entities.

4. (a) Applicants shall make available membership in CAPCO to any entity in the CCCT with a system capability of 10 MW or greater;

(b) A group of entities with an aggregate system capability of 10 MW

⁴⁸¹ "Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

or greater may obtain a single membership in CAPCO on a collective basis.⁴⁸²

(c) Entities applying for membership in CAPCO pursuant to License Condition 4 shall become members subject to the terms and conditions of the CAPCO Memorandum of Understanding of September 14, 1967, and its implementing agreements; except that new members may elect to participate on an equal percentage of reserve basis rather than a P/N allocation formula for a period of twelve years from date of entrance. Following the twelfth year of entrance, new members shall be expected to adhere to such allocation methods as are then employed by CAPCO (subject to equal opportunity for waiver or special consideration granted to original CAPCO members which then are in effect).

(d) New members joining CAPCO pursuant to this provision of relief shall not be entitled to exercise voting rights until such time as the system capability of the joining member equals or exceeds the system capability of the smallest member of CAPCO which enjoys voting rights.

5. Applicants shall sell maintenance power to requesting entities in the CCCT which acquire nuclear access from them in a manner described in License Condition 9, upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-applicant entities outside the CCCT.

6. Applicants shall sell emergency power to requesting entities in the CCCT which acquire nuclear access from them in a manner described in License Condition 9, upon terms and conditions no less favorable than those applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-applicant entities outside the CCCT.

7. Applicants shall sell economy energy to requesting entities in the CCCT, which acquire nuclear access from them in a manner described in License Condition 9, when available, on terms and conditions no less favorable than those available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-applicant entities outside the CCCT.

8. Applicants shall share reserves with any interconnected generation entity in the CCCT, which acquire nuclear access from them in a manner described in License Condition 9, upon request. The requesting entity shall have the option of sharing reserves on an equal percentage basis or by use of the CAPCO P/N allocation formula or on any other mutually agreeable basis.

9. (a) Applicants shall make available to entities in the CCCT access to

⁴⁸² E.g., Wholesale Customers of Ohio Edison (WCOE).

the Davis-Besse 1, 2, and 3 and the Perry 1 and 2 nuclear units and any other nuclear units for which Applicants or any of them shall apply for a construction permit or operating license during the next 25 years. Such access, at the option of the requesting entity, shall be on an ownership share, or unit participation or the contractual prepurchase of power basis.⁴⁴³ Each requesting entity (or collective group of entities) may obtain up to 10 percent of the capacity of the Davis-Besse and Perry Units and 20 percent of future units (subject to the 25-year limitation) except that once any entity or entities have contracted for allocations totaling 10 percent or 20 percent, respectively, no further participation in any given units need be offered. (b) Commitments for the Davis-Besse and Perry Units must be made by requesting entities within two years after this decision becomes final. Commitments for future units must be made within two years after a construction permit application is filed with respect to such a unit (subject to the 25-year limitation) or within two years after the receipt by a requesting entity of detailed written notice of applicants' plans to construct the unit, whichever is earlier; provided, however, that the time for making the commitment shall not expire until at least three months after the filing of the application for a construction permit. Where an applicant seeks to operate a nuclear plant with respect to which it did not have an interest at the time of the filing of the application for the construction permit, the time periods for commitments shall be the same except that reference should be to the operating license, not the construction permit.

10. Applicants shall sell wholesale power to any requesting entity in the CCCT, in amounts needed to meet all or part of such entity's requirements. The choice as to whether the agreement should cover all or part of the entity's requirements should be made by the entity, not the applicant or applicants.

11. These conditions are intended as minimum conditions and do not preclude applicants from offering additional wholesale power or coordination services to entities within or without the CCCT. However, applicants shall not deny wholesale power or coordination services required by these conditions to non-applicant entities in the CCCT based upon prior commitments arrived (at) in the CAPCO Memorandum of Understanding or implementing agreements. Such denial shall be regarded as inconsistent with the purpose and intent of these conditions.

The above conditions are to be implemented in a manner consistent

⁴⁴³ Requesting entities' election as to the type of access may be affected by provisions of state law relating to dual ownership of generation facilities by municipalities and investor-owned utilities. Such laws may change during the period of applicability of these conditions. Accordingly, we allow requesting entities to be guided by relevant legal and financial considerations in fashioning their requests.

with the provisions of the Federal Power Act and all rates, charges or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them.

Point). Essentially, those decisions went in favor of the respective applicants. On both occasions, a dissenting vote was cast by Mr. Farrar (the Chairman of the *Indian Point* Board and a member of the *Seabrook* Board). To avoid delay in the release of the majority opinions, however, he prepared and issued then only outlines of his views, indicating that a full opinion would follow at a later date. ALAB-422, *supra*, 6 NRC at 106, 111-13; ALAB-436, *supra*, 6 NRC at 625-29.

On August 3, 1979, Mr. Farrar filed his dissenting opinion. Today, the *Seabrook* and *Indian Point* majorities responded to that opinion with supplemental opinions of their own. The three opinions are being published together. They may be referred to individually or collectively as ALAB-561, 10 NRC 410.

FOR THE APPEAL BOARDS

C. Jean Bishop
Secretary of the Appeal Boards

Opinion of Mr. Farrar, dissenting from portions of ALAB-422 and ALAB-436:

These two proceedings—filled with the testimony of expert seismologists—point up the broad applicability of a recent observation made by a distinguished jurist. Judge Bazelon writes that he has learned that on questions of risk “even our experts often lack the certain knowledge that would ease our decision-making tasks.”¹ We are faced here with a question of earthquake risk. Engineers tell us they can build a nuclear power plant to withstand earthquakes; we need only tell them how large an earthquake to guard against. Our “decision-making task” here, then, is to predict the level of the destructive forces that could be associated with the strongest earthquake these plants might experience during their lifetimes.

As is often the case where we must decide how much risk to take,² my disagreement with my colleagues stems only slightly from a dispute over the “baseline facts” (such as we can know them) concerning geologic structure and earthquake analysis. Rather, we are at odds primarily over our differing perception of how to apply safety standards in the face of vast uncertainties in scientific knowledge and understanding. These uncertainties about earthquake causation and effects prevent us from being at all sure of many of the inferences we draw. But the Commission’s regulations³ seem to contemplate

¹ *Risk and Responsibility*, 205 SCIENCE 277 (July 20, 1979).

² The risk is, of course, the occurrence of an earthquake larger than the plant is designed to withstand.

³ The governing regulations, entitled “Seismic and Geologic Siting Criteria for Nuclear Power Plants,” are embodied in Appendix A to 10 CFR Part 100 (hereinafter “Appendix A.”).

that clear findings will be at hand in precisely those areas where our knowledge is most limited.

In the face of this uncertainty, I respectfully suggest that my colleagues have neglected an elementary premise of nuclear reactor regulation: to prevail, those who assert the adequacy of reactor design—not their opponents—must bear the burden of proof.⁴ I reiterate that, instead, they have “view[ed] the evidence presented by the intervenors with an unjustifiably jaundiced eye, demanding from them what they do not expect of the staff and applicants—strict proof neither within the grasp of any practitioners of the seismological arts nor demanded by the regulations.” *Seabrook, supra*, ALAB-422, 6 NRC at 112 (dissenting opinion).

Put another way, the key disputes here center around predicting the size (in subjective “intensity” terms) of the strongest earthquake which might be felt near the plant and associating with that intensity a resulting quantitative force or vibratory ground motion (*i.e.*, “acceleration”) which the plant must be designed to withstand. Although basic data are available, expert seismologists are unable to provide definitive predictions on either point. Accordingly, the controlling regulatory principles mandate a conservative approach.

My colleagues look at it differently, however. They reject as unproven the intervenors’ assertions that the plants’ designs are less than safety demands. What they overlook is that equally unproven are the claims of those who say the facilities are “safe.” Both sides have failed because of the relative dearth of scientific knowledge about earthquake causation. My colleagues erroneously hold this against the intervenors. But it is the licensees and applicants who should have been called upon to overcome that uncertainty by improving plant design.

One further introductory thought bears mention now. Several years ago, we expressed the view that, in contrast to some other regulations, Appendix A (containing the Commission’s seismic criteria (see fn. 3, *supra*)) furnished us with definitive guidelines for decision.⁵ At least with respect to the portions of Appendix A that have come into play in these two cases, I can no longer endorse that statement. Although the regulations appear specific enough on their face, one of their crucial terms—“tectonic province”—has no generally accepted meaning in the scientific community. The term is essentially

⁴ *Consumers Power Company* (Midland Units 1 and 2), ALAB-283, 2 NRC 11, 16-18 (1975), on reconsideration, ALAB-315, 3 NRC 101 (1976) (Dr. Quarles dissented from our application of this principle to those (like the owners of Indian Point) already possessed of a Commission license); *Environmental Defense Fund v. EPA*, 548 F.2d 998, 1004-05, 1012-18 (D.C. Cir. 1976) (Leventhal, J.), *certiorari denied sub nom. Velsicol Chemical Corp. v. EPA*, 431 U.S. 925 (1977).

⁵ *Virginia Electric and Power Company* (North Anna Units 1, 2, 3, and 4), ALAB-256, 1 NRC 10, 13-14 (1975).

meaningless because of its vagueness,⁶ a deficiency that cannot be disguised by pretending that the term is "flexible."

I therefore agree with the *Indian Point* majority's observation (6 NRC at 574-77) that a thorough revamping is necessary.⁷ But the vagueness of certain aspects of the regulation hardly justifies my colleagues' disregard of other principles that are not ambiguous.

I will develop the points made above during the course of this opinion, which is principally concerned with the two key steps in the regulatory scheme referred to above. To repeat, the regulations require that, for each nuclear power plant, (1) a forecast be made of the size of the largest earthquake likely to occur near the plant during its lifetime and (2) an analysis be done to predict the forces that are likely to be associated with an earthquake of that size. Both steps are crucial to the ultimate safety determination: whether plant design is sufficient to withstand the seismic forces that may be brought to bear on the facility.

In both *Seabrook* and *Indian Point* there is substantial dispute on each of these counts. Part I of this opinion deals with the selection of intensity levels. It explains why I join my *Indian Point* colleagues in the selection of an Intensity VII earthquake as controlling for that site and why I dissent from the *Seabrook* majority's choice of an Intensity VIII (rather than Intensity IX) as governing there. Part II elucidates my disagreement with the rationale underlying the way the majorities in both cases associated acceleration values with the different intensity earthquakes. Finally, Part III treats briefly an issue affecting only *Indian Point*, i.e., the need for an expanded microseismic monitoring network in the vicinity of that facility.

I.

PREDICTED MAXIMUM EARTHQUAKE INTENSITY

In these two proceedings, the first task assigned by the regulations was to predict the strongest (or highest) intensity earthquake likely to be felt in the vicinity during the particular nuclear facility's lifetime.⁸ If there are no

⁶ The term is so vague as to embrace almost any meaning that the proponent of a particular point of view wants it to have.

⁷ As both records reveal, and as my colleagues have noted (6 NRC at 576-77), the staff's earthquake analysts have drawn heavily upon the United States Geological Survey for assistance and approbation. The remedy may lie in the staff's giving further rein to its own substantial expertise.

⁸ The intensity scale, known as Modified Mercalli, ranks earthquakes from I (smallest) to XII (largest) according to subjective impressions of their effects on people, buildings and the surroundings.

“capable” faults nearby,⁹ the starting point in any such exercise is to analyze the earthquakes that have occurred in the two to three centuries of existing historical records. The assumption underlying this analysis is that, in any given region, earthquakes at least as intense as those recorded historically must be deemed likely to recur.¹⁰

The study of historical earthquakes involves at least three discrete steps: (1) assigning an intensity to each event; (2) discerning where its “epicenter”¹¹ was located; and (3) deciding whether that location and the nuclear plant site lie in the same or different regions.¹² Although the facts necessary to perform the first two steps are sometimes difficult to come by, analysis of such evidence as is available on that score is a relatively straight-forward process. The third step—involving the “tectonic province” concept—presents the most analytical difficulties.

The problem with the concept of “tectonic province” is not immediately apparent to the casual observer. The regulations give no hint of the difficulties involved when they define the term (Appendix A, Section III (h)) to mean

... a region of the North American continent characterized by a relative consistency of the geologic structural features contained therein.

Because the seismic regulations are built around this term, I anticipated that there was in the scientific community a generally accepted understanding of what a tectonic province was. Indeed, my colleagues and I expected that the staff would have prepared a map reflecting its concept of this country’s

⁹ A capable fault is defined (Appendix A, Section III (g)) as one “which has exhibited one or more of the following characteristics:

- (1) Movement at or near the ground surface at least once within the past 35,000 years or movement of a recurring nature within the past 500,000 years.
- (2) Macro-seismicity instrumentally determined with records of sufficient precision to demonstrate a direct relationship with the fault.
- (3) A structural relationship to a capable fault according to characteristics (1) or (2) of this paragraph such that movement on one could be reasonably expected to be accompanied by movement on the other.”

Special precautions must be taken if a capable fault is nearby. For both facilities in issue here, I have agreed with my colleagues that, to the best of our knowledge, no such faults have been shown to exist in the relevant geographical area. But see Part III, *infra*, which deals with the need for further investigation on this score.

¹⁰ Of course, no natural or physical law precludes larger earthquakes from occurring in the future or furnishes assurance that none occurred in the past (before there were any settlers to observe them). As will be seen, the regulations take this into account by leaving room, where appropriate, for a requirement that the plant be designed to withstand a larger earthquake.

¹¹ The place on the earth’s surface directly above the focus of the earthquake.

¹² With respect to this last step, Appendix A requires the assumption that an historical earthquake associated with a particular region or a particular structure will recur at the point in that region or on that structure closest to the plant site. Appendix A, Section V(a) (1) (i-iii); see also 38 Fed. Reg. 31279, 31280 (November 13, 1973).

tectonic provinces. This had not been done.¹³ Moreover, there proved to be enormously disparate views on the subject, as the maps included in the majority's opinion in *Indian Point* demonstrate. 6 NRC at 578-80. As may be seen, at one extreme is a set of tectonic provinces each hundreds of miles long; on the other side is a set of provinces many of which are compressed into a much smaller area. And each side mustered respectable authority for its position.¹⁴

The problem I have with the evidence adduced is this: notwithstanding the efforts we made in *Indian Point* to elicit such information, no party's evidence sufficiently relates its proposed tectonic provinces—most of which are based on events that took place millions of years ago—to modern-day earthquake activity. This is an area where rulemaking is essential, for the present rule furnishes virtually no guidance for deciding hotly contested matters. It can only generate lengthy proceedings which, to no one's benefit, will turn out inconclusively. In my opinion, if the tectonic province concept is to be retained, the staff should propose a province map for that portion of the country east of the Rocky Mountains. After being scrutinized by all interested observers and amended accordingly, such a map could furnish the basis for future licensing.

The uncertainty over tectonic provinces comes into play in different fashion in the two cases. In *Indian Point*, the selection of province boundaries itself involved major disputes. But it was not necessary to resolve all those disputes in order to select an intensity level for the Indian Point reactors. In that circumstance, and because answers definitively relating the proposed provinces to modern earthquake activity were not forthcoming from the experts, I think it was unwise for the majority to attempt to delineate an extensive set of provinces for the Eastern seaboard (6 NRC at 552-570).

Nonetheless, my colleagues did first arbitrate the disputes over provinces and only then proceeded to consider the relevant historical earthquakes. Rather than do that, I have approached the case from the opposite direction. That is, I begin with the relatively few potentially relevant historical earthquakes. My first step was to determine which of these earthquakes could safely be ignored on the basis of major province boundaries upon which all parties—including the State, which furnished the licensees with their principal opposition—were in agreement. This disposed of fully half of them. Several more can be eliminated based on concessions the State made. Another turned out to be insignificant because of a downward revision of its intensity rating. Only the remaining three earthquakes required consideration of province boundaries. Section A of this opinion, relying on some of the same reasons given by my colleagues, explains why I essentially agree with their assessment

¹³ During the course of the hearing, the staff did prepare an informal or "unofficial" map. See 6 NRC at 580.

¹⁴ Cf. 6 NRC at 626, fn.3.

on these critical boundaries. Accordingly, I join in their ultimate conclusion that it was permissible to select Intensity VII to govern the two units still operating on the site.¹⁵

In *Seabrook*, the tectonic province concept played a less important role. One of the largest historical earthquakes—off Cape Ann, Massachusetts, in 1755—occurred quite near the site and therefore the applicants readily assumed that an event of its size could recur there. Thus, the central dispute was not over whether to exclude other (stronger) historical earthquakes from consideration on the basis of province boundaries. Rather, the debate involved the size of the Cape Ann earthquake and the merits of alternative approaches to the problem of earthquake prediction. These other approaches are at least promising; in light of the vagueness of the tectonic province concept, I see sufficient value in them to warrant their being given substantially more weight than does the majority. A full explanation appears in Section B, which sets forth the reasons for my belief that Intensity IX, rather than VIII, must be controlling for Seabrook.

A. Indian Point

1. In the course of asserting that the Indian Point reactors should be designed to withstand an Intensity VIII earthquake, the State put forward fourteen East Coast earthquakes which it said had exceeded Intensity VII. A listing of those events appears in the majority's opinion, grouped according to the State's proposed set of tectonic provinces. 6 NRC at 563. The State's position is that the Indian Point site is in the "Folded Appalachian" province. As may then be seen, seven of the fourteen earthquakes occurred in areas which even the State recognizes as separate provinces.

Under the scheme of Appendix A, earthquakes which occurred in provinces other than the one which contains the plant site must ordinarily be considered as though they occurred at the point in their province nearest the site. If, however, they can be associated with a particular structure, they need only be treated as though they occurred at the point on that structure closest to the site. These principles dispose of these seven earthquakes. First, the State's "Grenville" province does not approach any closer than 200 miles to the site. Considering the attenuation that takes place over that distance, none of the five earthquakes that occurred within that province was large enough to result in anything greater than Intensity VII being felt near the site. Second, the ranking earthquakes in the State's "Atlantic Coastal Plain" and "Appalachian Plateau" provinces (Charleston, 1886 and Attica, 1929, respectively) are, in all parties' views, associated with particular structures. Although the boundaries of the provinces in which they occurred come relatively close to the site, the structures involved are far enough from the site so that, taking attenuation

¹⁵ The majority opinion adequately discusses the status of the other unit. 6 NRC at 585-86.

into account, the recurrence there of the relevant earthquakes would not be significant for Indian Point. None of this has been contested.

This leaves for consideration only the seven earthquakes that the State would place in its "Folded Appalachian" province. But the State acknowledged, for varying reasons and to different degrees, that three of these need not be given serious consideration.

The first was originally thought to have occurred off Cape Ann (in 1638) but, upon further analysis, has been placed in the St. Lawrence Valley, making it insignificant for our purposes. Tr. 3529-31. Because of this, the State conceded in its prepared testimony that this event was not to be seriously considered. State Exh. 9, p. C-4.¹⁶ Even if, on the other hand, this earthquake did occur off Cape Ann, our consideration of a later (and perhaps larger) earthquake in that same area insures that the seismic risk to Indian Point is not understated on this account.

The second, near East Haddam, Connecticut, in 1791, was originally put forward by the State as having been of Intensity VIII. That rating has since, however, been revised downward to as low as V or VI, and the State's witnesses conceded that was reasonable.¹⁷ Tr. 1877; see also Tr. 3341-44. The other parties as well support a lower rating, although they would put it as high as VII. Staff Ex. 5, p. 4 and Tr. 3341-44; Licensee Ex. 15, p. A-3. In any event, it seems clear it should not be viewed as an VIII.

The third earthquake upon which the State at least to some extent disclaims reliance is the 1817 event listed as having occurred near Woburn, Massachusetts. In its oral testimony, the State indicated that this earthquake was of lesser significance than the others because the source of the intensity rating treats it as having been only of Intensity VII-VIII. Tr. 1931¹⁸ (For its part, the staff noted that, as is always the case with the older earthquakes, VII-VIII was possibly too high (Tr. 3384).) Indeed, another source mentioned by the State lists it as only a VII. State Ex. 9, p. B-1. For their part, the licensees' witnesses referred to one source that indicated it could be as low as a V. Tr. 2995-96. I find that this earthquake, too, should no longer be considered an VIII.

A downward revision of intensity ratings thus played a part in the State's decision not to press vigorously two of these three earthquakes. A similar downward revision convinces me that another event, that in the Bay of Fundy in 1869, need not concern us. That earthquake was originally rated by the Dominion Observatory as an VIII; that same organization has now downgraded it two notches, to Intensity VI. Tr. 3345-46. The State was not

¹⁶ See also the State's Proposed Findings, p. A-9, which omit mention of this earthquake.

¹⁷ Although in its proposed findings (pp. A-9, C-19 and C-32) the State declines to accept this downgrading, that position cannot be reconciled with its own witness' testimony at the hearing.

¹⁸ See also the State's proposed findings, p. A-9.

prepared, however, to concede the validity of this change before it was reviewed by the scientific community. State Ex. 9, p. B-3; see also proposed findings, p. C-32. Although this may be a valid point when the question is whether to accept one private researcher's revision or criticism of another's work, I agree with my colleagues "that a revision by a responsible government agency of its own work must be viewed in a different light . . ." 6 NRC at 573.

2. This leaves, then, only three earthquakes which require us to come to grips with the parties' seriously differing perceptions of what comprises a tectonic province. And as it turns out, the location of these earthquakes is such that it is not necessary to pass upon those geographic areas near the plant site where, it seems to me, the licensees' province arguments are the most artificial and strained, or, put another way, supported by the least compelling reasoning. I recognize that the State would prefer that, in the course of deciding this case, we rule definitively on a set of provinces for the entire area covered by the testimony. But it is not usually wise to issue advisory opinions. Where, as here, the experts concede that they cannot supply definitive answers, we should be particularly careful to avoid the realm of dictum. In this regard, I think my colleagues have tried to decide too much. For my part, notwithstanding the length of time that has passed and the extensive record that was compiled on this issue, I have decided to stick by what I said originally (6 NRC at 626-27):

Without going into detail at this time, I can say that my conservative [approach] . . . leaves me at odds with my colleagues on some of the province boundaries they adopt. But, in light of the imprecise state of the art, I would be exceptionally careful to avoid deciding matters not absolutely necessary to the disposition of this case. In this connection, it can be seen from the majority's opinion that the disputes which are crucial to a decision involve relatively few earthquakes and province boundaries. Thus, my opinion will deal with this issue on as narrow a basis as possible.

One of the earthquakes left to consider occurred in Giles County, Virginia, in 1897. Its location is best described with reference to the staff's map (6 NRC at 580). Its epicenter was to the southwest of the boundary between the staff's "Northern Valley and Ridge" and "Southern Valley and Ridge" provinces. The existence of this boundary was one of the points over which the State and the staff differed; as the State's map reveals, its analogous "Folded Appalachian" province recognizes no such division.

My opinion is that, of all the province boundaries on which the parties were not in agreement, this is the one on which the State's position is weakest. My colleagues have adequately marshalled the evidence which supports the existence of significant differences between the areas north and south of this line. 6 NRC at 564-65, 573. I am in agreement with their discussion. In that connection, it seems to me that this is one area in which it is clear that the

marked difference in geologic structure on either side of the line is reflected in, and helps to explain, a correlative marked difference in seismic activity. I have no difficulty, then, in holding that the Giles County earthquake can be deemed isolated from the Indian Point site.

This leaves for consideration only two Massachusetts earthquakes: Newbury, 1727¹⁹ and Cape Ann, 1755. The State would call these Intensity VIII and put them in the same tectonic province as the Indian Point site.

The licensees' and the staff's positions, on the other hand, are more complicated. The licensees discount the Newbury event by downrating its intensity (a position neither my colleagues nor I am prepared to accept; see 6 NRC at 571, fn. 44). The staff says that both events perhaps occurred within a relatively small but distinctive area it calls the "Southeast Platform" province.²⁰ The staff is not certain of that, however, and concedes that they might have occurred in the neighboring "Piedmont-New England" province. Tr. 3531-33. In the staff's view, this would put them in the same province as the plant site. But, in any event, the staff would not treat the earthquakes as associable with the site. Instead, the staff says that regardless of what province they occurred in, they should be associated with the set of structures forming part of the "Boston-Ottawa seismic trend." See, e.g., Tr. 3533. For their part, the licensees treat this "trend" as a province in itself, i.e., the "Cape Ann-New Hampshire" province, which it superimposes on the older set of provinces it advocates.²¹ They would put the 1755 Cape Ann earthquake there.

I believe it suffices here to note that, contrary to the State's assertions, the eastern portion of the Boston-Ottawa seismic trend, corresponding to the southeast portion of what the licensees call the Cape Ann-New Hampshire province, exhibits structural differences from its surroundings accompanied by a marked difference in seismic activity which can be explained in terms of those structures. To this extent, I join in the majority's analysis. 6 NRC at 568-70.

For purposes of this proceeding, we need not decide whether this is a separate tectonic "province" or merely a tectonic "structure" with which seismic activity can be associated. It is one or the other,²² and in either event the remaining two earthquakes belong with it. Thus they need not be deemed to have occurred any closer to the Indian Point site than the border of the province/structure. Again taking account of attenuation, the recurrence of

¹⁹ Some say that this earthquake's epicenter should be located across the State line, in southeastern New Hampshire.

²⁰ The licensees refer to this same area as the "Avalon Platform" province.

²¹ This same geographic area comes into play with respect to one aspect of the *Seabrook* proceeding. See pp. 428-430, *infra*.

²² In *Seabrook*, a staff witness expressed the view that the two Appendix A definitions were not always exclusive, and that this particular geographical area was one in which the definitions might overlap. Tr. 11942.

these earthquakes would not result in more than Intensity VII being felt at the site.²³

B. Seabrook

Based on the results of their tectonic province analysis, the applicants proposed to design the Seabrook facility to withstand the effects of an Intensity VIII earthquake. The intervenors challenged that analysis directly, asserting that the 1755 Cape Ann earthquake—necessarily to be treated as though it might recur near the plant site and which the applicants treated as Intensity VIII—was in fact of Intensity IX. While that argument has some force, two other arguments they have put forward are more compelling. These do not challenge the procedure employed in the tectonic province analysis directly, but instead involve different types of predictive methods. To repeat what I have said earlier, the tectonic province concept—which itself involves prediction—is at present only vaguely defined and does not reflect any clear understanding of, or relationship to, present day earthquake causation. In light of this, I believe there is much to be learned from these other methods of analysis.

One of these is founded upon the premise that the environs of Seabrook and Montreal exhibit marked similarities of geologic structure and seismicity. If this is true, the intervenors argue, we should assume for the sake of safety that the historic earthquakes that have occurred near Montreal could just as well have occurred, or could recur, near Seabrook. Because Montreal has experienced an Intensity IX earthquake, so the argument goes, the Seabrook plant should be designed to withstand such an event.

The intervenors' other line of reasoning is to me the most compelling. To put it briefly at this point, it is based on the premise—attested to by a highly qualified expert—that it is possible to predict from the historic seismic data for any given area the frequency with which the different sizes of earthquakes will occur in that same area. This holds true, it is argued, even for intensities above the level that have been experienced thus far in our relatively brief recorded history. The basis for this "probability" analysis is the theory that there is a definite relationship between the number of earthquakes of different size that occur. This relationship is said to exist in different areas of the country and to be independent of the absolute number of earthquakes occurring in the region under scrutiny.

Because this last argument appears most persuasive, I discuss it first here.

1. The evidence supporting the intervenors' probability or "frequency of occurrence" argument was advanced by Dr. Michael Chinnery, a recognized expert on seismology, who, at the time he testified, was the leader of the

²³ Even if the Cape Ann earthquake were rated as IX (see p.430, *infra*).

Applied Seismology Group of MIT's Lincoln Laboratory.²⁴ Because neither the Board below nor my colleagues seemed to appreciate the precise nature of the thesis he put forth, I begin by setting out my understanding of it. Insofar as it applies to the issue before us, Dr. Chinnery's testimony may be simply paraphrased this way²⁵—the frequency of large earthquakes in any given area is directly related to the frequency of smaller earthquakes. Put another way, given the earthquake history of an area, a prediction can be made of the recurrence interval—or “return time”—of different size earthquakes, including those even larger than any thus far recorded.

Dr. Chinnery did not rely on mere hypothesis. He had analyzed two other areas of the country whose earthquake histories, in terms of absolute number of earthquakes of any given size, were significantly different from the Seabrook environs. His study revealed to him the existence, on a relative scale, of a roughly constant relationship between the frequency of earthquakes of one size and those of the next larger or smaller size. See NECNP Ex. 10, Fig. 1. That relationship, confirming what he thought to be present in the historical data for the region around Seabrook,²⁶ led Dr. Chinnery to predict that an Intensity IX earthquake was likely to occur as often as once every one thousand years in that area. NECNP Ex. 10.

Two things about this prediction should be noted immediately. The first is that, for obvious reasons, it would not be negated by the absence of any record of an Intensity IX earthquake in the few hundred years that this part of the country has been settled. The second is that, if the prediction were to be accepted as valid, the plant should be designed to withstand an Intensity IX earthquake. This is because, under the prevailing philosophy of nuclear reactor regulation, a plant is not to be deemed “safe” unless it can withstand untoward events even as unlikely as those predicted to occur only once in a

²⁴ Dr. Chinnery presented the following educational qualifications: Bachelor's and Master's degrees in physics from Cambridge University and a Master's and a Doctorate in geophysics from the University of Toronto. Before taking his present position, he had been a professor in the geological sciences department at Brown. The complete statement of his qualifications, reflecting the rest of his professional experience as well as his memberships in professional societies, was attached to his prepared testimony. See fn. 25, *infra*.

²⁵ Dr. Chinnery's prepared testimony was submitted as NECNP Ex. 10. The applicant conducted extensive cross- and recross-examination. Tr. 3968-4024, 4046-54. The staff did not cross-examine him at all. See Tr. 4028-29. (Examination by another intervenor, Mrs. Weinhold, and redirect examination appears at Tr. 4024-46. The Licensing Board's brief separate questioning is recorded at Tr. 4054-57.) During the original hearing, no witnesses were put on the stand by those parties to contradict him; to the extent they later commented on his testimony at the original hearing, the staff witnesses seemingly endorsed it. See pp. 427-428, *infra*.

²⁶ In other words, the curves generated by graphing the frequency of occurrence of earthquakes of different intensities were parallel in the different geographical regions.

million years.²⁷ Much of reactor regulation involves protection against unlikely—even highly unlikely—occurrences. In this respect, earthquakes are no different from any other events which, though perhaps not “expected” to occur, are considered sufficiently “credible” safety hazards to warrant guarding against them.

I will discuss later the data which led Dr. Chinnery to come to the conclusion he did about the likelihood of earthquakes in the Seabrook area. But those who disagree with his conclusion focus their attack less on the accuracy of his underlying data than on what they see as two threshold infirmities in his approach. One is his willingness to use data from one part of the country to predict what would happen elsewhere. Indeed, in ALAB-422, the first reason my colleagues gave for rejecting his approach involves this matter. Consequently, I take up this aspect of his testimony first. I then turn to the other alleged infirmity, *i.e.*, the asserted inconsistency of his approach with Appendix A. Having disposed of those two hurdles, I then discuss the merits of the data he relied upon to predict earthquake frequency for Seabrook.

a. I readily agree with the majority that Dr. Chinnery did not establish that the different geographical areas that he analyzed were similar to each other in terms of geology or of the number of earthquakes of any given size that had occurred there. 6 NRC at 57-58.²⁸ But it is not as though he tried to make such a showing and failed. Rather, he did not attempt to—precisely because the validity of his approach does not depend upon the existence of such similarities.

His approach is different. He has looked at three regions which, so far as he need be concerned, *are similar only in that none of them is near a tectonic plate boundary*. Tr. 3974-76, 4021-24, 4037.²⁹ What he claims to have observed—and to have depicted in the curves included in his testimony—is that in these different geographical regions the relationship among the frequencies of different sizes of earthquakes is constant.³⁰ He believes that the existence of

²⁷ See, *e.g.*, *Florida Power and Light Company* (St. Lucie Unit 2), ALAB-537, 9 NRC 387, 388 (1979). It is this philosophy—which has not been challenged in this proceeding—which provides the answer to those who would say that New England is not noted as a seismically active area. The fact that plants in California must be designed to withstand even larger earthquakes does not give us reason to ignore the need to design Eastern plants to withstand the smaller forces they may experience.

²⁸ The Licensing Board made the same point. 3 NRC 857, at 920.

²⁹ Particularly 3976, lines 12-17, and 4023, line 13 to 4024, line 15. Additionally, the entire thrust of the explanations he gave under cross-examination makes it clear that this was the only point of similarity upon which he relied. See Tr. 3974-92.

³⁰ When applicants' counsel sought Dr. Chinnery's admission that the slope of the curve would be the same “anywhere on earth,” Dr. Chinnery responded that while he believed no one knew the answer, there were suggestions in the literature that the slope varied considerably, but that he had his doubts about that. Tr. 4019-20. Rather than being a concession on his part, this supports his theory.

that relationship lets him use the historical record of earthquakes near Seabrook to come up with a rough prediction of the likelihood of occurrence of an earthquake of particular intensity—of concern here, a IX—in that region.³¹

While he examined those areas which were similar in that they were not near plate boundaries, Dr. Chinnery did not look at California, which is on a plate boundary. Rather than seeing the consistency in this, the majority took it as a starting point for criticizing his work. On this subject (6 NRC at 58), their opinion is susceptible to a reading that would distort the record.

I must go into some detail to set the record straight. To repeat, Dr. Chinnery was quick to point out that the reason he selected the two areas to compare with Seabrook was that all three, though dissimilar in other ways, were similar in the sense that none was near a tectonic plate boundary. On similar reasoning, he excluded California from consideration—it is on a plate boundary, and it is a fair reading of his testimony as a whole that he was emphasizing the fact that the forces and stresses active there are significantly different in kind from those away from plate boundaries. See Tr. 4024, 4037.

Dr. Chinnery went on, under questioning by applicants' counsel, to recite the levels of seismicity present in the different areas. Tr. 3989-91, 4023. *At no time did he rely on those levels to draw any distinctions or point out any similarities.* In fact, he specifically disclaimed doing so. Tr. 4023. But the majority's opinion makes it appear that Dr. Chinnery had *relied* on the frequency of major earthquakes being 40 times greater in California to distinguish it from New England.³² As the majority then goes on to point out, reasoning like this is defective, for in terms of frequency alone, earthquake activity in the other two areas is indeed closer to that in California than to that in New England. Because of this, the majority questions why he equated those areas to New England rather than to California. 6 NRC at 58.

As I have explained, it is crystal clear from the record that Dr. Chinnery specifically disclaimed—rather than relied upon—absolute frequency of

³¹ Dr. Chinnery explained in his written testimony (p. 1) that he had “to resort to information derived from the statistical character of the recorded New England earthquakes, and supplement this with data from other areas similar to New England.” He volunteered (p. 3) that the validity of using data from outside New England was “perhaps open to question.” But he used it and found (p. 3) that the linear extrapolation he was ready to make for New England seemed confirmed by the data from elsewhere.

³² It does so (6 NRC at 58) by the manner in which it structures two sentences which purport to explain why he “disclaimed any comparability between the California seismic situation and that of New England.” The first sentence is introduced with the words “one assigned reason” which he gave. The next sentence is introduced with the word “additionally.” This could create the misleading impression that what Dr. Chinnery simply said about frequency of earthquakes (in response to a question) was something that he relied upon. Having thus set up a strawman, the majority proceeded in the next two sentences to knock it down, thereby making it appear that they had found a logical inconsistency in Dr. Chinnery's work.

earthquake occurrence as a reason for comparing the different areas. However inadvertent it may have been, I cannot let his theory appear discredited by the attribution to it of supporting reasons—demonstrably invalid—to which he never subscribed.

b. The applicants advanced one other reason for discarding Dr. Chinnery's work out of hand: that the Appendix A scheme leaves no room for the type of analysis he performed. This reasoning was adopted by my colleagues. 6 NRC at 59-60.³³ It takes little analysis, however, to reveal its shortcomings.

Its principal failing is that, in focusing upon certain aspects of Appendix A, it ignores other portions covering the situation before us. As the outline of my dissenting views suggested, in this respect I conduct my analysis of Appendix A under an entirely different light than do my colleagues. As I said then (6 NRC at 111): "In recognition of the gaps in our understanding of earthquake occurrence and mechanism, the Commission's regulations insist that in this area, more so than in others, conservatism be the watchword." So too, our interpretation of the regulations themselves must be done in a manner that enhances, rather than detracts from, safety.

Dr. Chinnery's approach was acceptable under Appendix A even before the amendment to that Appendix which the Commission promulgated while this proceeding was pending.³⁴ From its inception, Appendix A has emphasized in its opening section that it is "based on the limited geophysical and geological information available to date concerning faults and earthquake occurrence and effect." For this reason, it states pointedly in the next section that "[a]dditional investigations and/or more conservative determinations than those included in these criteria may be required for sites located in areas having complex geology or in areas of high seismicity." And, although the criteria themselves emphasize techniques for taking "historically reported earthquakes" into account (e.g., Section IV(a)(5)), the accompanying statement of considerations stressed that "[b]ecause of the limited historical data, the most severe earthquakes associated with these tectonic structures or tectonic provinces are determined in a conservative manner and are usually larger than the maximum earthquake historically recorded."³⁵

Against this background (and assuming his theory was factually sound), I would have had little difficulty in fitting Dr. Chinnery's theory within the scope of even the original Appendix A. And the staff agreed. To be sure, at first it joined the applicant at trial in arguing for the exclusion of Dr.

³³ Surprisingly so, in light of their willingness in another respect to overlook plain language in Appendix A. See Part II, *infra*.

³⁴ The amendment was issued after the Licensing Board's decision was released and while the matter was pending on appeal. In light of the controlling jurisprudence, no one has suggested it is not applicable in this proceeding.

³⁵ 38 Fed. Reg. 31279, 31280 (November 13, 1973).

Chinnery's testimony on the grounds his approach could not be harmonized with Appendix A and therefore constituted an impermissible attack on that regulation. Later, however, it withdrew from that position and conceded that its differences with Dr. Chinnery were factual, not legal, in nature.³⁶

Even if Appendix A as originally formulated can somehow be viewed as outlawing Dr. Chinnery's approach, the liberalizing amendment promulgated on January 5, 1977 plainly legitimized it.³⁷ But the majority treated the Commission's amendment perversely, as though it had tightened the rules. 6 NRC at 60.³⁸ This was unjustified. For in the statement of considerations that accompanied the amendment, the Commission pointed out that existing standards "result invariably in the Safe Shutdown Earthquake intensity being equal to or exceeding the maximum historic earthquake intensity experienced" at the site. Then, citing the same provisions I have mentioned above, the Commission explained that Appendix A had been meant to establish only "minimum requirements" which have "consistently been interpreted as such in licensing decisions." Then, although rejecting the specific clarifying language that had been proposed to it, the Commission indicated that it had "accepted the substance of the petitioner's proposal" and had "decided to issue an amendment to Appendix A that clearly states that the maximum historic earthquake could be exceeded in the determination of the safe shutdown earthquake where warranted." Specifically, the amendatory language provided that a stronger earthquake could be required as the standard when "geological and seismological data warrant." The statement of considerations went on to give three examples of "some conditions that might warrant selection" of a larger earthquake.³⁹

To be sure, none of the three specific examples speaks of theories like Dr. Chinnery's.⁴⁰ But it would be a mistake to read the amendment as evidencing an intent to exclude his theory. As I read it, the amendment was designed to make two principles even more clear than before. First, it reemphasizes that, owing to the experts' inability to supply definitive judgments in this field,

³⁶ See Tr. 11929 (February 23, 1976) and footnote 3 of the staff's February 17, 1977 response to NECNP's motion for summary reversal.

³⁷ The amendment was published at 42 Fed. Reg. 2051 (January 10, 1977).

³⁸ As I said in my original dissent (6 NRC at 111-12), "they insist on reading a recent amendment to the regulations in unjustifiably narrow fashion, as though it circumscribed rather than emphasized the need to look beyond the records of American earthquake history in determining earthquake potential."

³⁹ These were "(1) where the highest intensity of historically reported earthquakes is determined to have been experienced at the site taking into consideration site foundation conditions, (2) where seismicity in the immediate site vicinity is significantly higher than that generally existing in the tectonic province as a whole, (3) where there exists in proximity to the site tectonic structure demonstrably like that found where larger earthquakes in the tectonic province have occurred historically."

⁴⁰ The third one, though, embraces the type of analysis I discuss in paragraph 2, below.

regulatory decisions have to be even more conservative than usual. Second, it teaches that, where selection of a governing intensity standard is concerned, the presence of one approach in the regulations is not meant to exclude other types of analyses that might aid our predictive efforts. Therefore, my opinion is that the staff's final position (see text accompanying fn.36, *supra*) was correct—Dr. Chinnery's theory cannot be excluded as inconsistent with the regulations. As I see it, to the extent that analyses other than the tectonic province concept—which we have seen to be less than entirely satisfactory—can help us forecast potential earthquake activity, we should learn what we can from them rather than exclude them from consideration.

What remains to be seen, of course, is whether Dr. Chinnery's testimony was factually and scientifically sound. As I explain now, I believe that he presented enough support for his methodology to justify our giving his conclusion some weight. I also believe that, taking his analysis in conjunction with the other, independent evidence before us, we shirk our safety responsibilities if we do not require that the Seabrook plant be designed to withstand an Intensity IX earthquake.

c. Although the Appendix A argument cannot fairly be applied to exclude Dr. Chinnery's theory from consideration, his work is not beyond all criticism. But, as I will demonstrate, none of its possible deficiencies is substantial enough to warrant rejecting his teachings.⁴¹

In its original opinion, the majority said that Dr. Chinnery was not familiar with the geology of the other areas he was dealing with. 6 NRC at 58. They went on to suggest that he should have attempted to show that they were similar to each other and to Seabrook (in ways other than the one he relied upon⁴²). 6 NRC at 60. Actually, the reverse is true. For the more "dissimilar" the geographical areas whose data yielded parallel curves turned out to be, the closer Dr. Chinnery would be to establishing that the relationship he posits does in fact exist—regardless of geological structure or the level of seismicity—in every region not close to a plate boundary.⁴³ If, on the other hand, the areas were to prove "similar" in the respects the majority thinks important, it would not disprove Dr. Chinnery's theory—but it would give him warrant to examine other geographical areas to ascertain whether he can justifiably conclude that the posited relationship is independent of local geological conditions. His failure to make this inquiry and, if necessary, to

⁴¹ I readily concede that Dr. Chinnery did not prove the validity of his conclusion beyond a reasonable doubt. But whenever the concern is with predicting the future, particularly in an area as fraught with uncertainties as seismology, the search is not for "truth" (as is the case in a trial which attempts to impose liability for events that occurred in the past). There is no "truth" to be grasped—and thus any reasonable aid to our forecasting ability is a worthwhile addition.

⁴² See pp. 422-423, *supra*.

⁴³ Although he did not volunteer to push his theory this far, when asked, Dr. Chinnery stated his belief that he would not be surprised if his theory held up for all regions. Tr. 4019-20.

broaden his data base raises a question about the thoroughness of his work,⁴⁴ but does not in itself discredit his theory. And in any event, even if he did not present sufficient information to warrant wholesale endorsement of his approach, he unquestionably put forward enough so that the Licensing Board might have insisted that the matter be further investigated (perhaps by way of independent analysis conducted by the staff).⁴⁵ By the same token, I fail to see how my colleagues can so readily proceed through the caution light Dr. Chinnery has erected without first looking both ways by requiring that further analysis be done and presented to us. While, as I have said, I am not firmly convinced of the validity of his theory, I cannot say, in the face of the thoughts he has put before us, that there is the required "reasonable assurance" that the plant will be safely built if it can withstand only an Intensity VIII earthquake.

The majority opinion also was critical of the curve Dr. Chinnery drew to represent the historical seismic data for the Seabrook area; it said that that curve did not conform to the data. 6 NRC at 58-59. To be sure, Dr. Chinnery readily conceded that, due to the paucity of Intensity VII events during the time period he plotted, he was not fully certain of the accuracy of one of the points which he plotted. But a reading of his testimony as a whole (particularly Tr. 3989-4021) furnishes adequate explanation for the manner in which he constructed his curve. That my colleagues might draw it differently if it were their research project (see 6 NRC at 59) does not detract from the force of the evidence in the record, which is what we are required to base our decision upon.

In this connection, I should stress that *no witness took the stand to speak against Dr. Chinnery's approach or to point up any flaws in it*. See fn.25, *supra*. Put another way, the applicant did not attempt to elicit from its own experts any opinions casting doubt on the validity of Dr. Chinnery's thesis. The only comment came from the staff's experts. While they stopped short of endorsing Dr. Chinnery's analysis, they conceded that their own analysis had yielded results similar to his. Tr. 11924-25; 11927,⁴⁶ 11933-36.

⁴⁴ Judging from the format of his testimony and the manner of its delivery, I would not be surprised if Dr. Chinnery had been called upon to do his work in a very brief period just prior to his appearance as a witness. If this is true, it would explain why it is not as thoroughly and carefully developed as one might expect a scientist of his calibre to do, say, on a long-term, funded research project.

⁴⁵ The Board below did not do so. This is not surprising, for that Board did not seem to understand what Dr. Chinnery was driving at. This is demonstrated by the fact that, in the course of the meager three paragraphs it devoted to Dr. Chinnery's testimony (3 NRC at 920), it set up in opposition to his conclusions Dr. Newmark's views of the nonlinear relationship between intensity and ground acceleration. As I am sure my colleagues will readily concede, Dr. Newmark's comments are related to the entirely different subject I discuss in Part II, *infra*, and have absolutely nothing to do with the position taken by Dr. Chinnery.

⁴⁶ A question asked here, at lines 1-6, was eventually answered at Tr. 11933.

Not only did no expert controvert what he said, but the cross-examination conducted of Dr. Chinnery did not disclose any substantial or inherent problems with his theory. As I see it, the only gap in his testimony is that he did not explain—in terms of seismic forces or physical laws—what might be causing the constant relationship he posits. But if an effect is known, that the cause is not yet understood is no reason to disregard it. And Dr. Chinnery's inability to pinpoint a cause is not surprising. As I said at the outset, my experience in these two proceedings has left me with the definite impression that seismology is still far more art than science.^{46a} Dr. Chinnery's failings in this respect are not peculiar to him but endemic to the profession—he should not be held to a higher standard of proof than any of his colleagues are able to meet. Viewed in this light, the absence of an explanation for the observed phenomenon is not fatal.

Having explained why I find Dr. Chinnery's testimony persuasive, I turn now to consideration of the other evidence supporting a similar result.

2. The second line of evidence that leads to the selection of an Intensity IX earthquake as the standard for the Seabrook site is based on the occurrence of an earthquake of that intensity near Montreal. This analysis thus rests on an entirely different footing than does Dr. Chinnery's theory. It is tied to it indirectly, however, in that it follows the course which my colleagues said Dr. Chinnery should have taken—*i.e.*, complete geological comparison of different areas. 6 NRC at 60.

Specifically, the intervenors adduced evidence seeking to establish that the staff's "Boston-Ottawa seismic trend" was the functional equivalent of a tectonic province, in effect superimposed upon and cutting across the geologically older provinces said to exist in the region.⁴⁷ Although, as I will explain, there is much to be said for the existence of this province running from the seacoast to the Montreal-Ottawa area, the Board below and my colleagues refused to accept it as such because a seismically-inactive structure cuts across it. 3 NRC at 869-70; 6 NRC at 60-61. This, they said, resulted in there being two distinguishable areas, rather than a single province.

That rejoinder is not adequate. For if an extensive area does in most respects have a "relative consistency of geologic structural features," the

^{46a} Other efforts to forecast future activity may be similarly characterized, See *Niagara Mohawk Power Corp.* (Nine Mile Point Unit 2), ALAB-264, 1 NRC 347, 365, fn. 61 and accompanying text (1975).

⁴⁷ As I have discussed earlier, this matter also received considerable attention in the *Indian Point* proceeding. As I indicated there, the evidence in *Indian Point* supported our recognizing the existence of this province—or, alternatively, set of structures—in the Boston-Cape Ann-New Hampshire area. In the context of *Indian Point*, only that portion of it was crucial to a decision; the remainder of it is important here.

presence of an anomalous cross-cutting structure—put in place later by different forces—does not of itself negate the likelihood that seismic behavior on both sides of it will be uniform.⁴⁸ Since it is that uniform behavior which the tectonic province concept seeks to predict, the presence of a structure which leaves that behavior otherwise unaffected is not determinative.

The evidence adduced in *Seabrook*—much of it from the staff—thus persuades me to treat the entire area as one province,⁴⁹ notwithstanding the existence of an anomalous feature splitting it in two. In this circumstance, Appendix A makes express allowance for the intervenors' argument that the two regions on either side of that feature—(1) the area to the east, embracing Seabrook, and (2) that to the west, including Montreal—are so similar that what has occurred in one must be taken as likely to occur in the other. See fn. 39, *supra*, clause 3.

I would interpret Appendix A even more liberally than that. Specifically, I believe that if substantial similarity between the Seabrook and Montreal areas does in fact exist, they need not even be found to lie in the same tectonic province for us to learn about one from the other. Indeed, in rejecting Dr. Chinnery's theory, my colleagues essentially conceded this point. For if their judgment is that it is permissible to apply probabilities derived from one area to a geologically similar area (see 6 NRC at 60), it should likewise be permissible to transfer other aspects of earthquake history from one to the other. The difference between us, then, boils down to whether the areas in question are actually similar.

⁴⁸ Of course, the "Boston-Ottawa" features themselves are superimposed across older regions which nonetheless are still taken to represent continuous provinces.

⁴⁹ The staff first described this area, in Supplement 1 to its Safety Evaluation Report (Section 2.5.3.1, pp. 2-7 - 2-9), as follows: "Geographically, there appears to be a tendency for the clustering of activity in a southeast-northwest trending belt extending from the Canadian Shield through Montreal and Boston and out to sea (Diment, et al. 1972). . . . Several lines of geological and geophysical evidence indicate the existence of a structural basis for this epicentral trend. Fletcher, et al. (1972) describe a zone of significant P-wave travel time anomalies relative to adjacent areas. This zone which is coincident with the seismic belt, indicates a local crustal or upper mantle structural or petrologic anomaly.

"Sbar and Sykes (1973) point out that the seismic belt is subparallel to and partly within the Ottawa-Bonnechere graben and that the Monteregian Hills and the White Mountain intrusives are contained within this belt as well. All three of these features are of Mesozoic or Tertiary age (Kay and Colbert, 1965; Fairbairn, et al., 1963; Foland, et al., 1970).

"Diment, et al. hypothesize that the seismic belt may be located along an extension of the Kelvin seamount chain. LePichon and Fox (1971) suggest that this seamount chain formed along a fracture zone, during the early opening of the North Atlantic, in the Jurassic and Cretaceous. In fact, both the seismic belt and Kelvin seamounts lie along the same small circle about the center of rotation that LePichon and Fox propose for plate movement during this period.

"In consideration of the above, we view the seismic activity within the Boston-Ottawa seismic belt to be anomalous with respect to the New England tectonic province as a whole."

See also the discussion at the reopened hearing, Tr. 11887-90, 11944, 11946-47.

With all due respect, I believe my colleagues are wrong in denying that similarity. Although they point to some differences between the two areas, they allude to nothing in the record which makes those differences significant. For example, the record does not suggest that a difference in the time of emplacement of similar structures by similar forces is likely to result in substantially different present-day tectonism. And the remaining significant features are quite similar. The rock type, the manner and timing of their creation and emplacement, and the general level of current seismic activity are relatively the same in both areas. Tr. 11953-55. This strongly suggests that whatever has occurred in the one area could just as well have occurred—or might yet occur—in the other. The 1732 Montreal earthquake—which all parties agreed could be treated as one of Intensity IX—thus lends support to the selection of an Intensity IX earthquake as controlling for Seabrook.⁵⁰

3. The final line of evidence pointing to the selection of an Intensity IX earthquake is the 1755 Cape Ann earthquake. If that event could be definitively established as having been of that level, then the Seabrook design would unquestionably have to be strengthened. There is some authority for the proposition that the 1755 event was of Intensity IX.⁵¹ Concededly, if it stood alone the Cape Ann evidence would not compel the conclusion that the plant should be built to withstand an Intensity IX earthquake. But it is not the only evidence. Given what I have said earlier about the other reasons to select Intensity IX, the possibility that the Cape Ann earthquake was also that strong—however much a minority view that may be among the experts—furnishes one more cause for selecting Intensity IX as controlling.

In sum, then, I agree with my colleagues that it was proper to use an Intensity VII earthquake as the starting point for the design of the Indian Point plant. But for the reasons stated, I disagree with them on the selection of Intensity VIII for Seabrook. In my judgment, Intensity IX is the standard called for by the conservative reading of the evidence that Commission regulations require.

⁵⁰ The staff did not refer to this Intensity IX event in its Safety Evaluation Report. At the reopened hearing, however, it did do so. Tr.11892-93. See also 6 NRC at 60.

⁵¹ There is authority that it was only an VIII. In making this point, the majority goes so far as to rely on Dr. Chinnery, saying that even he “did not dispute the VIII designation; indeed, for his plotting purposes, he assigned a VII to the earthquake.” 6 NRC at 62.

That last is not true. Dr. Chinnery’s graph says right on it that, for the area around Seabrook, it covers only the period 1800-1959; obviously, the 1755 earthquake is not plotted. He confirmed in his oral testimony that only this time period, or less, was involved. Tr. 4008-18.

Dr. Chinnery did, however, refer to the 1755 event other than in connection with his graph. In his written testimony he said that it is difficult to rate its intensity and that “it is quite possible that it was no larger than VIII, and it may have been smaller.” And on cross-examination he said much the same thing. Tr. 3968-74.

The next step of the seismic analysis requires a correlation of the particular intensity selected with a resulting vibratory motion. As to this step, I disagree with my colleagues' conclusions in both cases. I turn to that issue now.

II.

PREDICTED MAXIMUM ACCELERATION

As noted earlier, intensity levels are essentially subjective in nature. Consequently, they cannot be used directly in calculations concerning plant design. Rather, after a particular intensity is chosen to represent the maximum earthquake expected to be felt at a nuclear power plant site, an attempt must be made to convert it to an objective measurement. This is done by predicting the actual ground motion (in terms of acceleration, measured in units of gravity ("g")) which the plant is likely to be exposed to as a result of the occurrence of an earthquake of the specified intensity.

In these two proceedings, and in others as well, a purported correlation has been established between different intensity levels and acceleration values. Specifically, Intensity VII (Indian Point) has been associated with .13g acceleration, and Intensity VIII (Seabrook) has been associated with .25g.⁵² The private intervenors in each case argue that a higher acceleration must be used in each instance.⁵³

The analysis which goes into the attempt to establish this correlation is the same regardless of the intensity level taken as the starting point. Consequently, the discussion which follows is equally appropriate to *Indian Point* (where I agree with the intensity level selected) and *Seabrook* (where I disagree). In both instances, I believe that the intensity levels have been correlated with acceleration values in a manner other than that called for in our regulations.

The evidence dealing with correlating acceleration levels with earthquake intensities was both technical and complex. But the approach taken in analyzing it can be simply described. The difference between my colleagues' views and my own also comes down to a readily understandable—but fundamental—matter: does the approach which they sanction comport with Commission regulations? In my judgment, it does not.

The Commission's regulations require flatly that a nuclear plant be

⁵² The second and third Indian Point units (Unit 1 was shut down before this proceeding began) are designed to meet a .15g standard; Seabrook is being built to withstand .25g.

⁵³ In *Indian Point*, the State accepts the intensity-acceleration correlation but would use Intensity VIII as a starting point. This would result in a .25g standard for Indian Point. The private intervenors active in *Indian Point* did not challenge the use of Intensity VII for that facility, but argue that the intensity-acceleration correlation is incorrect. The *Seabrook* intervenors challenge both the intensity level and its correlation with acceleration. They would set .4g as the standard if the Intensity remains at VIII, and .75g if it is changed to Intensity IX.

designed to take account of the *maximum* vibratory accelerations that might result from the occurrence of an earthquake of the predicted intensity. Appendix A, Section VI(a). There is no dispute that “maximum” as used here refers to the greatest “effective” acceleration; it is concerned about those forces that can have a discernible impact upon the facility. See 6 NRC at 113 and 627. In this regard, the evidence seemingly left no room for doubt that the extremely high frequency waves which can cause the highest accelerations are of such short duration and low energy that they will have no real consequences.

But this leaves to be ascertained the maximum *effective* acceleration that should be associated with earthquakes of different intensities. My colleagues accept an indirect approach to answering this question—*i.e.*, finding the average of several peak acceleration figures—which misses the mark. Moreover, there is a direct approach which simply has not been utilized. I adverted to it when I said in dissent (6 NRC at 628) that “I believe that an effort should be made to ascertain the maximum effective acceleration in some other, rational, manner.” At that juncture, just before the release of ALAB-436, my *Indian Point* colleagues responded by adding to their opinion the material published in 6 NRC at 584-85.⁵⁴ Part of what they said there bears repetition here, for I take it as a concession that what I have been saying has merit. They put it in the following fashion (6 NRC at 585, emphasis added):

Licenses witness Fischer suggested that use of other parameters might produce better correlations of intensity with earthquake damage. Tr. 1008-17. Specifically, Mr. Fischer stated [Tr. 1008-09]:

[w]hat I have tried to indicate is that there are other, and I believe better ways of attempting to correlate damage than merely peak accelerations. Peak accelerations have little to no significance in building design. *What would be better correlation is perhaps velocity or something that would be considered a sustained level of acceleration.*

Mr. Fischer had earlier suggested that a more appropriate parameter for correlation with intensities might be the “sustained” or “effective” acceleration of a given record as suggested, e.g., by Plossel and Slossen in a note entitled “Repeatable High Ground Accelerations.” Tr. 838-29; see also Tr. 584-94. Such a correlation (based on “sustained” acceleration) would appear, on its face, to be less conservative than the procedure

⁵⁴ That is, the discussion beginning with the last paragraph on page 584 and ending just before the paragraph numbered “3” on page 585. At that time, I was able to refer to the majority’s addition of this material only by adding footnote 9 (6 NRC at 628) to my opinion at the last minute. [As published, that footnote contains a typographical error: the page reference should be to “584-85.”]

currently used by the staff and licensee.⁵⁴ It would, nonetheless, be desirable for the staff to provide a more quantitative assessment of its current methods. *This perhaps should include an evaluation of the frequency spectrum associated with the individual peak acceleration associated with each record using, for example, a Fourier type analysis. (This should indicate the level of the damaging accelerations involved.)*

That, in a nutshell, is what should be done. It has not been, even though the regulations seem plainly to require it. What is unsatisfactory about the majority's acceptance of another methodology is that the figures it yields have no demonstrable relationship to the quantity the regulation tells us to find. Those figures may be useful; arguably, when coupled with a number of other procedures, they might provide an alternative basis for designing a safe plant. But our acceptance of that approach means that the staff and applicants will have been allowed to substitute their own system of analysis for the one specified by the Commission. This is not permissible. Safety regulations promulgated by the Commission are binding on all parties, not just on intervenors.⁵⁵

The system approved by my colleagues in both cases works as follows. There exist basic data taken from a large number of earthquake records. These records, called seismograms, reflect the acceleration instrumentally measured during the period of an earthquake.⁵⁶ Researchers have also ascertained the intensity which was felt near the instrument during the particular earthquake being recorded. The seismograms, and their acceleration data, have been grouped according to the intensity level with which they are thus associated.

To this point, there is no controversy here over the collection and grouping of this basic data.⁵⁷ The next steps are the problematical ones. Within each group of records (*i.e.*, within each intensity level), the acceleration data for each earthquake were analyzed to determine, not the maximum level of *damaging* accelerations, but the highest, or peak, acceleration of any kind recorded during the event. By way of example, this means that if there existed seismograms disclosing the levels of accelerations associated with ten different Intensity VI earthquakes, my colleagues would simply look for the highest, or

⁵⁴ Although I have included this sentence in the quotation in the interest of completeness, what I say below (p. 434, *infra*) indicates that I disagree with it.

⁵⁵ See 10 C.F.R. 2.758; *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Station), ALAB-194, 7 AEC 431, 445 (1974).

⁵⁶ See 6 NRC at 627.

⁵⁷ There can, of course, be debate over the correctness of the intensity subjectively assigned to the particular earthquakes which generated the seismograms being studied. That is not in issue here.

“peak” acceleration on each record. They would then simply take the average (the arithmetic mean) of those ten values and use it as the controlling figure.⁵⁸

This would not concern me if the ten peaks were all relatively close to one another in value.⁵⁹ But the evidence reveals that the peak values thus being averaged differ from each other by as much as a factor of ten—an order of magnitude.⁶⁰ That being so, the average of all of them has no demonstrable relationship to the maximum effective acceleration that occurred during the one earthquake where damaging accelerations were the highest. Put another way, there is no necessary correlation between the figure the majority comes up with and the figure we have been told to find. The result is that we have no way of telling what the likelihood is that an earthquake of the given intensity will cause an effective acceleration higher than the value to which the plant is designed.

The intervenors pressed for adoption of a value larger than this “mean of the peaks.” Specifically, they supported use of the figure derived by taking the “mean of the peaks plus one standard deviation.” This would, certainly, account for some of the large scatter in the data and thereby provide more assurance that the chosen value would not be exceeded if an earthquake of the given intensity did occur. But it suffers (although to a lesser extent) from the same defective rationale as does the use of the mean itself.

In support of their conclusion that the use of the “mean of the peaks” is acceptable, my colleagues have relied upon the staff’s testimony that conservatism is used at *other* stages of the process of designing plants to withstand earthquakes.^{60a} I am not prepared to dispute the factual validity of what they say.⁶¹ I wish only to repeat that what the staff and industry have done, essentially, is to deviate from the regulations in favor of an approach of their own. As my colleagues say, that approach may well lead to a plant of safe design. It is, however, not the approach mandated by the regulations.

Because the analysis mandated by the regulations has been ignored, the acceleration figures associated with the different intensity levels relevant here are not acceptable. Until the type of analysis I suggested (and the *Indian Point*

⁵⁸ As I have been advocating and as the *Indian Point* majority belatedly recognized, what should be done is to analyze the acceleration history on each of the ten records by some method that would disclose the frequency spectrum associated with each peak. This would reveal the “level of the damaging accelerations” involved.

⁵⁹ It would simply result in a plant that was overdesigned, since all of the peaks, and their average, would obviously be higher than any of the maximum effective accelerations recorded.

⁶⁰ See 6 NRC at 628, fn. 8.

^{60a} 6 NRC at 584 (*Indian Point*); compare 6 NRC at 64, fn. 34 (*Seabrook*).

⁶¹ Nor have I gone into the use that staff and applicant analysts make of the acceleration figure which they associate with a given intensity earthquake. It is the selection of that figure, not the use to which it (if it were correct) is put, with which I take issue.

majority eventually spoke of approvingly) is performed, we will have before us no evidence allowing us to determine the appropriate acceleration figures.

III.

INDIAN POINT MONITORING NETWORK

Up to this point, this opinion has been concerned with topics relevant to both proceedings. But *Indian Point* also involved two additional questions.

The first was whether the Ramapo Fault should be viewed as “capable,” *i.e.*, of causing an earthquake. If it were, it would have significant ramifications for plant design. As I indicated initially, I agreed with my colleagues that the Ramapo Fault cannot be so characterized on the evidence before us. I said at that time that “I would not express the reasons for my own conclusion in quite the same way they do” (6 NRC at 628), intending to analyze the evidence on this point in a somewhat different vein. In view of the time that has elapsed, however, and the continuing press of other matters, I have decided to forego that academic exercise.⁶²

Instead, I will focus briefly on the other question peculiar to *Indian Point*. That concerned the need for the expanded microseismic monitoring network which the staff was requiring the applicants to install before my colleagues reached out and called a halt.⁶³

This point begins where the decision on the Ramapo Fault left off. While that feature was not shown to be “capable,” the evidence did not entirely negate the possibility that it, or some fault in the vicinity, would eventually be proven capable on sufficient investigation. After all, the governing regulation calls for “records of sufficient precision” (see fn.9, *supra*).

My reasons for disagreeing with the majority on this point are perhaps best summarized by the staff. Its position is that something in the general vicinity appears to be “localizing earthquake activity.” As I understand it, as a consequence the staff believes safety would be enhanced by pursuing further investigation in the vicinity (see, particularly, the staff testimony cited in the majority’s opinion, 6 NRC at 610-12). I commend that approach. And it should not be rejected because it would supply an additional benefit: that of advancing our general knowledge of seismicity, particularly with respect to the relationship between microearthquakes and large earthquakes (see 6 NRC

⁶² I must note, however, that I was more impressed with Dr. Sykes’ work than I believe the majority was.

⁶³ See ALAB-357, 4 NRC 452 (dissenting opinion at 552); reconsideration denied, ALAB-360, 4 NRC 622 (dissenting opinion, *ibid.*) (1976). In “choos[ing] not to reverse” the majority’s decision, the Commission nonetheless indicated that it “represent[ed] a departure from [certain] basic assumptions” which underlie the adjudicatory framework. CLI-77-2, 5 NRC 14, 15 (1977).

at 602-03, 607). For these reasons, the staff's monitoring condition appeared eminently sensible and would have been better left in effect.

For the reasons stated above, I dissented from portions of ALAB-422 and ALAB-436.⁶⁴ In my view, the Seabrook construction permits should be conditioned upon the plant being designed to withstand the effects of the maximum damaging or effective acceleration expected to be associated with an Intensity IX earthquake. The design of the Indian Point reactors, built long ago, need only be adequate to withstand an Intensity VII earthquake. But I cannot agree that .13g has been shown to represent the maximum effective acceleration that could be expected to result from such an earthquake. Thus, whether the plant's .15g design is adequate deserves at most the Scotch verdict "not proven." In any event, the monitoring condition should be reinstated.

⁶⁴ ALAB-422 covered a number of issues relevant to Seabrook other than those that were seismic-related. My dissenting views on financial qualifications, and my concurring views on several other points, were set out in full at that time. 6 NRC at 106-10, 113-14.

Supplemental opinion of Mr. Rosenthal and Dr. Buck, in response to the August 3, 1979 dissenting opinion of Mr. Farrar:

The appeals in this proceeding brought to us the attack launched by the intervenor New England Coalition on Nuclear Pollution against the findings below (1) that the safe shutdown earthquake (SSE) for the Seabrook site had a maximum intensity of VIII (measured on the Modified Mercalli scale); and (2) that the NRC staff (supported by the U.S. Geological Survey) had justifiably assigned a value of 0.25g to the maximum vibratory ground motion (acceleration) which might result from such an earthquake. As the Licensing Board's initial decision reflects,¹ the source of the findings was the testimony of a number of witnesses presented by the applicants and the staff. (Without detailing the educational and vocational backgrounds of these witnesses, it is not disputed that they are highly qualified experts in fields germane to this seismic inquiry.) According to the Coalition, however, the Licensing Board should have rejected their conclusions in favor of a finding of an intensity IX SSE and an acceleration value of 0.75g.

Each of the three essential reasons advanced by the Coalition for their disagreement with the Board below was fully considered in ALAB-422 and rejected. 6 NRC 33, 57-64. We looked first at the claim that the Board was obliged to accept the view of the Coalition's witness Dr. Michael Chinnery, founded upon a probabilistic analysis which he had conducted, that the likelihood of an intensity IX earthquake at the Seabrook site is approximately $10^{-3}/\text{yr}$.² Upon an appraisal of the Chinnery analysis, we found it to be both technically and crucially deficient. Beyond that, because of certain unproven assumptions central to the utilization of his approach, we determined that resort to it could not be squared with the dictates of Appendix A to Part 100. *Id.* at 57-60.

We then turned to the Coalition's second thesis—that, for analysis purposes, the 1732 Montreal earthquake (assumed by all parties to have been an intensity IX event) should have been treated as though it had occurred at the Seabrook site. We pointed out that, under the terms of Appendix A, the validity of this assertion hinged upon whether the earthquake both had occurred in the tectonic province in which the Seabrook site is located and either (1) was incapable of being associated with any tectonic structure or (2) was associated with a structure demonstrably akin to a structure near the Seabrook site. Our reading of the evidence of record bearing upon the geology of the relevant areas persuaded us of the correctness of the conclusion of one of the staff witnesses (Dr. J. Carl Stepp, the then Chief of the Geosciences

¹ LBP-76-26, 3 NRC 857, 868-71, 919-22 (1976).

² In other words, one chance in a thousand per annum.

Branch in the Office of Nuclear Reactor Regulation)³ that Montreal and Seabrook are in *different* tectonic provinces and that the 1732 earthquake is capable of being associated with a group of tectonic structures which are markedly dissimilar to the structures in the New Hampshire-White Mountain zone (which embraces the Seabrook site). 6 NRC at 60-62.

Finally, we examined the sharp disagreement between, on the one hand, the Coalition's witness (Dr. Mihailo Trifunac) and, on the other, the staff's and the applicants' witnesses with respect to the maximum acceleration which might result from an intensity VIII earthquake at the Seabrook site. Our evaluation of the evidence led us to determine that the 0.25g value concurred in by all of the experts other than Dr. Trifunac was sufficiently conservative. *Id.* at 62-64.

Mr. Farrar takes issue with each of the seismic conclusions we reached in ALAB-422. Although merely outlining the foundation for his divergent views at the time that decision was rendered (6 NRC at 111-13), as then promised he has now filed a considerably more detailed exposition of those views.⁴

On a consideration of Mr. Farrar's full opinion, we adhere to our previously announced determinations. Although no useful purpose would appear to be served by a full rehearsal of what was said by us in ALAB-422, a brief response to some of the points made by our dissenting colleague might prove of assistance to the Commission should it elect to examine the seismic controversy itself.

1. To begin with, Mr. Farrar maintains that we have applied an impermissible standard in our treatment of the conflicting conclusions of the expert witnesses who testified on the seismic intensity and ground acceleration questions. As he sees it, "because of the relative dearth of scientific knowledge about earthquake causation," neither the applicants and the staff nor the intervenors were able to establish the correctness of their respective positions on those questions. According to Mr. Farrar, in such circumstances we should have decided the dispute in the intervenors' favor rather than, as he insists was done, ruled against them on the ground that they had the burden of persuasion and had failed to carry it. See pp. 412.

There is not a jot or syllable in ALAB-422 which lends support to this characterization of our approach. True, we did not there discuss at length the bases assigned by the staff and applicant witnesses for their ultimate conclusions on the seismic questions. This was not, however, because of any misguided belief that the burden of persuasion on those questions rested with

³ See Tr. 11912-15; 11953-55.

⁴ Mr. Farrar's recent opinion also elaborates upon the extent of his disagreement with ALAB-436, 6 NRC 547 (1977), rendered in the special seismic proceeding conducted by a differently constituted appeal board in connection with the site of the Indian Point reactors. The *Indian Point* majority are today filing a separate supplemental opinion of their own. See pp. 412-413.

the intervenors. Rather, it was because we were not confronted on appeal with any serious attack upon the underpinnings of the evidence of the staff and applicants; *i.e.*, it was not claimed that either the data base or methodology utilized by those parties' witnesses was fatally infirm. What we were told by the Coalition was something quite different: in essence, that the contrary seismic conclusions of its witnesses (Drs. Chinnery and Trifunac) were equally tenable and thus should have been accepted by the Licensing Board in preference to those of the other testifying experts.

In these circumstances, the appellate issue boiled down to whether the Coalition was right about that or whether, instead (as both the staff and the applicants asserted), the Coalition's evidence was *not* equally tenable and, accordingly, the Board below had not erred in refusing to adopt that intervenor's proposed findings on the seismic issues. And it was that issue which we addressed and decided.

Notwithstanding his insistence that the staff and applicants had failed to prove their case on the seismic questions, Mr. Farrar's lengthy opinion is singularly devoid of any analytic consideration of the basis upon which their experts had reached the conclusion that an intensity VIII should be assigned to the SSE. To the contrary, our dissenting colleague contents himself with an exposition of the reasons why he would accept the Coalition's proposition that its evidence on the intensity question was credible enough to have required the Licensing Board to mandate, in the interests of safety, a more conservative seismic design. On the ground acceleration question, Mr. Farrar finds himself in agreement with the approach of none of the parties; in his view, the regulations require a still different type of analysis, as yet unperformed.

In short, as we see it, no genuine burden of persuasion question is presented by either the Coalition's appeal or ALAB-422. The real difference between ourselves and Mr. Farrar centers upon (1) whether the Coalition pointed to any disclosures of record which dictated—as a matter of fact, law, or policy—that the Board below reject the expert conclusions of staff and applicant witnesses;⁵ and (2) whether the ground acceleration associated with an intensity VIII earthquake was ascertained in a legally permissible manner.

2. Insofar as the seismic intensity question is concerned, Mr. Farrar

⁵ Our dissenting colleague does comment unfavorably upon certain aspects of Appendix A, and more particularly the use it makes of the "tectonic province" concept. See pp. 412-13. As he implicitly recognizes, however, as long as the Appendix remains unaltered the staff and the applicants can not be faulted for conducting their analyses in accordance with its terms. Nevertheless, we share his view that the Appendix warrants the closest reexamination and, most likely, substantial revision. See the discussion in *Indian Point*, ALAB-436, *supra* fn. 4, 6 NRC at 574-77 (cited by Mr. Farrar). We strongly urge the Commission to direct the staff to embark upon that mission on a priority basis.

concerns himself principally with the testimony of Dr. Chinnery.⁶ As previously observed, in ALAB-422 we determined that the probabilistic analysis employed by that witness was both technically deficient and inconsistent with the terms of Appendix A to 10 CFR Part 100.6 NRC at 57-60. Mr. Farrar disagrees on both scores.

a. As noted in ALAB-422, Dr. Chinnery predicted his entire analysis upon the assumption that the recorded earthquake experience in two other areas of the country—the southeastern United States and the Mississippi Valley—is instructive in determining the likelihood of the occurrence in New England of an earthquake of a particular intensity. This assumption did not rest to any extent, however, upon the fruits of a comparison of the geology of the three areas. In Dr. Chinnery's apparent view, such a comparison was unnecessary in light of his underlying hypothesis that, to quote Mr. Farrar, "the frequency of large earthquakes in *any given area* is directly related to the frequency of smaller earthquakes" in that same area.⁷

If Dr. Chinnery believed that hypothesis to have universal validity, it is difficult to understand why he explicitly declined to include the California earthquake experience in his probabilistic analysis—offering as his reason for not doing so certain perceived dissimilarities between the California seismic situation and that of New England: (1) that the California region is located near a plate boundary; and (2) that California earthquakes have a much larger source volume than do New England earthquakes (Tr. 4022, 4024). Be that as it may, we have neither found nor been pointed to disclosures in the record which furnish any conceivable technical support for the proposition that the Mississippi Valley or southeastern United States experience may be applied to New England automatically (*i.e.*, without regard to any geological dissimilarities which might exist). In this connection, although none of these regions may be close to a plate boundary (as in California), nevertheless there is at least one major difference between New England, on the one hand, and the Mississippi Valley and the southeastern United States, on the other: the frequency of earthquakes in the latter two regions is about the same but exceeds by an order of magnitude the earthquake frequency in New England. See 6 NRC at 58, fn. 28. To be sure, Dr. Chinnery may not deem that difference to be of possible significance (in contrast to the matter of the location of plate boundaries). But no explanation was offered as to why not. Further, it might well have been that, had Dr. Chinnery expended the time necessary to explore the available literature pertaining to the geology of the areas concerned, he would have uncovered other respects in which the

⁶ Mr. Farrar stresses Dr. Chinnery's educational and vocational credentials. Although we do not pause to detail the background of the staff and applicant witnesses, their expert qualifications are no less impressive.

⁷ See p. 421. (emphasis supplied).

Mississippi Valley and southeastern regions are *similar* to each other but *different* from New England—thereby bringing into still greater doubt the justification for equating the three regions on the sole basis of a wholly unproven hypothesis.⁸

In short, Mr. Farrar criticizes us for not giving credence to a theory which rested upon nothing more than conjecture and which was offered by one who, from all that we can determine, did little to test the validity of that theory. We think the criticism unwarranted.

We went on in ALAB-422 to take issue with the additional assumption of Dr. Chinnery that the probability curves plotted by him can be extrapolated linearly to higher intensities. 6 NRC 58-9. There is no apparent reason to expand at length upon what was there said on the point. Suffice it to say that we remain persuaded that the assumption was technically unsound. This is so not only for the reasons discussed in ALAB-422 but also because, in turn, the assumption seems to have rested—and necessarily so—upon the unsupportable premise that, no matter the characteristics of the geology in the New England area, there is no upper limit to the possible earthquake intensity in that area. See, in this connection, Tr. 11934.⁹

b. Apart from its other difficulties (see fn. 5, *supra*), Appendix A to 10 CFR Part 100 is not a model of clarity. Nonetheless, due reflection upon Mr. Farrar's construction of the Appendix has not altered our view (see 6 NRC at 59-60) that, as invoked in this instance, Dr. Chinnery's theory does not come within its scope. We need not belabor the point here. It is enough to record our belief that the promulgators of Appendix A—and its January 1977 clarifying

⁸ Mr. Farrar suggests (fn. 44, p. 427) the possibility that Dr. Chinnery "had[d] been called to do his work in a very brief period just prior to his appearance as a witness." Although that may have been the case, it scarcely furnishes any reason to have confidence in either his hypothesis or his conclusions. Indeed, one might well question whether weight should ever be attached in an adjudicatory proceeding to theories advanced by a scientist who, no matter the reason, did not undertake the research necessary to enable him (or others) to pass an informed judgment upon the likely validity of his underlying assumptions.

⁹ Mr. Farrar is correct on one point. As he notes (fn. 51, p. 430), our footnote 27 in ALAB-422, 6 NRC at 58, was in error in its statement that Dr. Chinnery assumed that certain 18th century Cape Ann earthquakes had had a VII level intensity. In fact, his analysis began with earthquakes occurring after 1800. We regret the error; it, however, did not bear materially upon our conclusions. In this connection, the Board below took the 1755 Cape Ann earthquake to have been possibly as much as intensity VIII (3 NRC at 919). Although Mr. Farrar notes that there is "some authority for the proposition that the 1755 event was of Intensity IX," he concedes that, standing alone, that "minority view" would be insufficient to require that the Seabrook facility be built to withstand an earthquake of that intensity. pp. 430. We think that concession was appropriate. The "authority" in question was a Canadian geologist named Smith, who made the first assessment of many of the New England earthquakes. The reason why his evaluation of the 1755 earthquake is suspect was set forth by the Board below (3 NRC at 919); in any event, later students of the earthquake are seemingly in agreement that it did not exceed intensity VIII.

amendment¹⁰—would be very surprised to learn that an attempt was being made to predict earthquake intensities in one region based upon experience in another region without either (1) an exploration of the geology of either region in quest of similarities and differences or (2) at least some plausible explanation about why any discerned differences might be totally irrelevant.

3. Apart from his reliance on Dr. Chinnery's analysis, Mr. Farrar asserts that (pp. 428-430), the presumed intensity IX earthquake which occurred near Montreal in 1732 justifies the assignment of that intensity to the Seabrook SSE. We have nothing of substance to add to the reasons we gave in ALAB-422 (6 NRC at 61-62) for declining to accept that line of argument when advanced by the Coalition. It is worthy of passing note, however, that our dissenting colleague makes no reference to the fact, noted in ALAB-422 (*ibid.*), that the Montreal-Ottawa region—unlike the New Hampshire-White Mountain region—possesses a graben; *i.e.*, a long crustal block bounded by faults along its sides and depressed relative to the surrounding area. To us, even without regard to the other dissimilarities between the two regions which were discussed in ALAB-422, the presence of an extensive fault zone in the vicinity of Montreal precludes the transferal of the Montreal earthquake to the Seabrook site for analytic purposes.

4. We explained in ALAB-422 (6 NRC at 62-64) the foundation for our endorsement of the judgment of every expert witness for the staff and applicants that it was appropriately conservative to ascertain the ground acceleration associated with an intensity VIII earthquake by determining the mean value of the acceleration peaks of recorded seismic events of that intensity. Mr. Farrar's rejoinder is that, whether or not it might provide a satisfactory result, that methodology is forbidden by Appendix A.

We think otherwise. As Mr. Farrar acknowledges (pp. 431-432), Appendix A must be read as requiring the plant design to take account of the maximum *effective* acceleration that might result from the occurrence of an earthquake of the predicted intensity. The Appendix does not, however, appear to specify the manner in which this acceleration level is to be determined. The question thus is not whether the procedures invoked by the staff and the applicants are legally impermissible; instead, it is whether those procedures possess technical infirmities which render suspect the results obtained through their use.

We remain persuaded of the validity of our analysis of the question in ALAB-422. This is so notwithstanding Mr. Farrar's emphasis upon what was later said by the *Indian Point* Board in ALAB-436, fn. 4, *supra*. In that case, as here, both the staff and the licensee determined ground acceleration by calculating the average of the peak accelerations of recorded earthquakes of the postulated intensity. After giving its approval to that method, the Board

¹⁰ See 6 NRC at 60. Contrary to Mr. Farrar's suggestion (p. 425), in ALAB-422 we did not treat that amendment "as though it had tightened the rules."

went on to take note of the suggestion of the licensee witness that there were other procedures which might produce more accurate correlations of intensity with earthquake damage.¹¹ Although, seizing upon that suggestion, the Board manifested its belief that the staff should endeavor to seek a more direct correlation between intensity and ground motion, it stressed that such a correlation likely would produce a result *less* conservative than that derived from the method of ascertaining acceleration now being used by the staff. Because Mr. Farrar does not accept this conclusion, some elaboration on what was said by the *Indian Point* majority on the point appears now warranted.

In carrying out a Fourier analysis (to which the *Indian Point* majority referred (6 NRC at 585)), a complicated repetitive oscillation is broken down into its harmonic components. In the instance of earthquakes, the precise nature of the associated earth oscillations (*e.g.*, frequencies and amplitudes) depends upon the size of the earthquake source and the stresses involved, as well as upon the geological characteristics of the surrounding rock formations. With sufficient available earthquake information for a particular region, a Fourier analysis will identify the predominant frequencies which would be produced by an earthquake in that region. (Once those frequencies have been identified, buildings and other structures can be designed to withstand them specifically.)

If, then, there were considerable information available respecting the various aspects of the geologic formations in New England which might produce an intensity VIII earthquake in that region, a Fourier analysis might be expected to identify the predominant frequencies associated with a New England earthquake of such intensity. But it is clear from this record that there is very little available information along those lines. More specifically, there has been only one New England earthquake (the 1755 Cape Ann event) which has been generally acknowledged to have been possibly of intensity VIII.

In these circumstances, in order to employ a Fourier analysis in connection with an intensity VIII earthquake, it would be necessary to look to data accumulated in the study of earthquakes in California—the only region in the continental United States which has experienced an appreciable number of seismic events of that magnitude. But, given the indisputable and marked geological differences between the two areas, there is no reason to expect that the predominant frequencies attendant upon a *California* earthquake of a particular intensity will correspond with those produced by a *New England* earthquake of the same intensity. Thus, the use of a Fourier analysis based upon California data would give rise to a substantial possibility that the facility's seismic design—in turn grounded upon the results of that analysis—would not be adequate to withstand the frequencies which would be

¹¹ 6 NRC at 585, quoted by Mr. Farrar at p. 432.

actually produced were an intensity VIII earthquake to occur in the Seabrook vicinity.

In contrast to the Fourier analysis approach, the applicants' and the staff's approach requires that the facility be designed to withstand the full range of frequencies which have been encountered in intensity VIII earthquakes, *no matter where in the continental United States they may have occurred*. Stated otherwise, instead of the plant being designed with one or two specific frequencies in mind (the consequence of an application of a Fourier analysis), the seismic design must take into account a *broad* band of possible frequencies. To be sure, this methodology does involve the averaging of the acceleration peaks. But to repeat what was said in ALAB-422, 6 NRC at 64, this is justified by the fact that high frequency waves (which are included in the broad band of frequencies) do not affect massive concrete structures.¹²

It need be added only that none of the parties to this proceeding—intervenors included—criticized the methodology found by Mr. Farrar to have been unsatisfactory. For its part, the Coalition thought an error factor should be added. In our view, that added conservatism is unwarranted.

In sum, Mr. Farrar may be right (assuming the availability of sufficient base data applicable to the region) that alternative—and perhaps better—means exist for correlating intensity and ground motion. But it scarcely follows that the staff's and applicants' choice of the method employed by them (very likely dictated by the paucity of available data on East Coast intensity VIII earthquakes) was impermissible. To repeat, that method is not proscribed in Appendix A and the lack of precision in the results obtained from its use lies in the direction of requiring a more conservative design.

¹² Upon being shown this portion of our opinion, Mr. Farrar informed us that it was not the Fourier analysis itself that he had in mind when he indicated in his August 3rd opinion (pp. 431-433) the approach that he favored. Rather, as is reflected in subsequent parts of his opinion, he believes that earthquake records should be analyzed to determine the "maximum level of damaging accelerations." (p. 433). As he envisioned it, this would indeed be done by evaluating the "frequency spectrum associated with" individual peak accelerations on seismograms (as the *Indian Point* Board had suggested, 6 NRC at 585, quoted in Mr. Farrar's opinion, p. 433). But in his view, this type of analysis would be undertaken in order to obtain, not a particular frequency against which to design the plant, but the highest *magnitude* associated with the frequencies in the damaging range. The magnitude thus determined would serve as the value representative of the particular intensity in question; in other words, it would be correlated with the intensity scale in the same manner that the "mean of the peaks" currently is.

In our view, this suggestion has the same infirmity (as applied to New England earthquakes) as does the Fourier analysis. There simply is not an adequate data base to obtain the "frequency spectrum associated with" intensity VIII earthquakes in that region.

Supplemental opinion of Dr. Buck and Dr. Quarles, in response to the August 3, 1979 dissenting opinion of Mr. Farrar:

At the Commission's direction,¹ we conducted an extended evidentiary hearing on the seismic and geological aspects of the Indian Point nuclear reactor site located near Peekskill, New York. On the basis of the evidence adduced at that hearing, we rendered a decision in which we found, *inter alia*, (1) that the safe shutdown earthquake (SSE) for the Indian Point site had a maximum intensity of VII; (2) that a value of 0.15g was appropriately assigned to the maximum vibratory ground motion (acceleration) which might result from such an earthquake; and (3) that no need existed to require the licensees to install an expanded microseismic monitoring network. ALAB-436, 6 NRC 547, 624 (1977). Mr. Farrar noted a partial dissent (*id.* at 625-29), which was recently supplemented by a full opinion.

In view of the fact that Mr. Farrar now is prepared to join us in the selection of an intensity VII earthquake for the Indian Point SSE (10 NRC at, dissenting opinion, p. 413), we perceive no occasion to dwell upon the reasons he gives for doing so. Nor is there need to discuss here the basis for his disagreement with our resolution of the ground acceleration question. As he makes clear (*id.* at 413, dissenting opinion, pp. 431-435), his quarrel is with the methodology employed both in this proceeding and in the *Seabrook* proceeding for ascertaining the ground motion to which a nuclear plant is likely to be exposed as the result of the occurrence of an earthquake of a specified intensity.² In a supplemental opinion issued today, the *Seabrook* Board majority responded to Mr. Farrar's criticisms of that methodology. 10 NRC at 416-417. We agree with that response and are content to rest upon it.³

What that leaves is the microseismic monitoring network question which was not presented in *Seabrook*. In ALAB-436, we said:

The preponderance of the evidence indicates that an expanded network will not produce data to enhance assurance of public health and safety. The data already at hand from the existing networks do not provide any basis for requiring an additional network.

6 NRC at 624. Mr. Farrar does not explain why this conclusion was wrong, other than to note the staff's belief that "something in the general vicinity

¹ CLI-75-8, 2 NRC-173 (1975).

² Mr. Farrar's dissenting opinion covers the two proceedings; in *Seabrook*, it is addressed to the views of the majority on the seismic issues there presented which were set forth in ALAB-422, 6 NRC 33, 57-64.

³ The discussion of the Fourier analysis at the conclusion of the *Seabrook* majority's supplemental opinion is equally applicable to a postulated intensity VII earthquake occurring in the vicinity of the Indian Point site.

appears to be 'localizing earthquake activity' " and, therefore, "safety would be enhanced by pursuing further investigation in the vicinity." 10 NRC at 435. In our judgment, this unparticularized (and unsupported) belief is much too thin a reed upon which to saddle the licensees and their ratepayers with the million dollar expense (see 6 NRC at 608-609) which installation and operation of the network would entail. This is particularly so given the general agreement (not challenged by Mr. Farrar) that the Ramapo fault—the existence of which prompted the staff's decision to call for the expanded microseismic network—is not a capable fault.

Mr. Farrar also suggests that the network would "advanc[e] our general knowledge of seismicity, particularly with respect to the relationship between microearthquakes and larger earthquakes." 10 NRC 435. Perhaps so, But, absent some indication (and we think there is none) that the enlarged network is necessary to provide reasonable assurance that operation of the Indian Point reactors will not endanger the public health and safety, it is difficult to understand why the licensees and their ratepayers should be required to bear the considerable cost of broad-gauged seismic research projects.

Messrs. Jay A. Silberg, Matias F. Travieso-Diaz, Harry H. Volgt, Lex K. Larson, Michael F. McBride, Troy B. Conner, Jr. and Robert M. Rader, Washington, D.C. jointly appearing on behalf of the respective applicants, movants for summary disposition.

Mr. Richard Ihrig, St. Paul, Minnesota, for the Tyrone intervenors.

Ms. Sue Reinert, Oswego, New York, as representative of the Sterling intervenors.

Dr. Chauncey Kepford, State College, Pennsylvania, as representative of the Peach Bottom-Three Mile Island intervenors.

Mr. David Caccla, Sewell, New Jersey, *pro se*, intervenor in Hope Creek.

Messrs. Bernard M. Bordenick and Stephen H. Lewis for the NRC staff.

The Appeal Board grants applicants' motion for summary disposition on fourteen of twenty-six issues raised by the intervenors in these consolidated proceedings involving the generic issue of the significance of radon gas release attributable to the mining and milling of uranium fuel. Those issues for which summary disposition is denied are set for hearing.

RULES OF PRACTICE: SUMMARY DISPOSITION

Where response to motion for summary disposition does not contest the movant's position, summary disposition can be granted on the basis of the movant's affidavit taken in conjunction with the balance of the record. 10 CFR 2.749 (b) and (d).

NEPA AND AEA: JURISDICTION

Neither NEPA nor the Atomic Energy Act applies to activities occurring in foreign nations and subject to their sovereign control. *Babcock & Wilcox*, CLI-77-18, 5 NRC 1332 (1977); *Edlow International Company*, CLI-76-6, 3 NRC 563 (1976); *Westinghouse Electric Corp.*, CLI-76-9, 3 NRC 739 (1976).

NEPA: SCOPE OF INTERESTS PROTECTED

Where major federal action is involved, related activities undertaken abroad that can have a significant impact on the environment of this country are within NEPA's ambit.

DECISION

These consolidated proceedings involve a generic issue—the significance of radon gas releases attributable to the mining and milling of uranium fuel. The NRC staff and the respective applicants recently filed motions for summary disposition with us; we have the responses to those motions also in hand. As we explain in this opinion, we are granting summary judgment on certain issues but denying it as to others which, in turn, we are setting for hearing.

This action represents another step in our efforts to resolve the radon controversy without holding separate, repetitive trials in a large number of reactor licensing proceedings. Those efforts have been time-consuming and have involved novel and somewhat complicated procedures. In order to provide a setting for today's decision, we begin with a recapitulation of the earlier steps we have taken.

I. BACKGROUND

We first became directly involved in the radon issue when the Commission found to be incorrect the value it had previously assigned to represent the emissions of radon expected to occur as a result of the mining and milling of the uranium necessary to fuel an average-sized reactor for a year.¹ 43 Fed. Reg. 15613 (April 14, 1978). At that point, the Commission instructed us to reopen the records in pending licensing proceedings “to receive new evidence on radon releases and on health effects resulting from radon releases.” 43 Fed. Reg. at 15615-16.

In carrying out that instruction, we determined in ALAB-480 not to try the issue separately in each of the nearly twenty proceedings in which it was presented. 7 NRC 796, 803 (1978). Nor did we consolidate them all for hearing. 7 NRC at 799-803. Instead, we took a middle road by using as a lead case one proceeding—*Perkins*²—in which the radon issue had already received considerable attention at the Licensing Board level. 7 NRC at 804-05. We directed that the record already made there be incorporated into all the other proceedings. *Ibid.* Of course, as the parties to those cases had not participated in *Perkins*, we gave them the opportunity to “supplement, contradict, or object to” anything in the *Perkins* record, as well as to comment upon the decision later handed down by the *Perkins* Licensing Board. 7 NRC at 805-06.

¹ That figure had been contained in Table S-3 (10 CFR Part 51), which provided, for use in individual licensing proceedings, a summary of the environmental effects attributable to the uranium fuel cycle. Matters covered in Table S-3 do not otherwise have to be dealt with in individual cases; in this regard, the Table notes specifically that it does not address the question of the health effects occasioned by the effluents described therein.

² *Duke Power Company* (*Perkins Station, Units 1, 2, and 3*), Docket Nos. STN 50-488, 50-489, and 50-490.

It took a number of steps and considerable time to accomplish what we had set out to do. After receiving and studying the parties' initial submissions, we called for further memoranda on two topics. ALAB-509, 8 NRC 679 (1978).³ In the first place, we sought more particularization of the objections to the *Perkins* record and decision insofar as the rates of radon release and levels of radon concentration were concerned. 8 NRC at 682-84.⁴ Secondly, we asked for further arguments on the validity of the Licensing Board's *de minimis* approach to the health effects of exposure to radon released by the uranium fuel cycle. 8 NRC at 684-85.⁵

After the requested papers and responses were filed, we decided to consolidate the relatively few proceedings in which intervenor groups were actively participating on the radon issue, putting the rest of the proceedings to one side for a time. ALAB-540, 9 NRC 428 (April 25, 1979).⁶ Our consolidation order noted that the affected cases seemed ripe either for consideration at trial or (possibly) for summary disposition. 9 NRC at 432, 434-35.⁷ Acting on our invitation, the respective applicants joined together and filed a motion for summary disposition on all issues raised by the intervenors; the staff also filed a motion, but sought to dispose summarily of only two issues. Responses were duly filed by the intervenors.⁸ For its part, the staff response gave some support—at times only tentatively or conditionally—to certain aspects of the applicants' motion, while opposing it in other respects. We turn now to a discussion of the motions and our decision thereon.

II. DECISION

The motions for summary disposition were organized in terms of the "twenty-six deficiencies" which the *Tyrone* and *Sterling* intervenors had earlier told us they perceived in the *Perkins* record. In effect, the applicants' and staff's motions rely for summary disposition on the sworn material in that

³ See also ALAB-512, 8 NRC 690 (1978).

⁴ As explained there, we did this because most of the objections filed with us had focused on the magnitude of health effects and not on the magnitude of radon releases and concentrations.

⁵ We thought it would be appropriate, once the matter of release rates and concentration levels was settled, to take up the *de minimis* theory at the threshold. 8 NRC at 682, 684.

⁶ A full statement of our reasons for doing so was set out at that time. 9 NRC at 433. The cases we consolidated are those listed in the caption of this opinion. *But see* fn. 8, *infra*.

⁷ At that time, we also said we would give no further consideration to certain matters sought to be raised by the intervenors, on the ground they were beyond the scope of what was before us. 9 NRC at 434. For ease of reference, we repeat our ruling in this opinion (pp. 443-444, *infra*).

⁸ The *Tyrone* intervenors—who had been quite active earlier and were in fact the principal authors of the "twenty-six deficiencies" discussed throughout this opinion—this time simply joined in the papers filed by the other intervenors. This was understandable, for the *Tyrone* project was being cancelled by its owners. Indeed, for that reason we have recently dismissed the *Tyrone* proceeding (unpublished order of August 30, 1979). Henceforth, then, *Tyrone* will not appear in the caption of our radon orders.

record and the supplemental materials (including in particular the affidavit of Dr. Morton I. Goldman) filed directly with us. The intervenors' opposition is based upon the materials they have filed with us and their arguments that the other side's materials are insufficient to eliminate the need for a hearing.

We find it convenient in our decision as well to proceed in terms of the twenty-six deficiencies.⁹ With respect to many of them, we believe that the materials put before us do justify summary disposition. But in five subject areas (encompassing twelve deficiencies), we conclude that there remain genuine issues of material fact. We delineate these five areas below; as to them, an evidentiary hearing will be required. After setting them out, we then turn to a discussion of why, on all other points, summary disposition is appropriate.¹⁰

A. Summary Disposition Denied.

As already indicated, the factual questions which need further development at a hearing involve a number of the "deficiencies" advanced by the intervenors. But in order to structure the hearing in an efficient manner, we are grouping the issues into five categories according to their general subject matter. We discuss these below. We note at the outset, however, that as is customary the explanation for our purely interlocutory decision to deny summary disposition as to these topics is quite abbreviated.¹¹ (In contrast, we write at greater length with respect to those issues where we are granting summary disposition. For, in that respect, this opinion represents our final word.)

1. Emissions from Mill Tailings Piles. This topic involves by far the largest number of factual questions which need further development. The intervenors have cast doubt upon the accuracy of the value the staff has assigned to the emissions from uncovered tailings piles.¹² And the claim that the piles will be covered or stabilized, and can be maintained in that fashion, has not been sufficiently well established. In this respect, the de-stabilizing effects of erosion, tails migration, and the sheer volume of the pile remain to be fully considered.¹³ Nor has there yet been demonstrated the requisite assurance that

⁹ This is simply for ease of organization; we are not overlooking the contribution of the *Peach Bottom-Three Mile Island* intervenors, who also have presented us with a wealth of material. We are satisfied that all of the relevant points they have raised can fairly be included within the twenty-six deficiencies, and that our decision takes into account the material upon which they have relied.

¹⁰ In ALAB-509, *supra*, we pointed out that before we could come to grips with the health effects issue (involving, *inter alia*, the *de minimis* theory) we had to pin down the magnitude of radon releases and the levels of radon concentration resulting from the portion of the fuel cycle under scrutiny here. 9 NRC at 682-84; *see also* fn. 5, *supra*. Because factual questions relating to these other topics remain open, our decision today does not deal with health effects. For the same reason, neither will the upcoming hearing.

¹¹ Indeed, we do little more than simply list those areas where factual disputes remain.

¹² Deficiency 10; *see also* the affidavit of Dr. Robert O. Pohl.

¹³ Deficiencies 13, 14, and 21; *see also* the *Peach Bottom-Three Mile Island* intervenors' Answer, pp. 7-8.

regulatory control of mill tailings can be maintained for an appropriate length of time.¹⁴ And the effect of the guidelines under which such control is now exercised is not clear. For one thing, the guideline for stabilized piles calls for radon releases to be no more than twice background radon emissions in the surrounding environs. This guideline is formulated in terms of curies of radon released per unit area. Thus, the allowable release from a stabilized tails pile depends upon the area of that pile (as well as on the rate of radon emission from the surrounding area). Because the volume of the tails pile left from milling one "annual fuel requirement" (AFR)¹⁵ would depend on the grade of ore being mined,¹⁶ the area of such a pile is likely to be similarly dependent. Under the guideline, this, in turn, would affect the amount of radon allowed to be released from the pile. But the guideline does not take account of this effect, *i.e.*, the effect that ore grade would have on allowable radon emission. This omission would be particularly pronounced if the fractional uranium recovery from ore diminishes as the ore grade decreases.¹⁷ And, in any event, there is no indication that at the levels involved compliance with the guideline value for radon emission rate could be verified by direct measurement.¹⁸

2. Underground Mines The record does not indicate the extent to which abandoned underground mines both can and will actually be "sealed."¹⁹ Moreover, we cannot determine at present the extent to which an unsealed mine could continue to emit radon through, for example, natural convection.²⁰

3. Open Pit Mines There is uncertainty over the rate of emissions from both unreclaimed and reclaimed open pit mines. In particular, releases from

¹⁴ Deficiencies 13 and 16; see also Answer (*supra* fn. 13), p. 7.

¹⁵ As noted earlier, Table S-3 is set up in terms of the environmental impacts associated with the production, use and disposal of the fuel needed to run an average-sized reactor for one year.

¹⁶ Deficiency 17.

¹⁷ See the affidavit of Dr. Chauncey Kepford, p. 2. In this regard, however, we reject the assertion, reflected in deficiency 2, that the mill tailings volume will be larger than predicted as a result of less efficient use of fuel (*i.e.*, a lower "duty factor") than the staff assumed in estimating ore requirements. This precise "duty factor" issue was decided in the applicants' favor in the *Sterling* proceeding by the Licensing Board and affirmed by us. LBP-77-53, 6 NRC 350, 395-98 (1977); ALAB-502, 8 NRC 383, 398 (1978). To be sure, as the *Peach Bottom-Three Mile Island* intervenors' Answer (pp. 5-6) points out, that decision (even though it dealt with a generic issue) cannot *ipso facto* be made binding on intervenors (like themselves) in other proceedings. But their argument in support of deficiency 2 does not suggest any new evidence on the precise subject of fuel duty factor. In this regard, the "Resource Consumption" document they rely upon (and which Dr. Kepford presented in the *Perkins* proceeding) does not call into question the assumed duty factor. (To the extent, however, that it or other materials furnished us relate in other ways to the amount of ore involved in producing one AFR, we have considered them in reaching our decision that a hearing is required).

¹⁸ *Cf.* Deficiencies 13 and 16.

¹⁹ Deficiency 3; Kepford affidavit, p. 3.

²⁰ Deficiency 3; Kepford affidavit, pp. 2-3.

reclaimed mines may be higher than expected, due to the physical rearrangement of the overburden as it is replaced in the pit.²¹

4. Water Pathways There does not appear to have been a complete assessment of potential exposure to radon reaching humans through water pathways. In particular, it might be possible for groundwater to enter abandoned mines or mill tailings piles, to absorb radon or its progenitors and then to transport them to points which could ultimately lead to their inhalation or ingestion by humans.²²

5. Phosphate Residues The production of phosphate fertilizer leaves a residue which conceivably could be reworked to recover the uranium it contains. Such operations could result in radon releases beyond those attendant upon the phosphate production itself. The amount of such releases has not been sufficiently quantified to allow comparison with the amount of radon released from the direct mining and milling of an equivalent amount of uranium.²³

B. Summary Disposition Granted

We find it appropriate to grant summary disposition of the other fourteen deficiencies. For purposes of explaining our action, we can group those deficiencies generally into four categories. The first includes those which we have already indicated do not warrant further attention. The second comprises those which are unsupported in the sense that the intervenors did not respond when they were put to the test by the applicants' motion; in essence, then, as to these matters the applicants' motion is uncontested. The third involves those which rely upon an incorrect reading of the extra-territorial reach of NEPA. The fourth consists of a single item that seeks to raise questions which we find do not present genuine issues of material fact.

1. Issues Previously Resolved Earlier in this opinion (fn 17, *supra*), we explained why deficiency 2, dealing with "duty factors," was to be given no further consideration. In a prior opinion (ALAB-540, *supra*, 9 NRC at 434) we set forth our reasons for excluding three other deficiencies.²⁴ To recapitulate, two (8 and 19) concerned the cost of nuclear fuel (as it would be

²¹ Deficiencies 4 and 5. To some degree it is unclear whether deficiency 4 is addressed to radon released from operating open pit mines or from open pit mines that have been shut down with their surroundings left unreclaimed. Citing data from the Sweetwater Draft Environmental Statement, the Goldman affidavit (p. 6) explains that the figures referred to in that environmental statement relate to the active mining period; per AFR, the releases during operation are said to be lower than those assumed by the staff in *Perkins* as representative of an underground mine. This may explain why, in answering the applicants' motion for summary disposition, the intervenors seem to pursue only the subject of abandoned open pit mines.

²² Deficiencies 7 and 18.

²³ Deficiency 26.

²⁴ See fn. 7, *supra*.

affected by efforts to reduce radon emissions) and the third (25) dealt with the radon releases from the fly ash of coal. We held that neither of these issues was material to the matter at hand, which involves our attempt to evaluate the environmental consequences of the radon emitted in the course of mining and milling uranium for nuclear fuel.

2. Uncontested Matters The *Sterling* intervenors' response to the applicants' motion for summary disposition did not contest the applicants' position on several of the asserted deficiencies. That is, while the intervenors initially pointed to defects they saw in the *Perkins* record, they did not respond to the affidavit the applicants subsequently supplied. In accordance, then, with the summary disposition rule (see particularly 10 CFR 2.749(b) and (d), set out in ALAB-540, *supra*, 9 NRC at 432 fn. 9), we can proceed on the basis of the affidavit (taken in conjunction with the balance of the record) and grant summary disposition if otherwise appropriate. In this connection, we have independently examined each of these uncontested matters and agree with the applicants that none of them presents a genuine issue of material fact. Our reasons are briefly noted in the margin;²⁵ based thereon, we grant summary disposition of the deficiencies numbered 6, 11, 12, 15, 22, 23, and 24.

In connection with one of these deficiencies (22), the intervenors—although not taking issue with the value the applicants assigned to the radon released from uranium enrichment tailings—focused their response on the health effects of the release. As already indicated (p. 440, *supra*), at this stage

²⁵ Deficiency 6 asserts that mine test holes have been neglected as a source of radon. But the Goldman affidavit (pp. 8-9) indicates that this source involves a negligibly small potential contribution.

Deficiency 11 suggested that results from a certain study revealed that the "emanating power" of radon from mill tailings is site specific. But the Goldman affidavit (pp. 11-12) informs us that, while the study did so indicate, it also revealed that the representative value chosen by the staff was conservative in any event.

Deficiency 12 alleges that no consideration was given to radon releases from uranium stockpiled at mills. But as the applicant points out (Statement of Material Facts, p. 8), the staff explained in *Perkins* that radon releases from stockpiled uranium were estimated to be so small as to warrant their non-inclusion.

Deficiency 15 asks the staff to investigate potential releases from "heap leaching," a process designed to enhance uranium recovery by allowing water to percolate through the ore. On this point, the Goldman affidavit (pp. 12-13) informs us that heap leaching will contribute only a small amount (1-2%) of the total U.S. uranium supply and, more importantly, if used would result in the release of less radon than the standard milling process.

Deficiencies 22, 23, and 24 call for further consideration of emissions from enrichment tails, the UF₆ conversion process and "other portions of the fuel cycle." (22 deals with another topic as well, which we discuss in the text, *infra*.) The Goldman affidavit (pp. 14-16) explains, however, that any release of radon from enrichment tails would be at a very slow rate (even assuming the tails were released from the containers within which they are sealed). And, as the affidavit also points out (pp. 16-17), (1) the radon contribution from the UF₆ conversion process was addressed in *Perkins* and found to be very small and (2) releases from other portions of the fuel cycle were also addressed in *Perkins*, where they were found to be near zero.

we are still trying to ascertain the magnitude of the releases of radon involved in the relevant aspects of the fuel cycle; only after that is done will health effects come into play. At that point, what was said on that subject in deficiency 22 can be considered.

3. Topics Beyond NEPA's Reach The applicants and the staff both ask for summary disposition of the contentions about the environmental consequences of radon released from foreign mining and milling operations producing fuel for domestic nuclear power plants.²⁶ Their motion rests on the ground that NEPA has no "international reach" and that these contentions are consequently beyond the Commission's jurisdiction. Intervenors deny that NEPA is limited to domestic impacts. They note that foreign fuel is a possible source of fuel for any U.S. reactor, stress that foreign governments may have "less stringent regulatory policies" than ours, and urge that radon releases from fuel mined and milled abroad may thus be higher than those resulting from domestic sources. Therefore, they contend, we must explore those foreign operations.

The Commission has addressed the question of the international implications of both NEPA and the Atomic Energy Act in recent cases involving export licenses for nuclear fuel and reactor components. *Babcock & Wilcox*, CLI-77-18, 5 NRC 1332 (1977); *Edlow International Company*, CLI-76-6, 3 NRC 563 (1976); *Westinghouse Electric Corp.*, CLI-76-9, 3 NRC 739 (1976). For purposes of this agency's proceedings, those decisions settle that neither NEPA nor the Atomic Energy Act applies to activities occurring in foreign nations and subject to their sovereign control. This reflects the rule of statutory construction that American laws are to be read as applying only to conduct occurring in or having effect within United States territory, unless the statute clearly indicates otherwise. It also represents the considered judgment of the Departments of State and Justice. The reasoning underlying the adoption of this position is carefully and cogently set out at some length in *Babcock & Wilcox*, *supra*, 5 NRC at 1336-46, and *Edlow*, *supra*, 3 NRC at 584-85; no purpose would be served by our repeating those discussions here. The principles developed in those cases control the issue before us.²⁷

²⁶ Deficiencies 9 and 20.

²⁷ The intervenors also argue that a failure by this agency to take account of the environmental consequences visited on foreign citizens by activities undertaken in their own nations (e.g., the mining of uranium in their countries for use here) evidences "racial and nationalist bigotry." To the contrary, the interpretation of NEPA we follow is in accord with the sensible and sensitive approach that "it is not for us to make policy decisions for another sovereign nation on the social balance to be struck . . . [in connection with its] internal affairs." 3 NRC at 585. A similar approach may be found in other statutes. See, e.g., the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act relating to exports, cited in *Consumers Power Company* (Midland Units 1 and 2), ALAB-458, 7 NRC 155, 175 fn. 80 (1978): "Exports [of pesticides] are essentially unregulated (7 U.S.C. 136(o)), on the theory that the foreign country in which the product will be used should determine whether its particular needs—e.g., control of a disease-bearing pest not present in this country—are such that on balance the product is beneficial there."

Accordingly, we hold that the environmental impacts within foreign nations of radon released during the mining and milling of uranium within their borders are matters lying outside the scope of this proceeding²⁸ and dismiss those of intervenors' contentions which seek to litigate such issues.²⁹

This does not end our inquiry, however, because the *Sterling* intervenor further contends that "[e]ven if one wants to consider only . . . impacts [affecting this country], foreign mining and milling must be included. The dose from radon is to a world population; it doesn't stop at the U.S. border. For instance, how can doses to the U.S. population from Canadian mining and milling be ignored? At the very least, the effect on U.S. residents of foreign mining and milling should be estimated."³⁰

We are prepared to accept the proposition that, where major federal action is involved, related activities undertaken abroad that can have a significant impact on the environment of this country are within NEPA's ambit.³¹ But that statute contemplates our dealing with circumstances "as they exist and are likely to exist," *Carolina Environmental Study Group v. United States*, 510 F.2d 796, 801 (D.C. Cir. 1975); "remote and speculative" possibilities need not be explored. *Life of the Land v. Brinegar*, 485 F.2d 460, 472 (9th Cir. 1973), *certiorari denied*, 416 U.S. 961 (1974). We are unaware of any Canadian uranium mines or mills so situated that radon released by their operation would adversely affect this nation's environment—and intervenors do not indicate the existence of any. In the circumstances, the issue is not properly before us. Intervenors have a threshold obligation of pointing to specific facilities whose operation might affect the United States in the manner they would have us explore. "[A]dministrative proceedings should not be a

²⁸ Commissioner Gilinsky has expressed the view that export licensing decisions which affect the commonality, those oceanic and arctic areas outside the sovereignty of any particular nation, are matters of Commission concern. 5 NRC at 1354-56. Such issues are not pressed in this case and we are therefore not called upon to reach them.

²⁹ Subsequent to the Commission decisions mentioned, the President issued Executive Order 12114 of January 4, 1979 entitled *Environmental Effects Abroad of Major Federal Actions*. 44 Fed. Reg. 1957 (January 9, 1979). The Order recites that it "represents the United States government's exclusive and complete determination of the procedural and other actions taken by Federal agencies to further the purpose of the National Environmental Policy Act, with respect to the environment outside the United States, its territories and possessions." Whether or not that order legally controls the actions of independent regulatory Commissions generally or the NRC particularly (a matter of some debate), we certainly may take its directives into consideration in making an informed decision. *Westinghouse Electric Corp. v. United States*, 598 F.2d 759, 774-75 (3rd Cir. 1979), *affirming Mixed Oxide Fuel*, CLI-78-10, 7 NRC 711, 718-19 (1978). We note that Section 2-5(a) (v) of the Executive Order specifically exempts "actions relating to nuclear activities" (except for exports of nuclear reactors) from its coverage. Nothing we hold here is inconsistent with that presidential directive.

³⁰ *Response to Joint Motion for Summary Disposition* at 7 (June 25, 1979).

³¹ See *Wilderness Society v. Morton*, 463 F.2d 1261, 1262 (D.C. Cir. 1972); *Sierra Club v. Adams*, 578 F.2d 389 (D.C. Cir. 1978); *Sierra Club v. Coleman*, 405 F.Supp. 53 (D.D.C. 1975); *Babcock & Wilcox, supra*, CLI-77-18, 5 NRC at 1342-44.

game or a forum to engage in unjustified obstructionism by making cryptic and obscure reference to matters that 'ought to be' considered and then, after failing to do more to bring the matter of the agency's attention, seeking to have that agency determination vacated on the ground that the agency failed to consider matters 'forcefully presented.' " *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553-54 (1978). On this basis we dismiss this aspect of intervenors' "foreign fuel" claim as well.³²

4. No Genuine Issue of Material Fact This leaves for consideration only deficiency 1. In it, the intervenors maintain that because radon releases vary from mine-to-mine, analysis of the radon releases associated with a given nuclear power plant cannot be completed until the particular mines that will produce fuel for that plant are known.

This approach would be unworkable, for there is no way of knowing what a plant's sources of uranium will be over its forty-year life and the releases vary from time to time even at a given mine. To compensate, the staff uses for all nuclear plants an estimate based upon the emission rates from characteristic mining operations. In this regard, citing the same documents the intervenors relied upon to show the variability in the radon emission rates associated with various mines, the Goldman affidavit points out (pp. 2-5) that the staff estimate is conservative. That is, depending on the nature of the averaging technique applied to the measurements taken at two sets of mines, the staff estimate is one and a half to two times higher than the calculated average.

In response, the intervenors do not quarrel with the correctness of these calculations. Instead, they argue that there is no correlation at all between radon emissions and tons of ore mined.

To be sure, the amount of radon emitted per ton of ore mined does fluctuate considerably. But it appears that the staff's value is close to the upper limit for any mine. Therefore, using this value as an average to be associated with the fuel to be used over a plant's lifetime would overestimate the magnitude of the emissions attributable to that plant. Consequently, we find that the use of such an estimate—the only realistic approach—is reasonable for present purposes and warrants our granting the applicants' motion for summary disposition on this point.

III. FURTHER EVIDENTIARY HEARING

Each Appeal Panel member is assigned to at least one of the remaining consolidated proceedings (*Peach Bottom; Three Mile Island; Hope Creek; and Sterling*).³³ There appears, however, to be no compelling reason why all

³² We are prepared, however, to reconsider our ruling upon intervenors' showing that Canadian uranium facilities do exist in situations where their radon emissions might have an impact on this country's environment beyond that which would flow from processing the same amount of ore domestically.

³³ As previously noted (fn. 8, *supra*), the *Tyrone* proceeding has now been dismissed.

five members need to be present at the further evidentiary hearing convened for the purpose of taking additional evidence on the matters as to which summary disposition is not being granted. Accordingly, we have selected three of our members to preside at that hearing: Mr. Rosenthal (who will serve as Chairman), Dr. Buck and Dr. Johnson.³⁴ They intend to conduct an initial prehearing conference with the parties by telephone on Thursday, September 27, 1979.³⁵ The purpose of the conference will be to discuss, at least preliminarily, such matters as the scheduling of the hearing (including its date of commencement and location) and the additional affirmative evidence which the parties intend to introduce.³⁶

It is so ORDERED.

FOR THE APPEAL BOARDS

C. Jean Bishop
Secretary to the Appeal Boards

³⁴ Once the evidentiary hearing has been completed, *all* of us will participate in the consideration of the issues to be decided.

³⁵ The prior week, the Secretary to the Appeal Panel will be in contact with the representatives of the parties to arrange a mutually convenient time for the conference.

³⁶ In this regard, we remind the parties that health effects will not be taken up at this hearing.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Panel Chairman

In the Matter of
**PENNSYLVANIA POWER AND
LIGHT COMPANY**
and
**ALLEGHENY ELECTRIC
COOPERATIVE, INC.**
(Susquehanna Steam Electric
Station, Units 1 and 2)

Docket Nos. 50-387
50-388

September 19, 1979

The Panel Chairman dismisses as foreclosed by the Commission's Rules of Practice, 10 CFR 2.730(f), intervenors' interlocutory appeal for a Licensing Board order disposing of scheduling and discovery matters.

Messrs. Jay E. Silberg and Alan R. Yuspeh, Washington, D.C., for the applicants, Pennsylvania Power and Light Company, *et al.*
Mr. Thomas J. Halligan, Scranton, Pennsylvania, for the intervenor, Citizens Against Nuclear Dangers.
Mr. James M. Cutchin, IV, for the Nuclear Regulatory Commission Staff

MEMORANDUM AND ORDER

This is an operating license proceeding involving Units 1 and 2 of the Susquehanna Steam Electric Station. On August 24, 1979, the Licensing Board entered an order in which it disposed of a number of scheduling and discovery matters which had been presented to it by one or another of the parties to the proceeding. Dissatisfied with the order, one of those parties—intervenor Citizens Against Nuclear Dangers (Citizens)—seeks to take an appeal from it.

In view of the manifestly interlocutory character of each ruling contained in the August 24 order, the appeal must be dismissed as foreclosed by the Commission's Rules of Practice. See 10 CFR 2.730(f); *Duke Power Company* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-433, 6 NRC 469, 470 (1977); *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-370, 5 NRC 131 (1977), and cases there cited. As the NRC staff

points out, the appeal having been filed by a lay representative of Citizens (who quite apparently is wholly unfamiliar with the Rules of Practice),¹ there might be warrant for treating it alternatively as a petition seeking directed certification of those rulings under 10 CFR 2.718(i). See *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478 (1975). The staff is also right, however, in its belief that insufficient cause has been assigned by Citizens for laying to one side in this instance our general disinclination to grant interlocutory review of discovery and scheduling orders as a matter of discretion. See, e.g., *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-318, 3 NRC 186 (1976); *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 769 (1975); *Consumers Power Company* (Midland Plants, Units 1 and 2); ALAB-344, 4 NRC 207 (1976); *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-295, 2 NRC 668 (1975).

Appeal dismissed.

It is so ORDERED.

FOR THE APPEAL PANEL CHAIRMAN

C. Jean Bishop
Secretary to the Appeal Panel Chairman

This action was taken by the Appeal Panel Chairman under the authority of 10 CFR 2.787(b).

¹ Although appeal boards (and most licensing boards as well) extend special consideration to litigants appearing without benefit of counsel, it scarcely follows that such litigants are free of any obligation to familiarize themselves with those rules. To the contrary, all individuals and organizations electing to become parties to NRC licensing proceedings can fairly be expected both to obtain access to a copy of the rules and to refer to it as the occasion arises. It might be added that, should such reference leave the *pro se* litigant or lay representative uncertain regarding precisely what procedural steps can or should be taken by him in certain circumstances, he undoubtedly will be able to obtain the guidance of staff counsel. Whether or not in agreement with the position of an intervenor on the merits of the issues presented in the particular proceeding, the staff traditionally has manifested a commendable willingness to provide that type of assistance.

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**HOUSTON LIGHTING AND
POWER COMPANY**

Docket No. 50-466

**(Allens Creek Nuclear Generating
Station, Unit 1)**

September 19, 1979

The Appeal Board denies as an interlocutory appeal prohibited by 10 CFR 2.730(f), petitioner's request for relief from a Licensing Board scheduling order establishing the final date for filing amendments to his contentions.

MEMORANDUM AND ORDER

Last Friday (September 14th), we received an undated paper from F. H. Potthoff, a *pro se* petitioner for intervention in this proceeding. That paper requests that we "strike down" a portion of the Licensing Board's August 27th scheduling order. Specifically, petitioner objects to that order—which he says he received on September 6th—insofar as it established September 14th as the final date for filing amendments to his contentions. In support of his position, petitioner points out that a "special prehearing conference" (see 10 CFR, 2.751a) is scheduled to begin on October 15th, and that under the Rules of Practice he would thus ordinarily have until October 1st to amend his contentions.¹

We need not await the responses of the applicant and the NRC staff to observe that the paper before us is in essence an interlocutory appeal. As such, it must be dismissed for running afoul of the general prohibition against such appeals. 10 CFR 2.730(f).² Nor are the circumstances such as to justify our treating the paper as a request for directed certification³ and undertaking to

¹ The Rules of Practice provide, in 10 CFR 2.714(a)(3) and (b), that an intervenor may amend his petition and add to his contentions without leave of the Board until 15 days before the special prehearing conference held under 10 CFR 2.751a. See also the Board's August 27th order, par. 1. The Board's August 6th order calendaring the October 15th conference indicated that it was being convened under Section 2.751a.

² The limited exception carved out by 10 CFR 2.714a is manifestly inapplicable here; it does not cover scheduling matters.

³ See 10 CFR 2.718(i) and *Public Service Company of New Hampshire* (Seabrook Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

review the challenged ruling on that basis. See, e.g., *Puerto Rico Water Resources Authority* (North Coast Unit 1), ALAB-361, 4 NRC 625 (1976); *Public Service Company of Indiana* (Marble Hill Units 1 and 2), ALAB-405, 5 NRC 1190, 1191, fn. 3 and accompanying text, 1192, fn. 7 and accompanying text (1977).

Of course, in declining to entertain petitioner's complaint at this time, we are neither passing upon its merits⁴ nor indicating that review of the ruling below is wholly unavailable. Rather, any such review must await the final outcome of the proceeding.⁵

Request for relief *denied*.⁶

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Dr. Buck did not participate in the consideration or disposition of this matter.

⁴ We do pause to make two observations. First, for petitioner's information, although the order in question does not cite 10 CFR 2.711(a) explicitly, that provision—referred to by the Board in its order of August 6th in connection with another class of petitioners—allows a Board, for good cause, to alter time periods otherwise established by the Rules. Second, we previously cautioned this Licensing Board about the need to give the parties sufficient notice before imposing an unexpected deadline on them. ALAB-535, 9 NRC 377, 388, fn. 16 (April 4, 1979). Even where a party has had a lengthy period for taking action, if that period had no established termination date he is still entitled to fair warning before it is brought to an end.

⁵ See, e.g., *Boston Edison Company* (Pilgrim Unit 2), ALAB-269, 1 NRC 411, 413 (1975).

⁶ See also *Pennsylvania Power and Light Company* (Susquehanna Units 1 and 2), ALAB-563, 10 NRC 449 (issued today) and cases there cited.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Chairman
Glenn O. Bright, Member
William E. Martin, Member

In the Matter of

**PACIFIC GAS AND ELECTRIC
COMPANY**

**Nos. 50-275
(OL)
50-323 (OL)**

**(Diablo Canyon Nuclear Power Plant
(Units 1 and 2)**

September 27, 1979

The Licensing Board issues a Partial Initial Decision in this operating license proceeding, concluding that (1) aircraft and missile operations in the vicinity of the Diablo Canyon plant do not present an undue risk to the public health and safety at the plant; (2) the Diablo Canyon plant will be able to withstand any earthquake that can reasonably be expected to occur on the Hosgri fault located approximately three miles from the site; and (3) the security plan for the plant complies with all applicable NRC regulations. An earlier Partial Initial Decision relating to certain environmental issues is incorporated in this Partial Initial Decision. Decision on certain other non-seismic safety and environmental issues is deferred.

TECHNICAL ISSUES DISCUSSED: Aircraft and missile crash risk; seismic design criteria.

**PARTIAL INITIAL DECISION
Operating Licensing Proceedings**

Appearances

For the Applicant, Pacific Gas and Electric

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For the Joint Intervenors

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For the Nuclear Regulatory Commission

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TABLE OF CONTENTS

I. Preliminary Statement and Introduction	454
II. Findings of Fact on Aircraft and Missile Accidents	459
III. Findings of Fact on Seismic Issues	463
A. Geologic Setting of the Site Contention (1)	468
B. The Hosgri Fault Earthquake Potential Contention (2)	478
C. Peak Instrumental and Effective Acceleration Contention (3)	486
D. Operating Basis Earthquake Contention (4)	490
E. Response Spectra and Seismic Design Contentions (5), (6), (7)	492
IV. The Security Plan Review	507

I. PRELIMINARY STATEMENT

This Board assumed that it would be able to issue an Initial Decision following the hearings in December 1978, through February 1979. The last proposed finding it received was from the NRC Staff on April 10, 1979.

While the Board was reviewing the proposed findings in the wake of Three Mile-Island-2 accident, on May 9, 1979, the Joint Intervenors filed a motion for the Board to reopen the evidentiary hearings in the light of TMI-2 or in the alternative to certify the questions to the Commission. The motion was supplemented by filings on May 10, 16, and 17, 1979.

On May 24, 1979, the staff requested the Board to defer ruling on the motion pending completion of the Staff inquiry and report as to the effects of the TMI accident on the Diablo Canyon proceeding.

On June 1, 1979, Pacific Gas and Electric (PG&E) opposed the motion.

On June 5, 1979, the Board issued an order which stated that it will defer its ruling until it receives the Staff's report. The Board recognized that the Staff analysis would in fact be a Commission position on those issues which are TMI related. To date, that position has not been released. The Board has determined that only three issues can be considered in this Partial Initial Decision: seismic, potential aircraft or missile crashes into the plant, and the security plan. Other safety issues await the TMI analysis. Doubts about the validity of the radon issue record were raised by the Appeal Board in ALAB-562 on September 11, 1979.¹ That issue will also be deferred.

The security plan issue has been considered under its special circumstances.

Introduction

On October 19, 1973, the Atomic Energy Commission issued the following notice in the *Federal Register* "Notice of Receipt of Application for Facility Operating Licenses; Notice of Consideration of Issuance of Facility Operating Licenses and Notice of Opportunity for Hearing." (38 *Fed. Reg.* 29105). The Notice related to the application of Pacific Gas and Electric Company (PG&E) for licenses to authorize the operation of the Diablo Canyon Nuclear Power Plant, Units 1 and 2 (the facility). The facility consists of two units located on the Pacific Ocean coastline in San Luis Obispo County, California. The units are manufactured by Westinghouse and are designed to operate at steady-state power levels of 3,338 and 3,411 megawatts thermal with a net total electric output of approximately 2,190 MWe.

On June 12, 1978, this Board issued a Partial Initial Decision relative to environmental issues based on an evidentiary hearing held December 7-10, and 13-17, 1976.² That Partial Initial Decision is incorporated in this Partial

¹ *Philadelphia Electric Company* (Peach Bottom, Units 2 and 3), *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 2), *Public Service Electric and Gas Company* (Hope Creek Generating Station, Units 1 and 2), *Northern States Power Company* (Minnesota) and (Wisconsin) (Tyronne Energy Park, Units 1), *Rochester Gas and Electric Corporation* (Sterling Power Project, Nuclear Unit 1), ALAB-562 10 NRC 437 (1979).

² On November 17, 1976, Intervenors moved for reconsideration of their motion to add new contentions. At the environmental hearing the Board denied the motion in part (Tr. 1609-11). It did admit the following contention to be considered at the safety hearing: whether the final environmental statement adequately assesses all adverse environmental impacts that could occur from possible earthquake-caused accidents, including, but not limited to, Class 9 accidents, given the high potential seismicity of the Diablo Canyon site and the current design and construction of the Diablo Canyon nuclear plant. (See later stipulation.)

Initial Decision. That document recites the background of this proceeding including identification and the history of the parties. In this hearing, the Board considered the somatic and genetic effects of radiation.³

Due to the delay in being able to reach the seismic issues, the Board determined that it would proceed on the non-seismic health and safety issues with the exception of the security issue. An evidentiary hearing was held on October 18-19, 1977, on the following non-seismic issues: Emergency Planning, Quality Assurance, Probability of Aircraft Accidents at the Facility, and Revised Table S-3 values.⁴ The Board informed the parties that it might delay issuing a separate Partial Initial Decision on these issues but requested the parties to submit proposed findings so it would have the option to proceed with a second Partial Initial Decision, if the hearing on the seismic issues continued to be postponed.

The parties complied with this request but the Board determined it would not release another partial decision on these few issues since it appeared the hearing on the seismic issues could soon be scheduled. Part II of this Partial Initial Decision deals with the non-seismic safety issues which can be determined.

On April 24, 1978, the Board was informed by the Staff, on behalf of all parties, that the parties had agreed on the final language of the seismic issues. They also stipulated that the Staff's and Applicant's basic documents would be admitted into evidence. In order to clarify the record, it was also stipulated during the hearing that amendments 50 *et seq.* to the FSAR (known as the Hosgri Report) would be admitted into evidence. (Tr. 6924-6926). For the purposes of reference the stipulated contentions are set out as follows:

The seismic design for the category one structures, systems, and components of the Diablo Canyon nuclear power plant (Unit 1) fails to provide the margin of safety required by 10 CFR Part 50 and 10 CFR Part 100 in that:

1. The Applicant has failed to conduct investigations of the Hosgri Fault system to determine adequately (i) the length of the fault; (ii) the relationship of the fault to regional tectonic structures; and (iii) the nature, amount, and geologic history of displacements along the fault, including particularly the estimated amount

³ *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-78-19, 7 NRC 989 (1978). However, the Board deferred consideration of part of Intervenor's contention on the environmental effects of radiation releases due to seismic accidents until the safety hearing. The record was also specifically held open for receipt of the new S-3 generic table on the environmental effect of the fuel cycle when the Commission's interim rule is in place (Tr. 1581, 1603-12).

⁴ Table S-3 was further revised and the current version was admitted into evidence at the close of the seismic hearings as Staff Ex. 17 but, the issue is again deferred due to ALAB-562.

- of the maximum Quaternary displacement related to any one earthquake along the fault.
2. A 7.5 magnitude earthquake is not an appropriate value for the safe shutdown earthquake.
 3. A .75g acceleration assigned to the safe shutdown earthquake is not an appropriate value for the maximum vibratory acceleration that could occur at the site.
 4. The maximum vibratory acceleration of .2g for the operating basis earthquake is not 1/2 of the maximum vibratory acceleration that could occur at the site.
 5. The Applicant has failed to demonstrate, through the use of either appropriate dynamic analysis or qualification tests (or equivalent static load method where appropriate), that Category I structures, systems, and components will perform as required during the seismic load of the safe shutdown earthquake, including aftershocks and applicable concurrent functional and accident-induced loads, and that Category I structures, systems, and components will be adequate to assure:
 - a) the integrity of the reactor coolant pressure boundary,
 - b) the capability to shut down the reactor and maintain it in a safe condition, or
 - c) the capability to prevent or mitigate the consequences of accidents which could result in excessive offsite exposure.
 6. The Applicant has failed to demonstrate, through the use of either appropriate dynamic analysis or qualification tests (or equivalent static load method where appropriate), that all structures, systems, and components of the nuclear power plant necessary for continued operation without undue risk to the health and safety of the public will remain functional and within applicable stress and deformation limits when subjected to the effects of the vibratory motion of the operating basis earthquake in combination with normal operating loads.

7. The Applicant has failed to demonstrate adequately that necessary safety functions are maintained during the safe shutdown earthquake, where, in safety-related structures, systems and components, the design for strain limits is in excess of the yield strain.

When it became apparent after several years delay that the seismic issues could soon go to a hearing, the Board scheduled a conference of counsel for July 27, 1978. The Board ruled on various pending discovery matters and established a schedule for discovery. These rulings were confirmed by the Board's orders of August 3 and 7, 1978. In the conference, the Board advised the Joint Intervenors they would have two weeks if they wished to submit a contention on radon as part of the uranium fuel cycle (Tr. 3682). By letter of August 7, 1978, the Joint Intervenors stated they would not submit a contention on radon.

At the conference, all parties asked the Board to set aside only the first two days of the hearing for limited appearance statements since we had already heard approximately 200 limited appearance statements at prior proceedings. Their concern was based on the scheduling of their witnesses. The Board determined that this was a reasonable request and adopted it in its Order of August 7, 1978 and later confirmed it in the Order of November 7, 1978. Approximately 146 limited appearance statements were heard in the two days.

Following the first prehearing conference the Board's Order of May 30, 1974, admitted many contentions of the various Intervenors. Discovery commenced and was vigorously pursued by all parties. During the earlier years, the Intervenors were proceeding without counsel and limited technical assistance. Later when counsel and more experienced technical advisors were obtained, motions were filed for numerous new contentions. (See Joint Intervenors' proposed findings pp. 6-8). The Board considered each contention and when it determined there was no justification for the extremely late filing, denied the motion but later put the parties on notice that the Board would expect critical matters to be addressed e.g., quality assurance, generic safety issues.

The Joint Intervenors' proposed findings pp. 17-22 describe at length the matter of subpoenas issuing to two Advisory Committee on Reactor Safeguards (ACRS) consultants. That matter was settled by the Appeal Board decision of January 23, 1979, the subpoenas were issued and Drs. Trifunac and Luco testified on February 7-9, 1979.⁵

Following the completion of the review of the Staff and the ACRS, evidentiary hearings were held on the seismic issues on December 4-23, 1978, January 3-16, 1979, and February 7-15, 1979. Part III of this Partial Initial

⁵ *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-519, 9 NRC 42 (1979).

Decision pertains to the seismic issue. Part IV pertains to the security plan issue.

The record was closed at the end of the seismic hearing except for the generic safety issues and Table S-3 issues (Tr. 10,176 and 10,180).

Any proposed findings of fact or conclusions of law submitted by the parties, which are not incorporated directly or inferentially in this Partial Initial Decision, are herewith rejected as being unsupported in law or in fact, or as being unnecessary to the rendering of the Partial Initial Decision.

II. FINDINGS OF FACT ON AIRCRAFT AND MISSILE ACCIDENTS

In the non-seismic issues hearing on October 18 and 19, 1977, four issues were heard: the Emergency Plan, Quality Assurance, Table S-3 and the probability and possible effect on Class I structures from aircraft and missile accidents. It is not now known how the Lessons Learned from Three Mile Island-2 will impact on the Emergency Plan or Quality Assurance so these matters will be deferred and are not a part of this Partial Initial Decision. The testimony on Table S-3 was updated as a separate matter at the conclusion of the seismic hearing but is now deferred due to ALAB-562. The only testimony from this segment of the proceeding holding firm is that concerning aircraft and missile accidents.

At the hearing the following exhibits were admitted into evidence:

FSAR, as amended	Applicant's Exhibit 5 (Tr. 3456)
Emergency Plan, including Appendices, Revision 1, September 1977	Applicant's Exhibit 6 (Tr. 3463)
Staff Safety Evaluation Report and Supplements	Staff's Exhibit 9 (Tr. 3460)

In addition, by stipulation, all of the prepared testimony of the witnesses was admitted into evidence to be inserted into the transcripts as if read (Tr. 3457-3458).

Aircraft Accidents

The Board requested the parties to address the question of the probability of aircraft and missile hazards at Diablo Canyon (Tr. 1307). The Applicant and the Staff each offered a witness on this issue.

Location

The Diablo Canyon Nuclear Power Station is located 12 miles from the nearest commercial airport (San Luis Obispo County) and approximately 5

miles from the closest approach of the nearest low level airway (V-27). Airway V-113 terminates at the San Luis Obispo VORTAC (an FAA radio navigational facility) 6.5 miles northeast of the plant site. The nearest high altitude airway is J-88, which passes 22 miles to the east. Operations in control area 1155 follow azimuth 226° to and from the San Luis Obispo VORTAC.

The nearest military low level training route is 21 miles to the north. The Hunter Military Operations Area (MOA) is 20 miles to the north. Operations to and from the ground occur in the restricted area 45 miles from the plant. The O'Sullivan Airfield, operated by the California National Guard, is located 10 miles northwest of the plant. Vandenberg Air Force Base (VAFB) and the Space and Missile Test Center (SAMTEC) are located 30 to 40 miles southeast of the plant.

Airport Operations

The San Luis Obispo County Airport is used only for general aviation operations, including air taxi service. The FAA estimate of 1976 operations is a total of 136,000 including 22,000 air taxi. These estimates are considerably larger than county estimates. The air taxi service employs primarily the NORD-262, a small twin-engine airliner, and the Heron, a comparably sized 4-engine plane. Of the remaining operations, approximately 90% involve single-engine aircraft and 10% light twin-engine aircraft. Approximately 40% of total operations are touch and go operations where the aircraft remain within the immediate vicinity of the airport. Discussions with airport personnel indicate that operations toward the plant site are severely limited by terrain considerations and lack of a need to pass through the area to travel to suitable flying areas.

The O'Sullivan field is operated by the California Air National Guard for training. It has a single 2400' paved runway. The largest fixed-wing aircraft is the twin-engine U-8 (Beechcraft Queen Air). The largest helicopter is the Boeing Vertol OH-47. The total number of operations is estimated, at present, to be less than 200 per year. Because of the low number of operations at O'Sullivan, it does not contribute significantly to potential hazards at the plant.

The next nearest airfield is the private Weir strip, which is 15 miles from the plant. It has a single 2,000-foot dirt strip and operations from it are no hazard to the plant.

The Oceano County Airport is located 16 miles from the plant. Operations are estimated to total 12,500 per year, all involving general aviation single-engine or light twin-engine aircraft. Considering the low usage and light aircraft operated, operations from Oceano County Airport do not contribute significantly to potential hazard at the nuclear plant.

All other airports in the area are sufficiently distant that they do not contribute significantly to potential plant hazards.

Airway Operations

The low level airways (V-27 and V-113) are for aircraft operations below 18,000 feet. Aircraft operating along these airways will include local air carrier and air taxi operations and general aviation aircraft flying under instrument flight rules. The FAA's Los Angeles Air Route Traffic Control Center (ARTCC) has indicated that the 1977 peak day IFR operations along the airways near the plant were 44. In addition, 31 take-offs or landings at San Luis Obispo were handled, along with 8 direct flights from VAFB. Information from VAFB indicates that an additional 30 military aircraft flew from VAFB to the San Luis Obispo VORTAC. A conservative estimate of peak day operations along airways adjacent to the plant is the sum of these or 113 per day. For the Los Angeles region, the annual average daily traffic is 73% of the peak day traffic.

High altitude airways are for aircraft operation at 18,000 feet and above, and are used primarily by air carriers. As indicated previously, J-88 is located 22 miles away from the plant. At this distance, it poses no credible hazard to the plant. The 1976 peak day charts show 21 direct flights (not along the airway) going directly over the San Luis Obispo VORTAC.

Control area 1155 is an alternate route for air carrier flights to and from the Pacific. This route is used periodically when missile operations from VAFB interfere with the normal routes to Los Angeles further south. LA ARTCC personnel estimate the number of flights to use this area is on the order of 200 per year. When passing over the San Luis Obispo VORTAC, the aircraft are at altitude of 28,000 feet or more.

Missile Launch Activities

The Air Force Space and Missile Test Center operations include test and training launches of weapons systems and military and non-military satellite launches. Space shuttle launches may also originate from SAMTEC. Most launches from SAMTEC are in the southwest quadrant. Polar orbit is achieved by a southerly launch. Very few launches are north of 270°. The Diablo Canyon site is located at an azimuth of approximately 327° from the northern most launch area.

In order to minimize the risk to facilities and populations, the flight of a vehicle is terminated (aborted) if it should deviate from its planned flight path and an inhabited area be threatened. In establishing the location where missile destruct would be required (the abort line) time delays in instruments and controller responses, possible missile performance deviations and 90 percentile wind conditions are considered.

SAMTEC personnel estimate that the probability of any debris impacting the Diablo Canyon site would be less than 10^{-9} for launches at the extreme northern limit of allowable launch azimuths. As indicated previously, very few flights would be expected in this direction.

Applicant's witness, E. Robert Schmidt testified initially that the combined hazards posed by aviation resulted in a probability of aircraft impact upon the plant of 0.8×10^{-7} impacts per year, using appropriately conservative estimates (Tr. 3629; Schmidt Testimony following Tr. 3458, at 8), with the overall probability of exceeding 10 CFR 100 radiation release guidelines due to aircraft accident ranging from 10^{-9} to 10^{-10} per year. (Id. at 9). On cross-examination, however, the witness testified that elimination of the conservative aspects of his estimates would give rise to a "true potential crash rate, best estimate—if you will—of a crash rate into the plant would be 10^{-10} in that neighborhood" (Tr. 3643). Staff's witness, Harry E. P. Krug, Accident Analysis Branch, NRC, concluded that the lifetime average (conservative strike probability) would approximate 1.8×10^{-10} impacts per year—well below the values set forth in the Staff's Standard Review Plan and 10 CFR Part 100. (Krug Testimony, following Tr. 3649 at 8-10).

In light of the requirement set forth in *Atlantic City Electric Company* (Hope Creek Generating Station, Units 1 and 2), ALAB-429, 6 NRC 229 (1977) for licensing boards to justify choices between conflicting pieces of testimony, the following points are noted: The Staff's Safety Evaluation Report considered the proximity of nearby industrial and military facilities, including the nearest airport and Vandenberg Air Force Base and concluded that due to the lack of such industrial and military facilities in the area of the plant, safe operation would not be adversely affected. Both witnesses testifying on this contention were familiar with nuclear power plant licensing requirements and considered the risk from aircraft crashes to be acceptably low. The differences in their numerical results can be ascribed to differing assumptions made in their calculations. Mr. Schmidt has no practical experience in the field of aviation, compiled his estimates from published statistics alone, was not familiar with FAA categorization or pilot skill levels of Swift Aire Lines, the major commercial user of San Luis Obispo County Airport, and had not viewed the facility and its site from the air, all matters which could be assigned *some* valuation in reaching a "best estimate." Conversely, Mr. Krug testified that in addition to having an appropriate background in science and mathematics, he is a commercial pilot, instrument rated, single-engine land and sea, multi-engine rated, was familiar with Swift Aire's flight routes, pilot qualifications, and aircraft types, and that he had overflown the plant (Tr. 3651-57). He also demonstrated considerable knowledge of the Federal Aviation Regulations and their requirements with regard to overflights of major structures (Tr. 3653-55).

The Board finds that a reasonable probability of an aircraft accident impacting upon the plant is approximately 1.8×10^{-10} impacts per year, well below the requirements of 10 CFR Part 100 in regard to accidental radiation releases.

Based on the detailed survey of aircraft and missile operations in the vicinity of the Diablo Canyon plant and on the evaluation of potential hazards

of these operations, the Board finds that aircraft and missile operations do not present an undue risk to the public health and safety at the Diablo Canyon Nuclear Power Station.

III. FINDINGS OF FACT ON SEISMIC ISSUES

In general terms the issues raised by the contentions all relate back to the ability of the Diablo Canyon Nuclear Power Plant to withstand any earthquake that can reasonably be expected to occur on the Hosgri fault, which is located approximately three miles from the site.

Thus the primary issues can be classified for simplicity as follows:

- (1) What is the maximum credible earthquake that can reasonably be expected to occur on the Hosgri fault at its nearest point to the plant?
- (2) What vibratory ground motion will that produce at the plant?
- (3) What criteria for evaluation of the plant for the postulated Hosgri event are proper?
- (4) How will the plant structures, components, and equipment respond to that vibratory ground motion?

EXHIBIT NUMBER	BOARD EXHIBITS	IN EVIDENCE
1	Willingham illustration of CDP System	4622
2A-1	Trifunac/Luco documents identified on Tr. 4286-8 and 4355	9012
2J	Anderson-Trifunac Report "Uniform Risk Absolute Acceleration Spectra for the Diablo Canyon Site"	9012
3*	Weber and Lajoie Figure re Slip on San Gregorio Fault	
3	"Earthquakes, A Primer" by Bruce Bolt	
4	Article "Rational Determination of the Operational Basis Earthquake and its impact on Overall Safety and Cost of Nuclear Facilities" by J. D. Stevenson, Sept. 1975	

* Renumbered JI Exhibit 32.

PGandE EXHIBITS

7	PGandE Witness' Technical Qualification	4388
8	Slide: Gualala Basin to Eagle Rest Peak	4417
9-29	Photograph of San Francisco Buildings	6084
30	Geological Society of America Abstract (Silver)	6301
31	Interpretation of Preliminary Gravity Map	6301
32	Blowup of Box-end on Ex. 31	6301
33	Open File Report 75-121 (USGS-1975)	6301
34	USGS Bathymetric Profile	6301
35	Frazier - Q Attenuation	6855
A	Operating License Application and All Amendments and Supporting Material	6926
36	Brune Drawing	8114
37	California Division of Mines and Geology Map (same as J.I. 35)	8144
38	Report by T. W. Pickel to ACRS 5/31/78	
39	Report by G. A. Thompson to ACRS 11/21/77	
40	Page Memo to Siess	
41	Thompson Letter to McKinley 7/22/77	
42	Hall diagram of faults	9698
43	J.I. 107 modified	9698
44	J.I. 107 with hatch marks	9698
45	Fugro Report	9698
46-60	Slides - Geology Panel Rebuttal	10,100
61	Peak acceleration as a function of M (slide)	10,161
62	Near Field Strong Motion Records Not Included in Hanks and Johnson data (slide)	10,161
63	Peak Horizontal Accelerations Recorded in Naghan, Pacoima, Koyna and Gazli Earthquakes (slide)	10,161
64	Seed drawing of waves (slide)	10,161
65	Seed drawings showing earth heterogeneities	10,172

INTERVENOR EXHIBITS

14	Jans sketch - <i>en echelon</i> - anastomosing faulting	4621
15	Jahns sketch - strike-slip and normal faulting	4621
16	Location of Transition Zone with ten mile boundaries approximated	
17	Map from Fugro Report - Plate 1	4813
18	Hoskins-Griffiths Map of Santa Cruz and Bodega Basins (slide)	5000
19	Stratigraphic Columns - Pt. Reyes and Santa Cruz Regions (slide)	5011
20	Bathymetric Map - Monterey Submarine Canyon (slide)	5026
21	Map - Basement Contours in Monterey Bay Region (slide)	5026
22	Regional Geology Along San Gregorio Fault Area (slide)	5046
23	Graham-Dickenson Map of Faults at South End of San Gregorio Fault Zone (slide)	5046
24	Complete Bouguer Anomaly Map (slide)	5046
25	Map of Coast from Pfeiffer Point and Saboranes Pt. (slide)	5046
26	View Northwest from Hurricane Point (slide)	5046
27	View of Santa Margarita Formation at Hurricane Point (slide)	5046
28	View Down from Hurricane Pt. to Seacliff (slide)	5046
29	Detailed View of Marble and Schist Fragments (slide)	5046
30	View of Sheared Sur Series Schist (slide)	5046
31	Abstract, 1977 Presentation by Weber and Lajoie	
32	Weber and Lajoie Figure re Slip on San Gregorio (formerly Board Ex. 3)	
33	Graham and Dickenson <i>Science</i> Article	5236
34	Map of Magnetic Intensity - Pigeon Point and Pt. Arena (slide)	5236

35.	Map from CDMG Report by Hall - Location of San Simeon-Hosgri Fault Zone (slide)	5236
36	Hall Article from Science Magazine re San Simeon-Hosgri Fault System	9595
37	Hall Article CDM Bulletin re Lompoc-Santa Maria Pull-apart	9595
38	Complaint in U.S. District Court - D.C. Cir.	
39	Smith Diagram - Illustrations of Seismograms (slide)	5613
40	Smith equation (slide)	5613
41	Bolt - Focal Mechanism of Earthquakes (slide)	5613
42	Bolt - Sample Fault Plane Solutions (slide)	5635
43	Bolt - Sample Epicentral Locations (slide)	5635
44	Pages from FSAR 2.5(e)	
45	USGS Bulletin 672	8680
46	USGS Open File Report 509 re Ground Motion Parameters	
47	Hanks and Johnson Paper "Geophysical Assessment of Peak Accelerations"	5944
48	Graham Testimony	6148
49	Silver Testimony	6148
50	Map from Bolt's Book	6153
51	USGS Map MF-910, sheet 1	6227
52	USGS Map MF-910, sheet 2	6227
53	Example of Determination of Acceleration Response Spectrum	6693
54	Determination of Normalized Acceleration Response Spectrum	6693
55	Frazier - Response Spectrum Equation	6693
56	Malik Letter to Hoch 7/20/78 w/att.	6836
57	Gangloff Letter to Kelley 5/30/78 w/att.	6836
58	"Analysis of Soil Structure Interaction Effects During Earthquake of Diablo Canyon Nuclear Power Plant" by Seed and Lysmer	
59	Malik Letter to Hoch 5/16/78	6836

60	Blume draft "Effect of Prior Loading of Reinforced Concrete on its Damping Value"	
61	Drill Hole Log	
62	Slide: Containment Shell Diagonal Reinforcing Stress	7052
63	Tabel: Containment Shell Diagonal Reinforcing Stresses	7052
64	Memo: Document PD 608	
65	Hubbard Testimony and Qualifications	7895
66	Brune Testimony and Qualifications	7940
67	Note: DeYoung to Giambusso 2/20/75	
68	Memo: Program to Establish Basis to License Diablo Canyon 1/12/76	
69	Note: DeYoung to Giambusso 2/11/75	
70	Memo: Fraley to Rusche 12/20/76	
G & H	Previously Board Exhibits 2G and 2H	8403
71	Draft Report "Response Spectra of Combined Translation and Torsion For a Traveling Seismic Wave" by Newmark, et al.	
72	Clarence Hall Bibliography	9470
73-106	Set of Slides by Clarence Hall	9700
107	Generalized Fault Map, West Central California	9596
108	Map from California Division of Mines and Geology Special Report 137, Fig. 1	9596
109	Abstract of Fugro Report from Transactions, American Geophysical Union	9698
110	USGS Open File Report 79-385 "San Gregorio-Hosgri Fault Zone, A Reduced Estimate of Maximum Displacement" by V. Seiders, January 1979	

STAFF EXHIBITS*

10 Equation Nine, NB-3652

* Exhibits 11-17 were accepted by the Board's Orders of February 26 and March 12, 1979. These exhibits pertain to matters outside this Partial Initial Decision.

- 11 NUREG-0371, Task Action Plans for Generic Activities
- 12 NUREG-0471, Generic Task Problem Descriptions, Categories B, C, and D Tasks
- 13 Technical Qualifications - Michael B. Aycock
- 14 Technical Qualifications - Lawrence P. Crocker
- 15 Affidavit of Aycock, Crocker, and Allison re Generic Safety Issues
- 16 Affidavit of Allison and Thadani Relating to ATWS
- 17 NRC Staff Motion Re Radon Testimony and Perkins Record

A. Geologic Setting of the Site

CONTENTION 1

The Applicant has failed to conduct investigations of the Hosgri Fault system to determine adequately (i) the length of the fault; (ii) the relationship of the fault to regional tectonic structures, and (iii) the nature, amount, and geologic history of displacements along the fault, including particularly the estimated amount of the maximum quaternary displacement related to any one earthquake along the fault.

The significance of this contention lies in the fact that the length, nature, and seismic, and geologic history of a fault are the basic parameters used by geoscientists in arriving at the maximum credible earthquake that the fault might be capable of. A great deal of evidence on this point was presented by all parties during the extended hearing. The Board notes, however, that in the separate findings submitted by the parties that they all agree that a 7.5M value is conservative, and that there is thus no issue here for either Contention 1 or Contention 2. The Board will delineate, however, what we believe to be the pertinent evidence with the objectives of both showing why the Board agrees with the parties, and to provide a better understanding of the case when considering later contentions.

Geologic Setting of the Site

PG&E witnesses Douglas Hamilton, Dr. Richard H. Jahns, and C. Richard Willingham presented detailed testimony concerning the geologic and seismologic setting of the Diablo Canyon Power Plant (Applicant's Testimony following Tr. 4457). In their testimony they pointed out that the Diablo Canyon site is located along the southwest-facing coast of the

mountainous peninsula that lies between San Luis Obispo Bay and Estero Bay, within the Southern Coast Ranges structural province of California. The terrace at the site is underlain by sedimentary rocks, chiefly sandstone and siltstone, approximately 16 million years old. Prior to project construction, these rocks were overlain by an unfaulted sequence of sand, clayey sand, gravel, and rubble, all of the Pleistocene age and probably between 80 and 120 thousand years old (Testimony at 1).

During the approximately 200 years of historic record, the interior of the Southern Coast Ranges province has exhibited a moderate level of seismic activity, with scattered earthquakes ranging up to a maximum of magnitude 6. In geologic terms the period of historical record is brief, but evidence that surface displacements along major faults in the province have been minor or non-existent indicates that this pattern of small to moderate earthquakes has characterized most of the province during the past 100,000 years or more (Testimony at 2, 3).

With respect to seismic considerations, the principal structural feature in California is the San Andreas Fault, which extends about 800 miles from Cape Mendocino to the Gulf of California. It is the boundary between two major tectonic plates of the earth's crust, and the North American Plate and the Pacific Plate and the cumulative slip along this break over the past twenty-two million years amounts to about 190 miles (Testimony at 3, 5). The great bulk of interplate movement between these plates has occurred along the San Andreas Fault (Tr. 4876). Movement along this fault over the past twenty-two million years has been predominately strike-slip or horizontal (Testimony at 6).

Tectonic activity in the area is predominantly concentrated along the San Andreas Fault. In the main southern part of the Coast Ranges province, no other faults show evidence of more than minor seismic activity during Holocene time (the last 10,000 years). The same is generally true of the adjacent offshore region where both the sea floor and the unconformity at the base of the Post-Wisconsinan sea floor deposits provide useful datum surfaces for gauging Holocene deformation down to about 350 feet of depth (Testimony at 18).

The Southern Coast Ranges tectonic province is characterized by faults with northwesterly trends and typically right-lateral or high-angle senses of movement. The larger faults, which may be regarded as second-order features relative to the San Andreas, are 50 to 100 miles long. Most of the larger faults have records of historic seismicity with a range from small shocks up to earthquakes of about 6.0 magnitude, but expressions of Holocene surface displacements are characteristically lacking.

The geologic relationships at the Diablo Canyon site have been studied extensively in terms of both local and regional stratigraphy and structure, with an emphasis on relationships that could aid in dating the youngest tectonic activity in the area. Geologic conditions that could affect the design,

construction, and performance of various components of the plant installation also were identified and evaluated. The investigation included extensive mapping and trenching of the site (Testimony at 90-95).

The Hosgri Fault

Evaluation of the site prior to the issuance of construction permits in 1968 and 1970 established that it is in an area of relatively low seismicity. The controlling faults were considered to be the San Andreas, 48 miles northeast, the Nacimiento, 20 miles northeast, and the Santa Ynez, 50 miles to the south. For design purposes, maximum probable earthquakes were postulated to occur on these faults, and, in addition, the possible occurrence of a 6.75M earthquake anywhere in the area including directly under the site, was postulated. Because of the absence of seismic activity that would indicate a nearby significant fault, plus the assumption of a large earthquake which might occur anywhere in the area, offshore exploration did not seem to be necessary (Tr. 6461).

Subsequent to the issuance of the construction permits, studies of the offshore area were published: Hoskins and Griffiths in 1971 and Wagner in 1974. The Hoskins' and Griffiths' paper gives the results of an interpretation of extensive deep penetration seismic reflection surveys along the California coast. The surveys revealed a structural basin offshore of the Southern Coast Ranges which is called the Santa Maria Basin. It is described as being a shallow synclinorium about 140 miles long and 25 to 30 miles wide. Structural grain within the basin on both the east and west. The eastern border fault, now known as the Hosgri Fault after Hoskins and Griffiths, passes within about five miles of the Diablo Canyon site. (Testimony of Dr. J. Carl Stepp [Stepp Testimony], following Tr. 8484, at 2, 3).

Wagner utilized both deep penetration seismic reflection methods and high resolution seismic surveys. The configuration of the sea floor was obtained by using precision bathymetric measurements and, locally, by side-scan sonar. These techniques provided a considerable refinement of the structures along the eastern boundary of the Santa Maria Basin in the region between Cape San Martin and Point Sal. He indicates that the basin formed in Middle-to-Post-Miocene (post 26 M. Yrs.) time. It contains from 2,000 to 5,000 feet of Miocene sediments, unconformable, overlain by up to 3,500 feet of Pliocene (7 M.Y.) section. An erosion surface is indicated to have formed on these Tertiary beds during Pleistocene time. Post-Wisconsinan age sediments, deposited during the past 20,000 years, overlie much of the Tertiary erosion surface. Wagner concurred with the interpretation of Hoskins and Griffiths that a major fault zone forms the eastern boundary of the Santa Maria Basin. This fault, the Hosgri, is a zone containing from 2 to 5 subparallel fault splays which locally offset Tertiary and Pre-Tertiary rocks with apparent vertical displacements ranging between 1,500 feet and 6,000

feet. The fault is discontinuous and segmented in the late Tertiary and Quaternary section (Stepp Testimony 3, 4).

Subsequent to the discovery of the Hosgri Fault, the Applicant conducted extensive high resolution investigations of the structure, as did the USGS somewhat later (Stepp Testimony at 8, 9). The methods utilized include several types of seismic or acoustic reflection profiling systems, as well as mapping of earth's gravitational and magnetic fields in the region traversed by the fault. (Applicant's Testimony at 111). All in all, approximately 9,000 miles of lines of profiles in the offshore area of the Hosgri Fault Zone were reviewed in Applicant's analysis of the Hosgri Fault (Tr. 5411).

Applicant presented a detailed description of its evaluation of the Hosgri Fault. (Applicant's Testimony, 106-131). Briefly, their analysis shows that the Hosgri Fault zone is present in the area offshore from the coast of south-central California, where it extends for a distance of about 90 miles (145 kilometers) between end points near Purisma Point on the south and near Cape San Martin on the north. (Applicant's Testimony at 106; Tr. 4418, 4859). It is a part of the San Gregorio-San Simeon-Hosgri fault system (Tr. 4645). The fault zone is part of the Coastal Boundary zone, which is a boundary feature between the uplift of the Southern Coast ranges and the structural depression of the adjacent offshore Santa Maria and Sur Basins. (Applicant's Testimony at 107). The Hosgri Fault underlies the sea floor at water depths ranging from 150 to 500 feet. The generally featureless character of the sea floor along the Hosgri Fault trace precludes the possibility of either large-scale or recurrent surface offsets along it during the last 10,000 to 17,000 years. (Applicant's Testimony at 108; Tr. 5333, 5335). The principal sense of movement along this fault is strike-slip, although it has a dip-slip component; and both probably are significant (Tr. 5315). It is not the kind of fault upon which one would expect a great earthquake, because it is too small and what can be observed of it does not indicate a past occurrence of major cumulative slip, at least during the last five million years (Tr. 5315). Perhaps most important, its current role in the regional tectonic situation is such that it is not a major feature. The differential drift between the two principal plates involved in the area (Pacific and North American) is about six centimeters a year, most of which can be accounted for by movement along the San Andreas and Rinconada Faults, leaving very little for other faults (Tr. 5315, 5316).

The Hosgri Fault has dimensions that equal those of some second-order faults; however, no record of its behavior during early and middle Pleistocene time (10,000 to 2-1/2 M.Y. before present) remains owing to successive episodes of marine planation of the rocks within which it is developed. Consequently, it has not been possible to determine whether it should be regarded as a small second-order or a large third-order fault. (Applicant's Testimony at 20, 21; Tr. 4422, 4423, 4646). However, there is enough evidence of late-Pleistocene (the last 500,000 years) movement to conclude it is prudent to consider the Hosgri to be a capable fault, within the meaning of 10 CFR

100, Appendix A of the Nuclear Regulatory Commission's Regulations. With the preceding as background, we now turn to consideration of the subparts of Contention 1. Subparts (i) and (ii) will be considered together, as we believe there is a functional relationship between them.

C. ... (i) the length of the fault; (ii) the relationship of the fault to regional tectonic structures.

The issue at bar here is basically that of fault length, as this is an important parameter in determining how high the magnitude of an earthquake on the fault can be. Applicant's analysis of the available data shows that the main or central reach of the Hosgri Fault extends over a distance of about 60 miles, between the approximate latitudes of Point Sal on the south and Cambria on the north. Beyond this reach the fault extends about ten miles further south and about 20 miles further north to give a total length of about 90 miles. (Applicant's Testimony at 115-120). As noted, *supra*, the Hosgri Fault is a part of the Hosgri-San Simeon-San Gregorio Fault Zone, and the question is whether these three faults are connected, thus forming a single fault capable of sustaining a much more energetic earthquake than the Hosgri Fault alone.

On the north, the Hosgri Fault zone can be traced for about 30 miles north of Estero Bay where it lies *en echelon* with the San Simeon Fault. (Stepp Testimony, at 16-19, Tr. 4871-4873). The Hosgri Fault and the San Simeon Fault are not connected. Seismic reflection lines that cross the Hosgri Fault between Point Estero and Point San Simeon do not show any major branches of the Hosgri extending toward the projected southerly extension of the San Simeon Fault. These reflection lines show that the contact between late Tertiary (2.5 M.Y. to 16 M.Y. ago) rocks and basement rocks that approximately parallels the shore line between Point Estero and Point San Simeon is not displaced as it should be if offset by major vertical or lateral faulting. A shale that lies along the southwest side of the San Simeon Fault at San Simeon Point can be traced to the southeast indicating the San Simeon Fault does not veer toward the Hosgri in that reach.

The Hosgri Fault dies out north of Point Piedras Blancas. It does not veer toward the San Simeon Fault but instead gradually dies out along a trend that is subparallel to that of the San Simeon Fault.

Additional evidence precluding the possibility of a link between the Hosgri Fault and the San Simeon is provided by the aeromagnetic map of the Point Estero-San Simeon region. This map indicates that a block of basement rocks extends unbroken between the Hosgri and the San Simeon Faults in the area that would contain any linking break that could permit through-going transfer of slip from one fault to the other. The magnetic anomaly pattern indicates that no such break exists, and therefore, we conclude that the Hosgri and San Simeon Faults are distinct, unconnected breaks. (Applicant's Testimony at 120-123; Tr. 4422, 4923-4926). Both Staff and Applicant testified that the Hosgri and San Gregorio are not linked to form one fault.

The San Simeon and Hosgri Faults form the eastern boundary of the Santa Maria Basin. Hoskins and Griffiths (1971) map the northern boundary of the Santa Maria Basin as being the west-northwest trending Point Sur antiform and the Pfeiffer Fault. The San Simeon Fault either veers to the west-northwest or continues as the Point Sur Fault. The Point Sur Fault is mapped as a thrust fault while the San Simeon displays predominantly normal movement. (Stepp Testimony, pp. 19-20).

The U.S. Geological Survey concluded that offshore faults north of Point Piedro Blancas (an area of possible linkage between the San Simeon and San Gregorio Faults) do not form a single continuous fault. The USGS states that the San Simeon Fault is projected northwest immediately offshore and is truncated by the Sur Nacimiento Fault Zone. (SER Supp. 4, App. C). The Hosgri Fault terminates in folding in this region or trends more westerly. (*Ibid.*)

The Hosgri and San Simeon Fault zones belong to the same coastal zone of deformation. The style of tectonism within the coastal deformation zone is one of anastomosing and *en echelon* faults, which is typical of other fault systems within the Coast Range that are subsidiary to the San Andreas. The Hosgri Fault and the San Simeon Fault approach as close to each other as 2-1/2 miles north of Estero Bay. However, substantial geologic data leads us to conclude that they are not directly linked. (Stepp Testimony at 17-19). Thus from the preponderance of available geologic evidence, we conclude that the relationship between the Hosgri, San Simeon, and San Gregorio Fault zone is one of an *en echelon* or anastomosing series of faults, which is typical of fault systems in the Coast Ranges, and not a continuous plate margin master break like the San Andreas. (*Ibid.*, at 19-20, 22).

On the Hosgri Fault to the south from about the latitude of Point Sal southward, the Hosgri Fault progressively loses definition as a separate major break and dies out within a zone of complex folding and faulting that generally characterizes this region. This interpretation is supported by the original Shell Oil Company map of the fault published by Hoskins and Griffiths and the most recent USGS map. (Applicant's Testimony at 123-125; PG&E Ex. 45, p. 14; Tr. 4874, 4875).

The Hosgri Fault forms the southerly part of the Coastal Boundary zone of features and faults that lie between the uplift of the Southern Coast Ranges and the structural depression of the offshore basins. It either terminates or passes into the Transverse Range structure. This interpretation is consistent with mapped Coast Ranges structures in the region where they intersect Transverse Range structures. (Stepp Testimony at 16, 12-16, 21).

Because of its location at the south end of the Coast Ranges, the southernmost end of the Hosgri Fault extends into the region of transition ("Transition Zone") from the Southern Coast Ranges region into the Transverse Ranges structures. The Transverse Ranges, including the region of transition is one of active compression and is the area in the vicinity of which

large earthquakes are more likely to occur than in the Coast Ranges region (Tr. 4660, 4661, 4666, 4736). In other words, the Hosgri Fault Zone is to be contrasted, in terms of tectonic setting and earthquake capabilities, with the Transverse Ranges and the Applicant's Transition Zone (Tr. 4419).

The overall structural relationships of the Hosgri can be generalized into three regions, each characterized by a particular set of relationships. These include, first, the northerly region where strain is transferred across the Piedras Blancas antiform between the Hosgri Fault and the next major member of the Coastal Boundary zone to the north, the San Simeon Fault. The second region is the central region where west-northwesterly trending folds and faults in the uplifted ground east of the Hosgri are detached across it from north-northwesterly folds in the downdropped basin on its west side. Last is the southerly region when the Hosgri enters and dies within the region of merging between the Southern Coast Ranges and the Western Transverse Ranges. (Applicant's Testimony at 125-128).

The entire length of the Hosgri Fault zone has been surveyed by intermediate and high-resolution systems. The results of this exploration show that both the sea-floor and the wave-cut rock surface beneath the post-Wisconsinan (17,000 years ago and younger) surficial deposits are unbroken along most survey lines south of San Luis Obispo Bay. A recent survey commissioned by and conducted for the USGS by Fugro, Inc. (PG&E Exhibit 45) shows offset of the base of the post-Wisconsinan deposits along a short reach of the Hosgri Fault south of Pt. Sal. That survey concludes, however, that the Hosgri Fault probably terminates about the latitude of Purisima Point. (Applicant's Testimony at 128-131; Tr. 4688, 4689-4693, 4809-4810, 4816-4818, 4822-4832, 4836-4837, 4839; Tr. 8264-8265).

Geological evidence was presented by Intervenor's witnesses, Dr. Stephan A. Graham and Dr. Eli A. Silver, concerning the length of an assumed continuous San Gregorio-San Simeon-Hosgri Fault, the amount of right lateral slip which occurred on the hypothetical continuous fault, and the maximum size of the earthquake to be expected on such a feature. (Joint Intervenor's ("J.I.") Exhibits 48 (Graham) and 49 (Silver); admitted Tr. 6148).

According to Dr. Graham, in theory, between five and fifteen million years ago the Hosgri-San Gregorio Fault system was a continuous feature, a key element of the plate boundary between the Pacific and North American plates. Dr. Graham's theory, however, was based upon a limited amount of field work, (Tr. 6233) and depends upon the matching of seven pairs of geological features on the eastern and western sides of the three faults (viz, the San Gregorio, the San Simeon, and the Hosgri).

Material evidence in the record demonstrates, based on geological field work at all but one of the stated locations, that it is extremely doubtful that the seven pairs of features or offset points developed by Dr. Graham do indeed match (Tr. 5166-5197). Dr. Graham expressed no opinion as to the present

continuity of the San Gregorio-Hosgri Fault system, or the capability of the Hosgri Fault today (Tr. 6233).

With respect to Dr. Silver's argument that the Hosgri and San Gregorio Faults are connected, in addition to extensive other evidence in the record showing that the Hosgri and San Gregorio Faults are not connected (Stepp Testimony at 11, 17-20, 22) certain aeromagnetic studies of the area generally thought to be the location of any possible connection between the two faults showed that in fact the two faults are separated by an intact mass of Franciscan bedrock that is several kilometers in width (Tr. 10,017-10,020).

Joint Intervenors presented as a rebuttal witness Dr. Clarence A. Hall. Dr. Hall testified that the Hosgri and San Simeon Faults joint at depth (Tr. 9530). He postulates a continuous fault beginning at the juncture of the San Gregorio and San Andreas Faults north of San Francisco, continuing through the San Simeon, down through the Hosgri. He also postulates a landfall of the Hosgri between Purisima Point and Point Arguello, extending then to the Lompoc-Solvang Fault, to the Santa Ynez Fault, to the San Gabriel Fault near San Bernadino (Tr. 9538-9539, 9639-9641) and thence to an unknown termination (Tr. 9669). Dr. Hall located the landfall of the Hosgri Fault on the basis of the abstract of the Fugro Report (PG&E Ex. 45; Tr. 9534). However, an examination of the full report indicated a contrary conclusion; the Hosgri terminates at a point offshore of Pt. Purisima. (Tr. 9681-9686).

In review of the number and complexity of the assumptions which Dr. Hall's theory requires, as well as the mass of previously cited testimony on the non-existence of any Hosgri connection with faults either to the north or the south, it is difficult for the Board to accord significant weight to the theory.

We now turn our attention to the third part of Contention 1.

D. ... (iii) the nature, amount, and geologic history of displacements along the fault, including particularly the estimated amount of the maximum Quaternary displacement related to any one earthquake along the fault.

The main or central reach of the Hosgri Fault extends over a distance of about 60 miles, between the approximate latitudes of Point Sal on the south and Cambria on the north. Beyond this reach the fault extends about ten miles farther south and about 20 miles farther north to give a total length of about 90 miles. The evidence indicates that movement along the fault has involved right-oblique slip (i.e., slip having components of vertical and right-lateral strike-slip movement). The existence of an undisturbed sea-floor across the fault at most points near Estero Bay precludes any possible Holocene (up to 10,000 years ago) rupture along the north-central reach of the fault from exceeding a few thousand feet in length. (Applicant's Testimony at 115-120). The amount of possible lateral slip along the Hosgri Fault is limited. Both on its north end and on its south end, the Hosgri Fault is not through-going in the

sense of connecting with other faults in a way that would permit transmission of tens of kilometers of lateral offset. The stratigraphic section penetrated by an oil well, known as the Oceano Well, located west of the fault is similar to the stratigraphic section of the adjacent region east of the fault. Further, the stratigraphy is unlike the section with which it should correlate if many tens of kilometers of right slip had occurred along the Hosgri Fault. The similarity of sections between the offshore well and the adjacent onshore region appears to limit possible lateral slip to a maximum of about 20 kilometers, although it actually could have been much less. The existence of a wider, more complex pattern of faulting in the Hosgri zone directly opposite the Point San Luis structural high on the Hosgri's northern section adjacent to the plant site, but not opposite Estero Bay further north along the strike, supports the argument that lateral slip in that region has not exceeded a few kilometers, at least over the last five million years. (Applicant's Testimony at 118, 119; Tr. 4930-4936, 4946, 4947, 4952-4954, 4957-4959).

Joint Intervenors presented Dr. Stephan A. Graham, who offered geological testimony concerning the amount of right lateral slip which occurred on the fault and the maximum size of the earthquake to be expected on such a feature. The testimony was received in evidence as J.I. Exhibit 48 (Graham).

Briefly, Dr. Graham theorizes that between five and fifteen million years ago the Hosgri-San Gregorio Fault system was a continuous feature as a key element of the plate boundary between the Pacific and North American plates, along which right lateral strike-slip movement of about 115 kilometers occurred (Tr. 6196-6198, 6364). This theory, based upon limited field work (Tr. 6233), depends upon the matching of seven pairs of geological features on the eastern and western sides of the fault. These features include the following: Fort Ross-Pilarcitos; Pt. Reyes-Ben Lomond Mt. ; Pescadero-Ano Nuevo-Santa Lucia; Pigeon Pt.-Santa Lucia gravity data (Eli Silver datum); Big Sur-Miocene Sandstone; Big Sur-Cambria; and Pt. Sal-San Simeon (Clarence Hall datum). (Tr. 6172-6196). However, Mr. Hamilton challenged each of the seven sets of points developed or utilized by Dr. Graham, showing, as a result of extensive field work, that the alleged matching pairs of features do not match (Tr. 5166-5197). Furthermore, Mr. Hamilton presented convincing testimony limiting slip on the Hosgri Fault over the last 20 million years to a maximum of twenty kilometers, and probably more on the order of one-half that, and on the San Gregorio Fault to about ten kilometers (Tr. 4978, 4980). This consisted of stratigraphic and also geomorphic evidence (Tr. 4981-5046). On cross-examination, it was made clear that Dr. Graham was expressing no opinion as to the current rate of slip of any of those faults, activity or movement on those faults in the past 17,000 years or five million years, and the capability of the Hosgri Fault today (Tr. 6363, 6364).

Joint Intervenors presented as a rebuttal witness Dr. Clarence A. Hall, Jr., whose theory as to the amount of strike-slip movement on the Hosgri Fault

was then discussed by PG&E witnesses. (Hall Testimony Tr. 9466-9696; Hamilton-Jahns Testimony at 109). Hall presented his theory that there has been about 80 kilometers of strike-slip motion along the Hosgri-San Simeon Fault system over the past nine million years or so. This theory is based largely on matching pairs of rocks found at San Simeon and at Point Sal (Tr. 9482) and on dissimilarities in rocks on opposite sides of the Hosgri Fault at those locations (Tr. 9511 A). As the Board noted in *C*, *supra*, he testified that the Hosgri and San Simeon Faults join at depth (Tr. 9530) and, in fact, he postulates a continuous fault beginning with the San Andreas north of San Francisco connected to the San Gregorio, San Simeon, down through the Hosgri and an extension of the Hosgri on land to the Lompoc-Solvang Fault to the Santa Ynez then to the San Gabriel and finally to the San Andreas again near San Bernadino (Tr. 9538-9539; 9639-9641) to an unknown termination (Tr. 9669). Hall supported his supposed landfall of the Hosgri Fault by reference to an abstract of the Fugro Report.

(PG&E Ex. 45; Tr. 9534). However, an examination of the full report indicated a contrary conclusion; i.e., that the Hosgri terminates at a point offshore of Pt. Purisima (Tr. 9681-9686).

In developing his theory of the amount of strike-slip movement on the Hosgri Fault, Dr. Hall contended that all significant strike-slip movement occurred after the formation of the Santa Maria pull-apart basin (Tr. 9619). In response to cross-examination, Hall stated that the relevance of the pull-apart theory to his theory as to the amount of strike-slip movement on the Hosgri is only historical in nature (Tr. 9693, 9694). He admitted he had no opinion as to the rate of movement on the Hosgri Fault over the last 17,000 years and no opinion regarding the earthquake capability of the Hosgri Fault (Tr. 9695, 9696). In any event, it appeared that the USGS had taken Hall's theory of movement into account in recommending a maximum 7.5 magnitude earthquake on the Hosgri Fault, and whether Hall is later proved to be correct or incorrect would not, therefore, alter the USGS judgment as to the earthquake potential of the region affecting the site (SER Supp. 4, Appendix C., pp C-7, C-8; Tr. 9795). Earlier, Dr. Jahns and Messrs. Hamilton and Willingham convincingly reaffirmed the existence of the constraints they found to a large amount of movement on the San Gregorio Fault (Tr. 9958-9988; PG&E Exs. 46-50) and showed that the seven pairs of features relied upon by Dr. Graham to support his theory were, in fact, no uniquely correlative (Tr. 9989-10,003, 10,020-10,030; PG&E Exs. 51-58). Further evidence in conflict with Drs. Graham and Hall's theory was contained in the report prepared by USGS geologist Victor M. Seiders, which was introduced as Joint Intervenor's Ex. 110 (Tr. 9580). Mr. Seiders concludes that at most the evidence supports a maximum of about 35 kilometers of offset on the Hosgri Fault.

PG&E's concluding rebuttal witness on geology was Dr. Richard H. Jahns. He directed his testimony to Dr. Hall's theory and showed that his

theory was physically and geologically impossible. Briefly, Dr. Hall testified that the pull apart basin in the general area of the curved breaks at the north end of the Transverse Ranges was created nearly thirteen million years ago, and that all the postulated movement on the Hosgri Fault occurred within the last five million years. However, there simply is no way to accommodate the 80 kilometers of movement on the Hosgri Fault, and thus Dr. Hall's theory fails (Tr. 10,031-10,079). Additionally, there exists today a pie-shaped piece of land between the Lompoc-Solvang fault and the Hosgri Fault (immediately above X' on PG&E's Ex. 43) that, according to Dr. Hall (Tr. 9668) came from an area east of Buellton during the past 5 million years. Dr. Jahns has stated that such a movement would necessitate that land moving across the Hosgri Fault, a geologic and physical impossibility (Tr. 10,037, 10,038).

The Staff's witness on this contention was Dr. J. Carl Stepp. He recited the Staff conclusions at the construction permit stages, and the extensive amount of new data developed by PG&E and others at the request of the Staff following discovery of the Hosgri Fault. Based upon a review of this data, he testified that the Staff concluded that PG&E had conducted an adequate investigation of the Hosgri fault which, when combined with data developed by others

. . . provides a basis for making a reasonable and conservative interpretation as to the length of the Hosgri Fault zone, its relationship to other regional tectonic structures, and the nature, amounts, and geologic history of displacements on the fault (Stepp Testimony following Tr. 8484 at 1-11).

He stated that the Staff also concluded that the Hosgri Fault does not appear to be directly linked to the San Simeon, and that the Hosgri has experienced strike-slip movement of at most only a few kilometers (Testimony at 11-23).

Accordingly, after considering all of the evidence, the Board concludes that PG&E has conducted an adequate investigation of the Hosgri Fault, that it is a feature about 145 kilometers in length ending in the north about thirty miles north of Estero Bay near Pt. Piedras Blancas, where it lies *en echelon* but not connected with the San Simeon Fault, in the south it dies out southward of Point Sal near Purisima Point within a zone of complex folding, and that the fault has experienced right lateral strike-slip motion of at most 20 kilometers over the last 20 million years.

B. The Hosgri Fault Earthquake Potential

CONTENTION 2

A 7.5 magnitude earthquake is not an appropriate value for the safe shutdown earthquake.

The significance of Contention 2 is that the magnitude of the maximum credible earthquake which might occur on the Hosgri Fault bears a direct

relationships to the vibratory ground motion one might expect at the site. Extensive evidence was introduced during the course of the hearing on this subject. However, as the Board has noted, *supra*, all parties appear to be in agreement that the assignment of a 7.5 magnitude is acceptably conservative for the safe shutdown earthquake. Regardless, the Board believes that a discussion of the evidence adduced at the hearing will help to place the assignment of this magnitude in the proper perspective.

The figure of 7.5 M was originally assigned as a potential magnitude for the Hosgri by USGS consultants to the Staff. (SER Supplement No. 4, Appendix C, May 1976). Although the USGS did not state specifically that a 7.5 M earthquake was likely to occur on the Hosgri in their report of April 1976, they set out reasons why they believed such an event could not be precluded. Those reasons were:

1. The Hosgri Fault zone is more than 90 miles long and may even be tectonically coupled to the San Simeon fault as they are within 2.5 miles of each other and both form parts of the eastern boundary of the Santa Maria Basin.
2. Marked changes in thickness and signature of acoustical units across the Hosgri Fault zone in several profiles indicates evidence of lateral slip. This was noted in the Survey's review of January 28, 1975, but such changes are even more abundant in the profiles of amendment 31 to the FSAR. Right lateral movement is reported for the San Simeon Fault. These data suggest that displacements on the Hosgri Fault are related to the highly active San Andreas plate-boundary system.
3. The length of the Lompoc Fault proposed by the Applicant as the most likely location of the 1927 event appears incompatible with the magnitude of the 1927 earthquake.
4. The Hosgri Fault is closer to the center of the estimates of error of both Engdahl and Gawthrop than any other fault. It is therefore a possible source of the 1927 earthquake.
5. Questionable evidence relating to vertical displacement on the Hosgri Fault in the epicentral area of the 1927 earthquake does not eliminate it as a source. Surface rupture is generally discontinuous, and if lateral slip occurred, it probably would not be detected. Offset of the base of Post-Wisconsinan sediments and probable faulting of them is evidence of Post Pleistocene movement.

PG&E's witnesses on seismology were Drs. Bruce A. Bolt, Gerald Frazier, and Steward W. Smith. Drs. Bolt and Frazier adopted the testimony prepared by Dr. Smith (Tr. 5447, 5448). He testified that the seismic analysis done at the construction permit phase of the proceeding provided a number of conservatisms which could be relaxed in light of present day knowledge and data, and that use of a magnitude 7.5 earthquake on the Hosgri Fault in the

reanalysis of the plant is grossly conservative (Testimony following Tr. 5490 at 1-6; Tr. 5692).

Dr. Smith testified that in order to assess the earthquake potential of a fault one should take into account amount of slip, type of faulting and proximity of plate boundaries. Efforts to establish continuity in order to determine the total length of a fault system are not very useful if the primary intent is to establish the potential for future earthquakes (Tr. 5676, 5688, 5689). However, the amount of fault slip that has taken place over recent geologic time appears to be a significant measure of the amount of earthquake activity that has occurred (Tr. 5691). If, for example, a fault has had kilometers of slip it must have had a substantial length during the time that slip accumulated. This would be true irrespective of whether the geologic data is adequate to show continuity of a single fault trace. (Testimony at 6-8).

Dr. Smith stated that it is also important to consider the time frame within which the fault slip has taken place. The existence of a fault slip many millions of years ago may have little or no relevance to the present day seismic potential of that fault. The last 20,000 and particularly the last 17,000 years is an appropriately conservative interval on which to base an assessment of fault activity. (Testimony at 8-9; Tr. 5549, 5824-5829).

Dr. Smith testified that one should ask what the tectonic framework can reveal about stress conditions on the fault in question. This is important because stress conditions are more likely to control a ground motion parameter, such as peak acceleration, than is earthquake magnitude. Regions undergoing normal faulting, a situation characterized by horizontal tension, typically produce lower-stress earthquakes than those associated with thrust faulting, in which horizontal compression is dominant. Strike-slip faulting is likely to be intermediate between these two extremes. In addition to the local style of faulting, the proximity of the region to major plate boundaries is important in assessing what the stress conditions are likely to be. Thus, faults closest to the main break of the San Andreas appear to have the largest amount of late Quaternary (up to two and one-half million years ago) displacement, while those such as the Hosgri have progressively less displacement the further removed they are from the San Andreas Fault, the present plate boundary (Testimony at 9-11; Tr. 5829, 5830, 5833, 5834, 5839).

Applying these principles to the Hosgri Fault provides the following:

- a) Slip history of the Hosgri Fault during the late Quaternary period is only several meters, indicating that during this time it was not operating as part of a long fault system.
- b) Focal mechanisms and geologic data show that deformation changes from right lateral shear on the San Andreas to normal faulting in the offshore Santa Maria Basin. The local stress conditions for the Hosgri would thus be expected to be intermediate between normal faulting and

strike-slip faulting—that is, significantly less than those expected for compressional regimes.

- c) The Hosgri, some 80 kilometers from the San Andreas, is much less affected by the stress field from this plate boundary than those faults which are closer to or intersect the San Andreas, and thus the stress levels and earthquake potential are correspondingly less on the Hosgri (Testimony at 11).

The Southern Coast Range Province in which Diablo Canyon is located is an area of low-to-moderate seismicity. Major activity is centered on the San Andreas fault about 80 kilometers to the east, and in the Transverse Range Province about the same distance to the south. As explained by Dr. Smith, his approach has been to assume that all the recognized faults in the Southern Coast Range Province are seismically capable, and that their potential activity in the future can be best estimated by examining their geologic record of slip in the past. Available evidence points toward a gradual transition from the right-lateral shear environment near the San Andreas Fault to a tensional environment in the offshore on the Santa Lucia Bank Fault. If the offshore region is one of transition to a tensional rather than a compressional regime, this would significantly reduce the potential for high-stress, high-peak-acceleration earthquakes on the Hosgri or other nearby faults. (Testimony at 14-16).

As stated earlier, Dr. Smith examined both the seismic and geologic history of the region and concluded that to assure a very conservative estimate of future seismic potential the emphasis should be placed on the geologic record, particularly over the last approximately 17,000 years (Tr. 5549). However, recent developments in the use of seismic moment⁶ make it possible to directly assess the present day seismicity in terms of slip rates and thus test the idea of whether or not the current rate of earthquake activity is consistent with the geologic record of fault slip (Testimony at 16, 17; Tr. 5531, 5547).

The first approach to relating seismic history to fault slip through seismic moment was done by examining the average seismicity during the last half century in the Southern Coast Range Province, excluding both the San Andreas and the Transverse Ranges. The result shows the usual type of size distribution for California earthquakes. Distributing these earthquakes over the four principal northwest trending fault zones (Hosgri, Rinconada,

⁶ During the past decade seismic moment has come into common use in seismology as an effective means to characterize the size of an earthquake. The type of dislocation caused by an earthquake in an elastic medium can be represented mathematically in terms of its equivalent force system—that is the pair of forces that would have to be applied to produce the same elastic displacements throughout the medium. The moment of these forces turns out to be simply the product of the average slip, the fault area, and the rigidity of the surrounding rocks. Seismic moment can also be related empirically to earthquake magnitude, thus making the link to relate geologically observable quantities to seismological data (Testimony at 17; Tr. 5532, 5781, 5782).

Nacimiento, and Santa Lucia Bank) permits one to calculate a return period for earthquakes of a specified magnitude on each fault zone. Thereafter, the postulated seismic activity can be converted into an estimate of fault slip by means of the seismic moment. Each of the four faults would have to be assumed to span the entire region sampled, thus making them about 200 kilometers long. A rough calculation shows that one magnitude 6.5 earthquake every 700 years along a 200 kilometer fault will lead to a net slip of about 1.5 meters over the past 17,000 years (Tr. 5700). Since observations of surface faulting show the slip locally may exceed two or three times the average slip, one would expect to see, locally at least, a slip of several meters from this postulated level of seismic activity. This is in fact what has been observed in the seismic profiles across the Hosgri, leading to the conclusion that this level of seismicity, up to magnitude about 6.5, is likely to represent the maximum that has occurred here (Tr. 5801). Similar calculations assuming a magnitude 7 lead to a total average slip during the past 17,000 years of about three meters. From this one could expect to see slip locally exceeding two or three times this amount. Fault slip on the Hosgri, if there were to be any, would have roughly comparable components of vertical and horizontal motion. (Tr. 5550, 5551, 5553-5555, 5559). It is unlikely that large amounts of horizontal slip could have occurred on the Hosgri without their having been recognized in the data available. (Tr. 5574, 5575, 5586, 5587). Since fault slip of this magnitude would have produced a more significant and pervasive record of sea-floor disturbance along the Hosgri, even if it were primarily horizontal in direction, it can be concluded that earthquakes of this size cannot have been characteristic of this region during the last 17,000 years. (Testimony at 18-20; Tr. 5520, 5521, 5533-5546, 5548, 5549, 5560). In other words, there have not been recurrent earthquakes above 6.5 magnitude on the Hosgri in the past 17,000 years. (Testimony at 29).

In an effort to further test these ideas and examine the sensitivity of the result to the size of the region over which seismicity was sampled, the analysis was extended to include the entire plate boundary region from Cape Mendocino to Baja California. After apportioning the seismic activity in the region between the San Andreas and the various secondary faults which parallel it, about 5% of the San Andreas activity is found on the Hosgri. This leads to an average return period for a magnitude 6.5 earthquake on the section of the Hosgri adjacent to Diablo Canyon of about 1,000 years, which is consistent with the earlier result. (Testimony at 20-21; Tr. 5570, 5810, 5811).

To further check the consistency of this approach it can be applied directly to the San Andreas, where a good deal more is known about the history of slip. One commentator (Sieh) has estimated recurrence rates of great earthquakes on the San Andreas from which slip rates may be inferred of from 3.7 to 6.0 centimeters per year. Using the last half century of instrumental data on earthquake occurrences, predicted earthquakes produce a slip rate of only two centimeters per year. Thus, the sample of seismicity during the last 45 years

appears to underestimate the plate boundary motion by a factor of about 2 or 3. This type of agreement is considered satisfactory, considering that a significant part of the plate motion may take place as creep, or that the period of time sampled was not as seismically active as the average. In either case, the inference drawn regarding the Hosgri would be expected to err on the side of conservatism. (Testimony at 20-22; Tr. 5756, 5769, 5770).

Dr. Smith also presented the evidence on which he bases his belief that the Lompoc or Pt. Arguello 1927 earthquake did not occur on the Hosgri Fault. Preliminarily, Dr. Smith listed the most severe effects resulting from this earthquake and noted that even if the earthquake had been on the Hosgri adjacent to the site it would pose no ground motion problem more severe than those considered in the original design of the plant. Briefly, the evidence Dr. Smith brings to bear concerning the location of the 1927 earthquake is as follows:

- a) The type of data used to locate the event in the study upon which USGS relied in arriving at its conclusion that the event may have occurred on the Hosgri (arrival times of seismic waves at distant recording stations) was unreliable.
- b) Interval times between shear and compressional waves for aftershocks provide more reliable data.
- c) The available intensity data shows that the pattern of lines of roughly equivalent earthquake damage would put the earthquake directly offshore from Point Arguello.
- d) Consideration of the sea-floor topography shows that there are no sea-floor offsets along the Hosgri that appear as if they could have been associated with this earthquake.

When taken together, Smith believes that this evidence points convincingly toward the Lompoc structure as the source of the 1927 earthquake. (Testimony at 22-25; Tr. 5483, 5484, 5635-5645). Dr. Jahns and Mr. Hamilton also believe that the 1927 earthquake occurred in the Lompoc rather than the Hosgri Fault. (Tr. 5319, 5483, 5484). The Fugro Report, done for the USGS in late 1978 (PG&E Ex. 45), concludes that the evidence does not favor speculations that the 1927 Point Arguello earthquake occurred on the Hosgri Fault.

Joint Intervenors' witness Silver testified that in his opinion the Hosgri-San Gregorio Fault System was a continuous fault zone extending at least 400 kilometers from near Bolinas to south of Point Sal. Using a formula developed by Dr. Smith and filed as part of the FSAR, Silver computed a possible maximum earthquake on the Hosgri Fault of magnitude 8.25, a much

higher number than that produced by Dr. Smith. This arose from the use of higher input numbers in the formula, namely the 400 kilometer fault length, a rate of slip of 1.6 centimeters per year and a time span of only 1000 years. The witness emphasized that the result was a maximum, an "outer expected magnitude." (Tr. 6203-6224, 6434, 6435, J.I. Ex. 49). Using a different method and again assuming the fault broke over its entire length of 400 kilometers, he calculated a maximum earthquake of magnitude 8. (J.I. Ex. 49; Tr. 6203-6224). On cross-examination, Dr. Silver acknowledged that a recent gravity map introduced some uncertainties in his theory of large offset along the San Gregorio Fault at a point suggested by Silver and constituting one of the seven matching points relied upon by Graham. (Tr. 6250-6259). In addition, substantial errors in plotting offshore data collected by Silver were uncovered (Tr. 6264-6297). Further, Dr. Silver admitted that he was not aware of any earthquake fault zone that had ever ruptured over its entire length during a single event, and that "generally" this does not occur (Tr. 6354, 6442, 6453). A later USGS witness agreed (Tr. 8335). Mr. Hamilton previously testified that it would be conservative to assume that one-half of the total length of a fault will experience rupture during an earthquake (Tr. 4877). With regard to using Dr. Smith's formula, Dr. Silver conceded that several of the numbers he (Silver) used were arbitrary, that the amount of slip he used was based on interpretive measurements taken at one location on the San Gregorio Fault and was not necessarily applicable to the Hosgri Fault, although he applied the rate to his full assumed length of the fault, that a later study of the same area on the San Gregorio Fault showed no slip at all over a 16-year period, and that he did not know whether in his formula Dr. Smith used fault zones or faults. Finally, Dr. Silver was unable to state within a reasonable degree of geologic certainty that an earthquake as large as a 6.5 magnitude had or would ever occur on the Hosgri Fault. (Tr. 6333, 6344, 6437-6442, 6447-6453). Earlier, Dr. Smith testified why he found his formula too conservative and thus avoided using it for his testimony. (Tr. 5776, 5777, 5781-5783).

Dr. Mihailo Trifunac, called by Joint Intervenors as a witness, did not believe a 7.5 magnitude earthquake would be appropriate for the Hosgri. He believed a 6.5 magnitude would be more appropriate (Tr. 8971).

At the conclusion of his testimony, the Board asked Dr. Smith and the other panel members how the Board could be confident that another Hosgri-type fault was not lurking offshore (Tr. 6030). Dr. Smith replied that there certainly are other offshore faults in the area but that none could be of such significance as to affect the conclusions concerning the safety of the Diablo plant. This follows from the fact that the original design parameters established in 1967 were so conservative that the Hosgri or any similar type structure would not be large enough to take the Diablo plant beyond the envelope of the limits proposed in those days. It was also pointed out that the rocks in California are of a type that can only store up so much energy and thus there is an upper limit on the amount of earthquake energy which can be

released. Also, the tremendous amount of offshore data which has been gathered has given a vastly improved general understanding of the structures and location of offshore faults, at least as far as the distance onshore to the San Andreas. In other words, there is no unexplored region in the offshore area of interest, and the information available precludes the existence of any fault that could be as large as the Hosgri or as influential in the plant design (Tr. 6026, 6030-6033).

Two representatives from the USGS, Messrs. James Devine and Francis McKeown, appeared on behalf of the Staff. They testified in support of the report they wrote which was filed as Appendix C of Supplement 4 to the SER. Among other things the report concludes that an earthquake similar to the 1927 Lompoc earthquake could occur anywhere along the Hosgri Fault, that the Hosgri, San Simeon, and San Gregorio Faults are subsidiary faults within the San Andreas system, that such faults have not been demonstrated to be capable of magnitude 8+ earthquakes, and USGS Circular 672 should be used to form the basis of a description of an earthquake postulated to have the potential for occurring on the Hosgri Fault. (Appendix C, SER Supp. 4, pp. C-15, C-16). Although the letter transmitting the report is dated April 29, 1976, the witnesses testified that the report reflected their present opinion, and if they were issuing the report today the content would be essentially the same (Tr. 8194). They also testified that there was no disagreement between various members of the USGS as to the conclusions in the report. (Tr. beginning at 8218). In response to Board questions, they testified that they would not expect an earthquake on one of the faults of the Hosgri-San Simeon-San Gregorio Fault system to cause an earthquake to occur on one of the other faults in the system. (Tr. 8334-8335), and they expressed agreement with the earlier testimony of Mr. Hamilton and others, and the Board agrees, that it is inconceivable that a fault more significant to the plant site than the Hosgri lies offshore waiting to be discovered. (Tr. 8337, 8338).

Dr. Stepp, one of the Staff witnesses on this contention, testified that the 1927 earthquake could have occurred on the Hosgri but that, on balance, it probably was associated with the Transverse Ranges structures and that, in any event, it was very conservative to assume a 7.5 magnitude earthquake on the Hosgri Fault (Testimony at 12, 31, 32). The other Staff witness on this contention, Renner B. Hofmann, concluded that the 1927 Lompoc earthquake did not occur on the Hosgri Fault (Tr. 8533-8535), and that the assignment of a 7.5 magnitude earthquake to the Hosgri Fault was extremely or ultra-conservative (Hofmann Testimony on Contention 2 following Tr. 8522 at 1-5; Tr. 8539).

Accordingly, the Board concludes that a 7.5 magnitude earthquake is a very conservative value for the safe shutdown earthquake. We also find that the requirement imposed by the Staff that a 7.5 magnitude earthquake be used by the Applicant in its seismic analysis is reasonable and meets regulatory requirements.

C. Peak Instrumental and Effective Acceleration

CONTENTION 3

A 0.75g acceleration assigned to the safe shutdown earthquake is not an appropriate value for the maximum vibratory acceleration that could occur at the site.

The central controversy with respect to this contention is whether the acceleration value for anchoring or scaling response spectra should be 0.75g or 1.15g. The 0.75g value is the anchor point used by Applicant (Blume Testimony following Tr. 6100) and by Staff (Newmark Testimony following Tr. 8552) for scaling response spectra which represented the expected ground motion at the Diablo Canyon site from a hypothetical 7.5 magnitude earthquake on the Hosgri Fault. The 1.15g value is the peak acceleration given in Table 2, for magnitude 7.5, of U.S. Geological Survey Circular 672 (Intervenor's Ex. 45). Intervenor's witness, Dr. J. E. Luco, took the position that reduction from a peak instrument acceleration of 1.15g to an effective acceleration of 0.75g was not warranted (Tr. 8877-80, 8971-72, 9137). Intervenor's witness Dr. M. D. Trifunac, stated that he was satisfied with the use of 0.75g as proposed by Dr. Newmark because he believes that a postulated earthquake of 6.5M would be reasonable for the Hosgri analysis. (Tr. 8971, 8985, 9230). Intervenor's witness Dr. Brune testified that due to uncertainties inherent in extrapolation from a small data base, and the possibility of such seismic phenomena as focusing, actual peak acceleration could be twice as high as indicated in USGS Circular 672. (Tr. 7963, 8056-8058). The basic question then is whether or not the effective acceleration of 0.75g used by Applicant and Staff for developing ground response spectra is appropriate to represent the safe shutdown earthquake.

Dr. John A. Blume (following Tr. 6100) provided written testimony concerning basic seismic terminology, the procedures involved in calculating response spectra, and the criteria used to evaluate the Diablo Canyon plant for the postulated 7.5 magnitude earthquake. The basic inputs for calculating a response spectrum are a complete time history of the ground motion produced by a seismic disturbance and a series of simple, elastic, oscillators having the same damping but different natural periods of vibration. Each oscillator is subjected to the time history of motion and its maximum response is calculated. The resulting graph of maximum acceleration (in gravity units) versus vibratory period (in seconds) is the acceleration response spectrum for the particular time history and the particular series of damped oscillators considered in the analysis. The peak instrument acceleration is the highest acceleration indicated by the time history of motion while the effective acceleration is the same as the spectral response at zero period or infinite frequency. At frequencies above 20 hertz effective acceleration is essentially constant and is also referred to as zero period acceleration or anchorpoint

acceleration. This distinction between peak instrument acceleration and effective acceleration was not challenged by any of the parties.

At page 2 (following Tr. 6100) Dr. Blume states that:

The effective acceleration used as the basis for the evaluation of the Diablo Canyon plant for the hypothetical 7.5M earthquake on the Hosgri Fault is 0.75g. However, the peak instrumental acceleration from which that value was derived is 1.15g.

Dr. Blume pointed out that the postulated 7.5M earthquake on the Hosgri Fault was in accord with the USGS recommendation, which he considered to be quite conservative for a variety of reasons detailed in his testimony.

It was staff witness and consultant, Dr. Nathan M. Newmark (written testimony following Tr. 8552) who proposed that the peak instrumental acceleration of 1.15g cited in USGS Circular 672 for a 7.5M earthquake be assigned an effective acceleration of 0.75g for the purpose of developing ground response spectra. Dr. Newmark's basis for this proposal is described in Reference "A" of his written testimony. In brief, he uses the time history records of the Pacoima Dam earthquake of February 9, 1971, which show a peak instrumental acceleration of 1.2g, to calculate a ground response spectrum. Then, using an anchorpoint or effective acceleration of 0.75g and following procedures very much the same as described in NRC Regulatory Guide 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants," he constructed design spectra for various damping values (Figure 1a of Reference A following Tr. 8552). The design spectrum for 2 percent damping generally encloses, by a substantial margin on the whole, the Pacoima Dam response spectrum. Dr. Newmark concludes (at p. 3 of Reference A) that:

This is the most direct indication that the 'effective' peak acceleration for the Pacoima Dam record is not in fact the measured value of 1.2g, but actually does not exceed 0.75g. Therefore this is taken as the effective peak acceleration for design.

Dr. Luco, an ACRS consultant subpoenaed by Intervenor, took the position that if one uses a design basis earthquake of 7.5M as recommended by USGS, one should also use 1.15g, i.e., the corresponding instrumental acceleration value in Table 2 of USGS Circular 672, as the anchorpoint or effective acceleration for development of ground response spectra. This position is contradicted by the testimony of Drs. Blume and Newmark, *supra*, and by the USGS report of April 1976 (SER Supp. 4, Appendix C) which has the following to say with respect to the values in USGS Circular 672:

7. We repeat our opinion that, for sites within 10 km of the surface expression of a fault, the description of

maximum earthquake ground motion by means of a single acceleration value may not be an appropriate representation.

Consequently, we feel that an appropriate earthquake for this site should be described in terms of near-fault horizontal ground motion. A technique for such a description is presented in the Geological Survey Circular 672 entitled 'Ground Motion Values for Use in the Seismic Design of the Trans-Alaska Pipeline System' (Ref. 4). It is our intention that the ground motion values as exemplified by Table 2 'Near-fault horizontal ground motion' of Ref. (4) for magnitude 7.5 be used to form the basis of a description of the earthquake postulated to have the potential for occurring on the Hosgri Fault at a point nearest to the Diablo Canyon site subject to the conditions placed on these values in Ref. 4. *The earthquake so described should be used in the derivation of an effective engineering acceleration for input into the process leading to the seismic design analysis.* (Emphasis added).

Dr. Luco further based his opinion concerning the selection of 1.15g to characterize the peak acceleration associated with the postulated 7.5M earthquake on the Hosgri Fault within 10 km of the Diablo Canyon site on calculations made by himself using correlations developed by Dr. Trifunac. Dr. Trifunac, on the other hand, testified that he would have preferred to postulate a 6.5M earthquake on the Hosgri Fault (Tr. 8971); and that given such a postulate, he would expect a peak acceleration in the vicinity of 0.7 to 0.8g.

Dr. Blume made it clear that he believes that the 7.5M and 0.75g effective acceleration values postulated for the safe shutdown earthquake for the Diablo Canyon plant are too conservative, and that a 6.5M and 0.5g effective acceleration would have been adequate for the seismic re-evaluation (pp. 15-18 following Tr. 6100). The general opinion that the postulated earthquake parameters, a 7.5M earthquake on the Hosgri Fault and an effective acceleration of 0.75g at the Diablo Canyon site, are indeed conservative was supported by Dr. Seed (Tr. 10, 102-10, 108), Dr. Frazier (Tr. 10, 113-10, 117), Dr. Bolt (Tr. 5876-5880), Dr. Stepp (p. 12 following Tr. 8484) and Mr. Hofmann (Tr. 8539, 8540).

Dr. Seed's testimony (Tr. 10,192 et seq.) was based on the limited data presently available for peak accelerations measured at distances less than 10 km from earthquake epicenters. A plot of peak near field acceleration versus earthquake magnitude shows that for earthquakes of 6.25M and above the

peak near field acceleration is essentially constant (Applicant's Exhibits 61, 62, and 63) and has a mean value (Tr. 10,016) of about 0.6g. From this analysis and other considerations, Dr. Seed concludes (Tr. 10,108) that there is no need to introduce the concept of effective acceleration in this case, and that:

The actual mean acceleration associated with the magnitude 7.5 earthquake on the Hosgri fault is less than 0.75g, and this is the value used to anchor the spectrum in accordance with customary NRC procedures.

The clear implication of Dr. Seed's testimony is that using 0.75g is a conservative anchorpoint for the design response spectrum even when the distinction between peak instrumental and effective acceleration is disregarded.

Dr. Blume also discussed the probabilistic aspects of peak ground acceleration. Based upon a number of studies and analyses, Dr. Blume concluded that if a 7.5 magnitude earthquake is considered possible on the Hosgri Fault, 1 1.15g instrumental acceleration would have an average return period of about 100,000 years. The effective acceleration—.75g—associated with the 1.15g instrumental acceleration has the same average return period—roughly 100,000 years (pp. 33-37 following Tr. 6100).

Intervenor's primary witness on this point was Dr. James N. Brune. Basically, his testimony was that, because the data base is so small, uncertainties exist, and accelerations and velocities could be a factor of two greater than those postulated in USGS Circular 672 (Tr. 7963). These greater accelerations could arise from such phenomena as focusing (directivity) Tr. 7936, 7937) or high stress drops (J.I. Ex. 66, pp.3-2, 3-3; Tr. 7938, 7939). Focusing it is not a new phenomenon (Tr. 7953, 7956, 7957). Dr. Brune cautioned that these higher numbers are based on extrapolations of very limited data and thus of low confidence (J.I. Ex. 66, pp. 3-9), and he presented specific arguments which might be cited against the possibility of these higher numbers (J.I. Ex. 66, pp. 3-16 - 3-18). He concluded, however, that because of the limited data base the higher values were at least theoretically possible (Tr. 8056-8058). The witness could not assign a level of probability to his higher values (Tr. 8143) except to describe them as being "low" for any given earthquake (Tr. 8144). There was also testimony that only two such higher values had ever been recorded—one from the Russian Gazli earthquake, for which a vertical acceleration of 1.3g was recorded (Testimony at 3-4), and one from the Pacoima Dam record (1.2g), (Tr. 5846, 7977). It was also developed that in every case there was more than one possible explanation for the points raised in his testimony (Tr. 8059-8080). Considering all of the evidence, the Board is of the opinion that the speculated higher values postulated by Dr. Brune are not of design or analytical significance for the Diablo Canyon Plant.

Based on the record, as reviewed, *supra*, the Board concludes that the 0.75g acceleration assigned to the safe shutdown earthquake is an appropriately conservative value for the maximum vibratory ground acceleration that could occur at the Diablo Canyon site and thus an appropriate anchorpoint (or maximum ground acceleration as defined by NRC Regulatory Guide 1.60) for the design response spectra.

D. Operating Basis Earthquake

CONTENTION 4

The maximum vibratory acceleration of .2g for the operating basis earthquake is not one-half of the maximum vibratory acceleration of the safe shutdown earthquake.

Appendix A, Section V, paragraph (a)(2) of 10 CFR 100 specifies that the maximum vibratory ground acceleration of the Operating Basis Earthquake (OBE) shall be at least one-half the maximum vibratory ground acceleration of the Safe Shutdown Earthquake (SSE). Appendix A also says, in relevant part, that the OBE is " . . . that earthquake which . . . would reasonably be expected to affect the plant site during the operating life of this plant . . ." (Section III, paragraph (d)), and Section II states that departures from this criteria specified in Appendix A are permitted with proper justification.

Diablo Canyon was originally designed to a "Double Design Earthquake" (now the SSE) with a maximum vibratory acceleration of 0.4g and a concomitant "Design Earthquake" (now the OBE) with a 0.2g acceleration. Following the discovery and subsequent investigation of the Hosgri Fault, the Applicant was required to modify the plant, where necessary, to withstand an SSE with a maximum vibratory acceleration of 0.75g. The OBE, however, was maintained at an acceleration of 0.2g rather than the 0.375g which the bare words of Sections V, paragraph (a)(2) of Appendix A would lead us to. The Applicant maintains, and the Staff agrees, that setting the OBE acceleration at 0.2g satisfies the overall requirements of Appendix A. (Hoch Testimony, pp. 18-21, following Tr. 6879; Tr. 8423-8426, 8471, 8472).

The Board has reviewed Appendix A and the Statement of Considerations which accompanied the September 1, 1978 revision. In the discussion in the Statement of Considerations of changes to Section V, "Seismic and Geologic Design Bases" we find the following:

Paragraph (a)(2) of Section V has been changed to require the Applicant to specify the Operating Basis Earthquake. A requirement which reflects the seismic design bases for plants recently evaluated for construction permits that the maximum vibratory ground acceleration of the Operating Basis Earthquake shall be at least one-half the maximum vibratory ground acceleration of the Safe Shutdown Earthquake has been added.

The language of this clarifying statement together with the total text of Appendix A leads the Board to believe that the OBE requirement was intended to apply to the original design basis at the construction permit stage,

and is not necessarily applicable to the instant case. Further, the arbitrary nature of the quantitative requirement, based as it is upon" . . . the seismic design bases for plants recently evaluated . . ." appeals to us as more of a guideline for prudent design rather than an iron-clad necessity for Regulatory approval. The Board, of course, has no intention of ignoring the requirement, but does believe that these considerations offer a firm foundation for relief, in the instant case, under the provisions of Section II, "Scope" of the Appendix.

The NRC has accepted an OBE for other plants of less than one-half the SSE (Tr. 7843-7845) on the basis of a probabilistic analysis estimating the exceedance probability and return period for such an earthquake. (Hoch Testimony following Tr. 6879 at 9-12). The principle is that an OBE is one which would reasonably be expected to affect the plant site during the operating life of the plant. The Staff has stated that it considers that an earthquake that exhibits an exceedance probability of no more than 30% and a return period of no less than approximately 110 years could reasonably be expected to affect a plant site and produces a conservative acceleration level for the OBE. PG&E conducted its own analyses, taking into account the various factors specified in Appendix A to 10 CFR 100, which produced a range of exceedance probabilities and average return periods. For a peak instrumental acceleration at the site of 0.20g, the lowest average return period computed by any of the methods used in the analysis is 275 years, and the corresponding exceedance probability for a 40-year plant lifetime is approximately 14.5%. Since the return period is more than twice the 110 year period specified by the Staff and the exceedance probability is less than one-half that specified by the Staff, an OBE of 0.2g is acceptable and it has, in fact, been accepted by the Staff. (Testimony following Tr. 6879 at 9-12; SER Supp. 7, pp. 2-4, 2-5; Tr. 6909, 6910).

The NRC project manager for the Diablo Canyon Plant affirmed that the proposed OBE conforms to the requirements of Appendix A to 10 CFR 100. (Tr. 8423-8426, 8471, 8472). Staff witness Dr. Newmark stated that in his opinion, and that of many engineers, the proper value for an OBE is from one-fourth to one-third of the SSE. (Newmark Testimony at 6). Moreover, in testing plant electrical equipment for the Hosgri event, an OBE equal to or greater than 50% of the SSE was used (Tr. 7845, 7846). It should also be noted that the safety of plant systems and components is measured against codes which exceed the lower OBE value. Hence, the safety of the plant is not controlled by the OBE, but by the various codes (Tr. 8707-8709).

Testimony on the OBE was offered on behalf of Joint Intervenors by Richard B. Hubbard (J.I. Ex. 65). After extensive examination on *voir dire* the bulk of his testimony was stricken as being beyond the technical expertise of the witness. (Tr. 7708-7800, 7832-7838, 7861-7869). No evidence was presented demonstrating that the use of 0.2g for the OBE would result in any undue risk to the public health and safety. In fact, the Board concludes that setting the OBE at 0.2g, rather than a higher level, will require PG&E to shut the plant down for inspection at a lower acceleration than otherwise, thereby adding a further safety feature.

Accordingly, the Board finds that use of an operating basis earthquake of 0.2g is reasonable for the Diablo Canyon facility.

E. Response Spectra and Seismic Design

CONTENTION 5

The Applicant has failed to demonstrate, through the use of either appropriate dynamic analysis or qualification tests (or equivalent static load method where appropriate), that Category I structures, systems, and components will perform as required during the seismic load of the safe shutdown earthquake, including aftershocks and applicable concurrent functional and accident-induced loads, and that Category I structures, systems, and components will be adequate to assure:

A. The integrity of the reactor coolant pressure boundary;

B. The capability to shut down the reactor and maintain it in a safe condition; or

C. The capability to prevent or mitigate the consequences of accidents which could result in excessive offsite exposure.

CONTENTION 6

The Applicant has failed to demonstrate, through the use of either appropriate dynamic analyses or qualification tests (or equivalent static load methods where appropriate), that all structures, systems, and components of the nuclear power plant necessary for continued operation without undue risk to the health and safety of the public will remain functional and within applicable stress and deformation limits when subject to the effects of the vibratory motion of the operating basis earthquake in combination with normal operating loads.

CONTENTION 7

The Applicant has failed to demonstrate adequately that necessary safety functions are maintained during the safe shutdown earthquake where, in safety-related structures, systems, and components, the design for strain limits is in excess of the yield strain.

Using .75g acceleration as the value against which to design for the safe shutdown earthquake (SSE), the Applicant and Staff testified that adequate testing and analysis has been performed to demonstrate that Category I structures, systems, and components would perform as required during the seismic load of the SSE and will remain functional and within the applicable stress and deformation limits.⁷

Given an acceleration of .75g, response spectra can be developed for analysis of the structures, components, and equipment. PG&E through Dr. Blume, and the Staff, through Dr. Newmark, devised such spectra. The use and understanding of the term response spectrum (plural "spectra") was given by Dr. Blume in his testimony as follows: (Blume Testimony at 5-8, Tr. 6100).

The response spectrum is an extremely important concept in the analysis and design of nuclear power plants for earthquake motion. If a complete time history of motion is used as the disturbance input, it is possible to calculate the maximum response of a simple one-degree-of-freedom elastic, damped oscillator when subjected to the entire time history of motion. Such a simple oscillator might be represented by a single rigid mass on a vertical stick having stiffness but no weight, or a "lollipop" shape. The results of such a calculation would produce only one point for a response spectrum curve and that point would be for the natural period of vibration of this particular oscillator with its particular damping ratio. If a whole series of oscillators of the same damping are subjected one at a time to the same ground motion record, and if each oscillator has a different natural period, there would be a whole series of points for a plot of maximum acceleration versus period. Connecting these points would provide a "response spectrum" for the particular ground motion record and for the particular damping of the oscillator. If the same procedure were repeated using oscillators with other damping values, a whole family of spectral curves would be obtained for the particular strong motion record. Of course these extensive calculations are done in computers.

Most acceleration response spectra made from an earthquake record are rather ragged with many peaks and valleys. It is customary to obtain smooth curves for use in analysis and design in order to avoid the problems associated with these peaks and valleys and to avoid sensitivity in response caused by minor variations in natural period. There are various ways this "smoothing" can be done. One simple way is to draw the smooth curve through the jagged one either by averaging the peaks and valleys or, as is more often done, to almost envelope the peaks. A better way is to not rely upon one ground motion time history but to use several appropriate records representing as near as possible the conditions under consideration. This results in a whole

⁷ Knight Testimony at 19-54. Testing and analysis is discussed in excruciating detail and was not challenged by Intervenor.

series of response spectra for each damping value which series can then be treated statistically by various methods to obtain an average curve for all the records used as well as other curves representing any statistical deviation from the average that may be desired. This procedure has the advantage of not only providing a broader base of information but of providing probabilistic distributions at any period value or statistical confidence level of interest.

Response spectra can also be constructed artificially, or they can be obtained from standards like NRC Regulatory Guide 1.60, or from ratios of spectral values to either ground acceleration, velocity or displacement, depending upon the period or frequency under consideration. It so happens that effective acceleration used to construct spectral curves is the same as spectral response at any damping value at zero period or infinite frequency. Effective acceleration is therefore sometimes referred to as zero period acceleration or anchorpoint acceleration.

It is often convenient in analysis to use a time history instead of a response spectrum. However, as discussed previously, time histories produce spectra with peaks and valleys. To overcome this problem a time history is selected to best represent the conditions of the problem and it is then artificially altered, usually with additions of pulses of proper sizes and at strategic locations in the time domain to cause the spectrum made from the modified time history to closely match the prescribed spectral diagram. This work has to be carefully done and, of course, with computer aid.

Dr. Blume reviewed how he developed his basic response spectra, based upon the 0.75g anchor value and using the damping values conforming to NRC Regulatory Guide 1.61. (Blume Testimony at 39-47). Development of response spectra was also undertaken independently by Dr. Newmark, (Newmark Testimony, Reference "A" at 2) and both spectra were used in the analysis with the more conservative in any particular instance governing. Thus, two complete analyses had to be made. (Blume Testimony at 38-41). Dr. Blume compared the two peak ground acceleration values (his and Dr. Newmark's) showing that they were consistent. (Blume Testimony at 42-43).

In addition to being critical of anchoring the initial response spectrum to .75g, Drs. Luco and Trifunac were critical of further reducing, in some instances, response spectra due to factors such as tau and 7% rather than 5% damping. (Tr. 8895, 8972, 9823-926, 8971-972). However, no testimony critical of the procedures of developing the basic response spectrum by either Drs. Blume or Newmark was given. As respects tau and damping, there was a great deal of testimony.

"Tau" was defined as a simplification of a very complex wave motion-structure action problem. The tau effect is ascribed to the fact that all points on the foundation of a building do not respond in phase. As a result, the motion of the foundation is reduced which, in turn, leads to a reduction in the motion of the building (Tr. 9333). It can be looked upon as an "engineering equivalent" such as is traditionally used for various loadings and conditions

as, for example, wind forces, rail and truck loadings on bridges, live loads on building floors, current forces on wharves and docks, etc. There is ample evidence of the excellent performance of large building foundations in earthquakes. Tau is a manifestation of this. The larger the foundation and the shorter the traveling wave length, the more effective is the so-called tau reduction. The values of tau determined by Dr. Newmark and Dr. Blume varied slightly due to different approaches as did the zero-period accelerations associated with the tau-factor for each structure. However, whichever was more conservative controlled for the analysis. (Blume Testimony at 42-43).

“Damping” is related to the energy change during vibration and it varies for different materials and structures. Energy is never lost but it changes form. The kinetic energy of motion of a vibrating body or system is reduced by energy converted to heat through friction and the internal stressing or materials, and by other means. The rate or degree of this loss is called damping. If there were no damping at all, an oscillating system would never stop. In earthquake analysis viscous damping is generally assumed, and it is given as a ratio to or percentage of critical damping which is that damping value which would prevent oscillation altogether. (Blume Testimony, 3-4. See also Newmark rebuttal at Tr. 9298-9300). Damping values were reconsidered by the NRC in the period between the original design of Diablo Canyon and the discovery of the Hosgri. While 5% damping was actually used in the original design of structures, Regulatory Guide 1.61 permitted the use of 7% at the time of the Hosgri analysis, and that figure was used. (Blume Testimony 14-15).

Dr. Luco alleged that Applicant’s soil structure interaction analysis (J.I. Ex. 58) showed that there was no tau effect at Diablo. (Tr. 8923-926). Applicant stated that its study showed nothing about tau at all as it was not designed to show tau effects or the lack thereof (Tr. 10,151). While various experts’ methods of applying tau may be different, (Tr. 6807) tau effects result primarily from the fact that the wave motions are not all perfectly vertical as they approach a foundation slab and they are also due to nonhomogeneity of the soil or rock formations on which the foundation is constructed (Tr. 10,151). In rebuttal to Dr. Luco, Dr. Seed showed how the tau effect for Diablo can be derived by waves arriving at less than perfectly vertical (PG&E Ex. 64, Tr. 10,152-160) and by nonhomogeneity of the rock structure upon which the foundation rests. (PG&E’s Ex. 65, Tr. 10,162-10,166). Dr. Newmark’s rebuttal also pointed out the deficiency in Dr. Luco’s analysis on tau effect stating that Dr. Luco improperly assumed coherence of high frequency motions that affect the reactor (Tr. 9278).

In conclusion, Dr. Seed testified that the tau reduction used by Drs. Blume and Newmark was both justified and scientifically defensible (Tr. 10,167). Dr. Newmark testified that the variation in acceleration over an area is the tau effect. It has to do with the ground which is inhomogenous and scattering takes places. There would be differences in phasing, resulting in differential

values over the area, no matter whether the wave approaches from the bottom, from the side, from the middle or other direction. The tau effect is only a way of trying to account for this in some systematic and reasonable fashion. (Newmark Testimony, Reference B at 11-12 and Figs. 1-2).

The Board finds that the reductions for tau for various response spectra from the .75g zero period of the basic response spectrum are justifiable and adequately conservative.

Dr. Blume discussed the damping values prescribed in NRC Regulatory Guide 1.61 (7% for structures) and the additional data developed because these values had been questioned. Two facts were particularly important: elements with friction between parts, such as bolted steel joints or concrete with minor cracks, have considerably greater damping at a given strain level than where such friction is not possible, as for example in welded joints or in uncracked concrete; damping increases with strain or deformation. Another consideration is that a structure not only receives energy from the moving ground but returns some of it to the ground, which is often termed radiation damping. No credit for this type of damping was taken for the Diablo units. Another point is that it is not necessary to develop high strain levels throughout an entire structure to develop high damping levels; local high strain levels can be quite effective in absorbing the kinetic energy of motion, as shown by test results presented by Dr. Blume. Based upon all of this, Dr. Blume concluded that 7% of critical damping was conservative for the Diablo Canyon structures subjected to the hypothetical Hosgri earthquake, and that the value could be as high as 8% to 10% for the postulated Hosgri event. (Blume Testimony at 47-49).

Finally, Dr. Blume stated that the response spectra and damping values were applied to each structure as appropriate to obtain the moments, shears, axial forces, and stresses at various points in the structures. This was done by others and the results were provided in terms of the stresses obtained as compared to the stresses allowable under NRC regulations. In a small number of cases "over-stresses" were found and physical alterations are being made to the structures involved so as to meet all the criteria. In addition "floor response spectra" were developed to represent the amplified motion at upper levels where piping or equipment is attached or anchored. (Blume Testimony at 49-50).

Dr. Newmark testified that the design criteria for the Diablo Canyon Reactor, based on the original concept for design and the retrofit proposed, when reviewed in the way it was reviewed, and looked at by a number of people on the staff and in various consulting firms employed to make the review, results in a design which is more adequate than that of most of the other reactors that have not undergone this intensive audit. He testified that major conservative assumptions were made and that the state-of-the-art of nuclear reactor design as reflected in current practices gives an adequately conservative design. (Newmark Testimony, Reference B, p. 17).

Dr. Newmark rebutted Drs. Luco and Trifunac, stating that what the knowledgeable design engineer seeks in designing structures for dynamic loads is adequate strength combined with ductility and energy absorbing capacity rather than excessive strength and its concomitant brittleness. Dr. Newmark took into account all of the written and orally expressed opinions of Drs. Luco and Trifunac and did not have any reservations about the adequacy of the seismic design for the Diablo Canyon nuclear power plant (Tr. 9304-05). Dr. Newmark would have no hesitancy today in recommending that the Diablo Canyon Plant be built at the site where it is located (Tr. 9308).

Finally, Dr. Trifunac, called by Intervenors, testified that the structures within the complex of the plant (Diablo Canyon) are reasonably designed to withstand a reasonable earthquake on the Hosgri Fault; reasonable earthquake being a spectrum of possible events which are physically capable of happening there (Tr. 9198-199).

The Board concludes that the response spectra used by the Hosgri seismic evaluation were appropriate and conservative. The use of these spectra in the reevaluation of the plant for the postulated Hosgri event reasonably assures the preservation of the health and safety of the public.

The seismic input, once defined, is used in a mathematical process to determine how the structure would vibrate in response to the seismic shaking. In order to perform this operation, the structures are characterized in a mathematical model by means of the mass of the major parts (floors, walls, domes, etc.) and the stiffness of the connections between these parts. The stiffness is usually characterized as a spring, and we therefore commonly speak of a spring-mass model (Knight Testimony at 2).

Through the use of proven and common principles of applied mechanics and mathematics, the response of each of the major portions of the structure, as well as the response of the structure at the mounting location of safety-related systems and components, can be defined for design purposes. (*Ibid.*)

Throughout this process, the characterization of very complex structures by fundamental characteristics, such as mass and stiffness, requires idealization of the various structural parts. Because of this, a principal part of the engineering practices involved is the use of techniques which yield a conservative estimation of the various physical quantities being represented. In the analytical process these physical quantities interact in complex ways. In order to achieve overall conservatism, it is standard engineering practice to establish a conservative quantity at each stage in the analytical process. The results obtained are therefore recognized as very conservative, but prudent, until such time as a more complete understanding of the interaction between the various quantities is obtained. (Knight Testimony at 3).

The design of the various structural parts is then based upon the results of the design analyses. There is a common misconception that the design of the structural elements is such that the capacity of those elements just meets the requirements called for by the analyses. In fact, much of the structural design

is controlled by the size of standard structural members such as reinforcing rods and beams, and construction requirements such as access to make large concrete pours. In addition, engineering codes specify "code minimum strength" for materials. These code minimum strengths are in turn specified by the applicant when the materials are ordered; any material found to be under that strength is rejected. The result is that the material supplier, in order to assure that he stands no risk of having costly material returned, provides material of considerably higher strength. These higher strengths are borne out by the mill test reports for steel and concrete cylinder tests. There is normally no motivation to go back and assess the true strength of various structures, systems, and components, because of the costs of reanalysis and time lost swamps any reduction in size or equipment capabilities that may be gained. (*Ibid.*).

In the design of structures and equipment, it is convenient in typical engineering analyses to assure that all elements of the structure or equipment remain elastic or nearly so, i.e., stresses below the yield point of the material so that any permanent deformation is very small. One of the principal reasons for this is that the maintenance of elasticity negates the need for complex interaction analyses to determine margin to failure. From the standpoint of function, major structures, and components in nuclear plants, as well as in other commercial applications, can tolerate much inelastic deformation and typically loss of numerous structural members. This deformation and loss of structural members can be sustained because of redundancy, i.e., more than one path available to carry loads and load sharing or redistribution, i.e., the load formerly carried by a failed member is redistributed to other members. (Knight Testimony at 4).

The end result of the conservatism employed in the analyses followed by the conservatism resulting from standard design practices is a structure with a seismic capability well in excess of the established design goal. This is the reason that the record is replete with cases where well-engineered structures, even those for which no specific seismic design standard was invoked, have withstood major earthquakes while remaining fully functional. (*Ibid.*) The testimony above spoke of the numerous conservatisms accruing as a result of the use of standard structures, shapes, sizes, and materials. A very analogous phenomena occurs in the testing of the equipment and components. In order to assure fully representative testing with respect to both direction and characterization of vibratory input, a given piece of equipment is subjected to a large number of individual tests, any one of which often equals or exceeds the most likely vibration to be seen by the equipment in any actual earthquake. The number of tests typically range from 10 to 50 before a program for an individual piece of equipment is completed. In this way the question of aftershock or marginal performance of prototype equipment that may not be fully characteristic of installed equipment is adequately addressed. Clearly, the history of vibratory loading established during the test program

exceeds even the most pessimistic view of possible effects of aftershock loading. Any concern that some fatal flaw that may hinge on a subtlety in fabrication or installation may not be discerned by a single shaking has to be put aside. In addition to the number of tests employed, the magnitude of tests, once again, due to the practicalities of designing tests equipment to meet myriad test requirements, always exceeds that required (already conservatively defined by virtue of the structural analyses). (Knight Testimony at 5).

The Hosgri seismic evaluation considered and has established the capability of all Diablo Canyon structures, systems, and components designated as Design Class I, which corresponds directly to "Category I" as originally used in Safety Guide 29. Safety Guide 29 was subsequently reissued as Regulatory Guide 1.29, which, in turn, was subsequently revised twice. The Diablo Canyon classification system also meets the intent of the latest revision of this regulatory guide. In some instances, since Diablo Canyon structures, systems, and components were assigned seismic design classification prior to the issuance of definitive guidance by the Regulatory Staff, some systems and components were classified as Design Class I which would not be required to be designated Category I by current regulatory practice. Certain structures, such as the turbine building, which were not designated as Design Class I but whose failure could affect the functioning of Design Class I structures, systems, and components have been treated as Design Class I for the purposes of the Hosgri seismic evaluation. Set forth in greater detail in witness Hoch's testimony are the structures, systems, and components considered in the Hosgri seismic evaluation, the criteria and methodology employed, the tests and analyses made and the manner in which concurrent functional operational and accident-induced loads were taken into account. (Hoch Testimony at 15-21).

Concerning Contention 7, for Diablo Canyon structures the acceptance criteria employed in the Hosgri seismic evaluation allowed stresses or strains beyond yield only in very limited situations and under conditions where such yielding could not affect the performance of necessary safety functions. Only in a very few locations in Diablo Canyon structures did the results of the Hosgri seismic evaluation indicate stresses beyond the yield point of the material. These included the curtain wall of the intake structure, localized end bents of the turbine building if a crane is parked at either end of the building, and certain piers beneath the main turbine generators. The associated deformations were evaluated to assure that all necessary safety functions are maintained. (Hoch Testimony at 21, 22; Tr. 6917).

For those components qualified by test for the postulated Hosgri event, functionality was demonstrated during the test as well as after the test if such functionality was required in order for the component to perform its intended safety function. For equipment qualified by analysis which must move, open or close, pump fluids, or otherwise perform an active safety function when subject to seismic loadings, special criteria were developed and applied to

assure that deformations as a result of seismic loadings would not prevent performance of the active safety function. (Tr. 6919-6921). For certain Diablo Canyon components, such as piping systems, the acceptance criteria for stresses employed in the Hosgri evaluation were in accordance with accepted industry codes and standards. For loading combinations associated with accepted industry codes and standards. For loading combinations associated with a Safe Shutdown Earthquake, these acceptance criteria do, indeed, allow calculated stresses (or strains) beyond the yield point of the material. These codes and standards, and the stresses allowed, are drawn from extensive experience with the piping systems and materials involved and are specifically formulated to assure that when stresses calculated by code approved methods are at or below allowable, the necessary integrity of the piping system will be maintained. (Hoch Testimony at 22, 23).

Wherever the Hosgri seismic evaluation showed that stresses or strains beyond the yield point would be calculated for loading combinations related to the postulated Hosgri event, all necessary safety functions will be maintained and the plant complies with all applicable NRC Rules and Regulations, including that portion of Section (VI)(a)(1) of Appendix A to 10 CFR Part 100 related to Intervenor's contentions. (Hoch Testimony at 23).

Evidence was presented to support the conclusion that the structures, systems, and components will perform as required during the postulated earthquakes, i.e., they will remain functional and within applicable stress and deformation limits when subjected to the effects of the vibratory motion of the postulated Hosgri event, including appropriate concurrent loads. The Design Class I structures include the containment structure, the auxiliary building, and the outdoor storage tanks. The Design Class II structures containing Design Class I components include the turbine building and intake structure. (Ghio Testimony following Tr. 6941 at 1-3, 8-10).

Witness Ghio reviewed the procedures followed in establishing the original seismic design of the plant using postulated earthquakes and criteria approved by the Atomic Energy Commission with the issuance of construction permits for the units. Mr. Ghio then summarized the seismic evaluation of the plant for the postulated 7.5M Hosgri earthquake and various intermediate postulated earthquakes and the criteria developed to effect his. Documentation for this evaluation was set forth in the Hosgri Report. In April 1976 the NRC Staff issued Supplement No. 5 to the SER, which included response spectra independently derived by Dr. N. M. Newmark, the rationale for their development as well as the parameters to be used in the foundation filtering calculations for each major structure. Supplement No. 5 prescribed that either the spectra developed by Blume or Newmark would be acceptable with the following conditions:

- (i) In the case of the Newmark spectra, no reduction for nonlinear effects would be taken except in certain specific areas on an individual case basis;

- (ii) In the case of the Blume spectra, a reduction for nonlinear behavior using a conservative factor may be employed;
- (iii) The results determined by use of the Blume spectra would be adjusted so as not to fall below the results determined by use of the Newmark spectra at any frequency. (Ghio Testimony at 10-14).

Mr. Ghio explained that the basic approach used in the Hosgri evaluation of structures adopted the same analytical procedures and criteria which were employed for the original seismic analysis, with the following specific changes:

1. Use of the new 7.5M on Hosgri inputs.
2. Use of Regulatory Guide 1.61 damping.
3. Use of actual material properties (excluding allowance for concrete gain in strength with age).
4. Allowance for ductility in certain cases.
5. Use of fixed base mathematical models.
6. Vertical response dynamic analysis or equivalent.
7. Use of accidental torsion or equivalent in addition to geometric torsion.
8. Modified procedure for smoothing floor spectra.
9. Combination of horizontal and vertical responses on 3-component square-root of the sum of the squares basis (or equivalent). (Ghio Testimony at 14, Tr. 6945; 6946.

The containment structure has been qualified, with minor modifications which have been implemented, for the postulated Hosgri earthquake. Likewise, the auxiliary building, with modifications to improve the seismic shear distribution in the fuel handling area, qualifies the structure for the Hosgri event. The Design Class I outdoor water storage tanks required significant modifications to permit them to resist the Hosgri earthquake. Similarly, the turbine building required substantial structural modifications to resist the Hosgri event. The intake structure has been found capable of resisting the Hosgri earthquake without sustaining any damage that would impair the functioning of the auxiliary saltwater pumps. (Ghio Testimony at 3-8; Tr. 6943, 6944). Subsequent panels presented detailed information concerning the modifications of these various structures: containment (Ghio-Malik Testimony at 1-8; Tr. 6994-7031, 7040-7125); auxiliary building (Ghio-Malik Testimony following Tr. 7130 at 1-6; Tr. 7131-7174); turbine building (Ghio-Malik Testimony following Tr. 7181 at 1-6; Tr. 7182-7219); intake structure (Ghio-Lang Testimony following Tr. 7224 at 1-4; Tr. 7225-7269); outdoor water storage tanks (Ghio-Jhaveri Testimony following Tr. 7285 at 1-

4; Tr. 7287-7309, 7404-7419); and buried tanks and piping systems (McLaughlin-Lawson Testimony following Tr. 7324 at 1-4; Tr. 7325-7352).

Similar evidence was presented concerning the integrity of plant mechanical and electrical systems in the event of a Hosgri earthquake to assure:

- (i) the integrity of the reactor coolant pressure boundary
- (ii) the capability to shut down the reactor and maintain it in a safe condition, and
- (iii) the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of 10 CFR 100.

The following general classes of components were included in the Hosgri requalification: reactor coolant system; auxiliary mechanical equipment; piping systems other than the reactor coolant piping; and electrical equipment. The process that was used for the requalification of the mechanical and electrical equipment for the Hosgri earthquake was broken down into seven basic steps:

1. Identification of systems requiring evaluation.
2. Definition of the functional requirements of the equipment within the required system.
3. Determination of the seismic input to the required system.
4. Establishment of the criteria for evaluation.
5. Establishment of the methodology of the evaluation.
6. Perform the evaluation, determine the need for modification.
7. Make modifications where required.

Each of these steps in the requalification process will be described in more detail below. (Gormly Testimony following Tr. 7449 at 1-3; Tr. 7450, 7451).

As discussed in Mr. Ghio's testimony, seismic response spectra for all relevant locations in those structures significant to the plant were developed by URS/John A. Blume & Associates. These spectra are contained in Chapter 4 of the Hosgri Report and provided in the seismic input for the qualification of the equipment of concern. To determine the systems requiring evaluation, those required for plant shutdown were identified first. Next, the systems and procedures required to achieve and maintain hot shutdown and long-term cold shutdown conditions after the postulated seismic event were evaluated. This evaluation was consistent with Regulatory Guide 1.29 and was done assuming that:

1. only systems qualified for the event would be available;
2. the single failure criterion would be satisfied;
3. off-site power may be lost for an extended period of time.

A tabulation was then made of the equipment and components comprising those systems and the functions that the equipment was required to perform. This included a determination of whether components were passive or were required to mechanically function during or following the postulated seismic event. Also, piping systems which were required to retain their structural integrity were identified. Equipment not required for shutdown but which would be categorized Category I by current regulations was further identified. Stress criteria were developed for various components. For components which were required to perform a mechanical function in addition to retaining their structural integrity, additional criteria were developed. The appropriate criteria were established in conformity with the applicable industry codes and standards as required by 10 CFR 50.55a. The criteria for mechanical equipment and piping were taken primarily from the ASME Boiler and Pressure Vessel Code and the criteria for electrical equipment were taken from IEEE standards. After the equipment and systems of concern were identified and specific criteria were fixed for such equipment and systems, the specific evaluation commenced. The evaluation was accomplished by either detailed seismic analyses, seismic testing (shaking), or a combination of analyses and testing. The details of the analyses or tests performed for this equipment can be found in Chapters 5 through 10 of the Hosgri Report. The results of the analyses and/or tests were then compared to the criteria developed for acceptability. For instance, the results of a seismic analysis would define the stresses developed in the component from the postulated seismic event. These seismic stresses were then combined with other stresses which would be caused by normal operation or, where appropriate, stresses that would be caused by design basis events. The total stress was then compared to the stress criteria. Where the stresses exceeded the stress criteria, an evaluation was made as to the action required to satisfy the stress criteria, such as equipment modification or replacement. (Gormly Testimony at 2-5; Tr. 7452-7467).

In general, the major area where significant plant modifications were required by the requalification was in the piping systems. As a result of stress analyses, modifications have been made to at least 900 of the approximately 5,000 pipe supports, the remaining 4,100 not requiring modification (Tr. 7679). These modifications range from a minor stiffening of the support to complete replacement. In no instance was it necessary to modify or replace the piping itself. In addition to the piping system modifications, some modifications were required for approximately 50 percent of the above-mentioned tanks and heat exchangers. These modifications were generally

minor and were related to increasing the support capacity. Other modifications were made in various electrical components in the plant. (Gormly Testimony at 6). Detailed evidence concerning the analyses and modifications, if necessary, of various systems and components was offered covering plant systems (Gangloff Testimony following Tr. 7471 at 1-8; Tr. 7472-7484); the reactor and reactor coolant system (Esselman Testimony following Tr. 7548 at 1-8; Tr. 7549-7586); auxiliary mechanical equipment (Esselman-Antiochos Testimony following Tr. 7589 at 1-6; Tr. 7590-7657); other piping systems (Bacher-Esselman Testimony following Tr. 7660 at 1-7; Tr. 7661-7679); and electric equipment and instrumentation (Esselman and Young Testimony following Tr. 7686 at 1-8; Tr. 7687-7692).

With regard to the reactor and reactor coolant system, the analysis demonstrated the ability of the reactor and reactor coolant system to withstand the postulated Hosgri event coupled with a simultaneously occurring postulated pipe break in the main reactor coolant piping. The NRC Staff required that the stresses or loads resulting from the postulated pipe rupture. The results of the combination of the stresses and the overall stress summary are presented in Appendix F of the Hosgri Report. This appendix demonstrates the acceptability of the reactor coolant system. It is important to note that the allowable stresses used are determined by various Codes and Standards groups to assure the structural integrity of the structure or component. Thus, as long as the stresses are determined to be equal or less than allowable, there is ample margin in the design of the system. The acceptance criteria used provide substantial additional margin to failure. (Esselman Testimony at 4-5).

The reactor fuel for Diablo Canyon, described in Chapter 4 of the FSAR, could conceivably be affected by the postulated seismic event combined with the loss of coolant accident. As a result of a seismic event, the motion input to the fuel would cause impact loads on the fuel grids. The fuel grids are spacer elements which maintain the spacing of the fuel rods to permit adequate cooling. Dynamic testing was performed on the grids to determine the load at which they would first experience permanent deformation. Loads from the seismic event and the worst postulated loss of coolant individually and combined, are below the allowable grid strength. This provides assurance that the fuel grids will not deform and that the geometry for adequate cooling will be maintained following the postulated Hosgri event and a concurrent loss of coolant accident. The NRC Staff did, however, request that fuel grid deformation be postulated. Assuming fuel grid deformation, the resultant modification geometry of the grid was used in an ECCS analysis. It was demonstrated that with the postulated maximum credible deformation of the grid, the core would remain coolable. The fuel was, in short, shown to be acceptable by two different methods:

- (i) The calculated loads indicated that deformation of the fuel grid would not occur; and

(ii) even if the postulated maximum credible deformation occurred, that the core would remain in a coolable geometry.

Accordingly, the entire reactor coolant system has been shown to be fully acceptable for the postulated seismic event and the unlikely simultaneous occurrence of a postulated pipe break event. Thus the integrity of the reactor coolant pressure boundary is assured. (Esselman Testimony at 5-7; Tr. 7571-7576, 7582, 7583).

At various stages in the presentation on mechanical systems and components, questions were asked of PG&E and Staff witnesses concerning simulated aging. It developed that the updating to current criteria required by the NRC Staff did not include simulated aging and other general environmental qualification recommendations reflected in the Staff's current position for new plants. (Tr. 7461, 7463, 7648, 7845, SER Supp. 7 pp. 3-72). It was pointed out that aging need not be considered for the reactor coolant system and auxiliary mechanical equipment because those materials do not age. (Tr. 7578-7580, 7583, 7584, 7641-7646, 7648). It was also pointed out that aging of such equipment is taken care of automatically through such measures as designing against corrosion or other degradation. (Tr. 7646, 7647). Finally, most of the remaining power plant components in question are not unique to nuclear power plants and a lengthy record of preventive maintenance to offset the effects of aging for the life of the plant has been developed through the years at fossil-fueled stations (Tr. 8790).

Intervenors offered testimony on Contentions 5, 6, and 7 through their witness Richard B. Hubbard. (J.I. Ex. 65). As with his testimony on the operating basis earthquake, much of his testimony was struck as being beyond the expertise of the witness. (Tr. 7888-7893). Of the testimony remaining, there were allegations that there is no record that the effects of aging have been considered in the seismic qualification of electrical equipment and that using a shaker table may have introduced common failure modes not readily detectable. (J.I. Ex. 65, pp. 5, 6, 7-8). However, on cross-examination, Mr. Hubbard admitted that the IEEE standard which refers to aging was not issued until 1974 and that the prior version of the IEEE standard, issued in 1971, did not have a requirement for simulated aging. (Tr. 7895, 7896). He also admitted that the effects of aging could be determined through periodic testing and inspection. (TR. 7899, 7900). As far as the use of the shaker tables is concerned, Mr. Hubbard admitted that the absence of such testing of the plant components would give rise to uncertainties, different uncertainties, than if the components were so tested. (Tr. 7913-7916). An NRC Staff witness testified that equipment must be qualified both during and after the simulated event and that, accordingly, PG&E was required to inspect and test the equipment to demonstrate functional operability after the test. In addition, the Staff took one more step than ordinarily required by requesting PG&E to install strain gauges on some of the equipment to measure stress incurred

during the test and possible fatigue. The data indicate that the structural integrity of the equipment will not be affected by possible fatigue due to the shaker table testing and therefore it is acceptable to return the equipment to the plant. (Tr. 8711, 8713; 8813-8816). Another NRC Staff witness pointed out that in all cases only one of a redundant set of equipment was so tested. (Rosa Testimony, p. 8).

NRC Staff review of the structures, systems, and components of the Diablo Canyon Plant was described in the SER Supplements 7 and 8 and in testimony by a panel led by Mr. James P. Knight. (Testimony following Tr. 8697). Mr. Knight explained the methods and procedures followed by the Staff in reviewing the facility for the Hosgri event, and he described the major modifications made to the existing plant facilities to qualify them for the Hosgri event. He concluded as follows:

The Staff review of the seismic design of the DCNGS has been the most extensive we have ever undertaken. This review had extended from the basic input criteria employed through the details of myriad analyses to the implementation in final design. Our goal throughout the review had been to assure that demonstrably conservative practices were followed at each level of design. We believe that this goal has been fulfilled in all aspects of the DCNGS reevaluation, including confirmatory analyses and tests, design of modifications, and the establishment of operating restrictions where necessary. It is our conclusion, therefore, that the structures, systems, and components necessary at the DCNGS to assure the health and safety of the public will remain functional under the loading that would result from any seismic event of severity up to and including that specified for the Hosgri event.

Testimony as to the seismic qualification of the Class I electric equipment was presented by NRC Staff witness Faust Rosa. (Testimony following Tr. 8748). He also testified concerning aging, noting there previously had been no such requirement but that did not make nuclear plants unsafe because there are other things going on continuously that would reveal the effects of age, such as seismic testing and normal maintenance. (Tr. 8785, 8786). The Staff, nevertheless, is conducting research programs and a systematic evaluation of older operating reactors to better determine the significance of aging in qualification testing. This subject will be reassessed by the Staff before natural aging could have any significant effect on the seismic qualification of equipment installed at Diablo Canyon. (Rosa Testimony at 6-7). It was also pointed out that there is nothing unique about most of the equipment in a nuclear power plant and that a wealth of experience exists with this equipment

in facilities around the world which have been in existence the past ten, twenty or more years (Tr. 8790).

The Staff review of the seismic design of the Diablo Canyon plant was the most extensive ever undertaken by the Staff of the NRC. (Knight Testimony at 54). The Applicant's review was also extraordinarily thorough.

The Board finds that the Applicant has demonstrated through appropriate analysis and tests that Category I structure, systems, and components will perform as required during the seismic load of the safe shutdown earthquake.

The Board finds that the Category I structures, systems, and components will be adequate to assure (a) the integrity of the reactor coolant pressure boundary, and (b) the capability to shut down the reactor and maintain it in a safe condition.

The Board finds that the evidence demonstrates that all structures, systems, and components of the Diablo plant necessary for continued operation without undue risk to the health and safety of the public will remain functional and within applicable stress and deformation limits when subjected to the effects of the operating basis earthquake in combination with normal operating loads.

The Board finds that the necessary safety functions will be maintained during the safe shutdown earthquake where, in safety-related structures, systems, and components, the design for strain limits is in excess of the yield strain.

IV. THE SECURITY PLAN REVIEW

Intervenors, San Luis Obispo Mothers for Peace, through other counsel also advanced a contention covering various ways in which PG&E's security plan allegedly fails to conform to NRC regulations. Due to the inability to produce a qualified expert as mandated by the Appeal Board in ALAB-410, Intervenors in a letter dated January 19, 1979, withdrew from the proceeding, and the Board accepted the letter as a voluntary default under 10 CFR 2.707. (Tr. 9367-9368). The Applicant and Staff requested the Board to proceed with a review of the security plan and the Board acquiesced. At a special *in camera* session before the Board on Monday, February 12, 1979, Staff and Applicant presented evidence that PG&E's security plan in fact complies with all applicable NRC Regulations. On the same date, the Board members together with Applicant and Staff counsel and witnesses also toured the Diablo Canyon plant to view the security system and components. Based upon the evidence presented the Board finds that the PG&E security plan complies with all applicable NRC regulations. Because of the sensitive nature of this evidence, it will not be further reviewed in this Partial Initial Decision.

In this Partial Initial Decision there can be no Conclusions of Law or Order. The Board has determined that it is appropriate to remind the parties that the Appeal Board may entertain exceptions to this Partial Initial

Decision. If that is the case, exceptions may be filed by any party within 10 days after the service of this Partial Initial Decision. A brief in support of the exceptions should be filed within 30 days thereafter (40 days in the case of the Staff). Within 30 days after the service of the brief of appellant (40 days in the case of the Staff) any other party may file a brief in support of, or in opposition to, the exceptions.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

William E. Martin, Member

Glenn O. Bright, Member

Elizabeth S. Bowers, Chairman

**Dated at Bethesda, Maryland
this 27th day of September, 1979.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**PORTLAND GENERAL ELECTRIC
COMPANY**

**Docket No. 50-344
(10 CFR 2.206)**

(Trojan Nuclear Power Plant)

September 10, 1979

The Director of Nuclear Reactor Regulation denies in part petition under 10 CFR 2.206 requesting immediate, emergency relief. Further consideration of the petition is held in abeyance pending the Commission's decision on petitions filed by the Union of Concerned Scientists.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated May 17, 1979, Nina Bell and Eugene Rosolie, on behalf of the Coalition for Safe Power (Coalition) requested that the Nuclear Regulatory Commission order shutdown of the Trojan Nuclear Power Plant. This petition was filed pursuant to 10 CFR 2.206 of the Commission's regulations.

The asserted bases for the request by the Coalition are that deficiencies exist with respect to fire protection and environmental qualification of electrical equipment.

The issues raised by the Coalition are generic in nature and directly related to those raised by the Union of Concerned Scientists in its November 1977 and May 1978 petitions. The Commission is now in the process of preparing a final Memorandum and Order in that proceeding.

The Coalition is correct in its statement that neither the NRC Staff Safety Evaluation Report dated October 7, 1974 nor its supplement dated November 21, 1975 addressed the environmental qualifications of electrical equipment. Notwithstanding this omission, these components were reviewed by the Staff and the Staff is not aware of the presence of any unqualified electrical equipment. However, the pressure transmitters, while qualified for their safety trip function, have not been found qualified for long term monitoring. Accordingly, the licensee has provided an acceptable alternate means to obtain the long term monitoring information in the form of pressure and differential pressure transmitters in the auxiliary building located outside containment. In addition, in response to IE Bulletin 79-01, PGE has

reexamined the environmental qualification of all safety-related electrical equipment, and submitted this information in letters of June 12, 1979 and June 15, 1979 to Mr. R. H. Engelken, Director, NRC Region V. These submittals are in the process of being reviewed.

Based on the foregoing discussion, I have determined that no adequate basis exists at this time for ordering shutdown of the Trojan Nuclear Power Plant. The request for the Coalition for Safe Power for immediate action is hereby denied. Further consideration of the Coalition's petition will be held in abeyance pending the Commission's decision in the UCS proceeding.¹

A copy of this determination will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and the local Public Document Room for the Trojan Nuclear Power Plant located at the Columbia County Courthouse, Law Library, Circuit Court Room, St. Helens, Oregon 97051. A copy of this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR Section 2.206(c) of the Commission's regulations.

In accordance with 10 CFR Section 2.206(c) of the Commission's Rules of Practice, this decision will constitute the final action of the Commission twenty (20) days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 10th day of September, 1979

¹ This is in accordance with the Secretary of the Commission's July 31, 1979 memorandum to the Director which stated: "The Commission requests that you determine if this petition contains any information indicating that immediate action is needed at the Trojan plant, as distinguished from generic actions which may result from the Commission's final determination in the UCS proceeding. The petitioner should be informed of the results of this inquiry. If it is found that no immediate action is warranted, petitioner should be informed that further consideration of its petition will be held in abeyance pending the Commission's decision in the UCS proceeding."

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

Victor Stello, Jr., Director

In the Matter of

Operating License No. DPR-36

MAINE YANKEE ATOMIC
POWER COMPANY

(Maine Yankee Atomic
Power Plant)

September 27, 1979

The Director of the Office of Inspection and Enforcement denies request by the State of Maine for the imposition of civil penalties against Maine Yankee Atomic Power Company for alleged violation of requirements governing transportation of new fuel.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letter dated July 13, 1979, John M. R. Paterson, Deputy Attorney General of the State of Maine, requested on the State's behalf that the Nuclear Regulatory Commission initiate appropriate proceedings to impose penalties against Maine Yankee Atomic Power Company for an alleged violation of the operating license for its Maine Yankee facility (DPR-36). The incident which the State submits constituted a violation of Maine Yankee's operating license involved the shipment of new (unirradiated) fuel from Kittery, Maine, to the facility site via U.S. Route 1 rather than via the Maine Turnpike and Interstate 95. The State of Maine believes that "Maine Yankee's permit requires, in a condition expressly requested by the State and agreed to by the licensee during the Operating Permit Proceedings, that truck shipments of fuel and waste products to or from the plant must be made via the Maine Turnpike and Interstate 95 to points closest to Wiscasset, Maine." This request for the imposition of penalties has been treated as a request for action under 10 CFR 2.206 of the Commission's regulations.

Based upon the information contained in the request, a review of Maine Yankee's license requirements concerning the shipment of new fuel to this facility was conducted. The results of our review indicate that no part of this license establishes a requirement which stipulates a route over which new fuel is to be shipped.¹

This shipment of new fuel was subject to packaging requirements set forth in 10 CFR Part 71 of the Commission's regulations. The safety of transportation of radioactive materials is regulated jointly by the Nuclear Regulatory Commission and the Department of Transportation, who cooperatively partition their regulatory activities by means of a Memorandum of Understanding² to avoid unnecessary duplicative regulation. Under the NRC's regulations, the safety of the transportation of radioactive material is assured by setting standards for package integrity (under normal and accident conditions), reviewing and approving accident package designs for satisfaction of these standards, and inspecting and enforcing compliance with

¹ During the proceeding before the Atomic Safety Licensing Board conducted prior to the issuance of an operating license for the Maine Yankee facility, the State of Maine did request that some sort of controls over the route selected for the transportation of nuclear materials to and from the facility be imposed. However, this request was denied. 6 AEC 465, 473 (1973). The Atomic Safety and Licensing Appeal Board, upon its review of that initial decision, noted that at least at that point in time (1973), the Maine Turnpike Authority specifically prohibited the use of the Turnpike (the route preferred by the State) for the transportation of nuclear materials. There was no suggestion in the record that the regulations of the Turnpike Authority were in the process of being amended or that the State was then pressing to have the Turnpike open to transport of nuclear materials. Thus, there was no question of a selection among alternate routes. *In the Matter of Maine Yankee Atomic Power Company* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1017-1018 (1973). Consequently, while Maine Yankee Atomic Power Company may have made a commitment during the licensing proceeding to use the Maine Turnpike route when it became available, no condition to that effect has ever been made a part of its operating license.

² *Transportation of Radioactive Materials, Memorandum of Understanding*, Department of Transportation - Nuclear Regulatory Commission, 44 *Fed. Reg.* 38690 (July 2, 1979).

the regulations. The NRC in a recent reexamination of its transportation regulations and environmental assessment of the radiological risks from transportation of radioactive materials concluded that the health and safety of the public is adequately protected by this regulatory approach.³ This study concluded that the risk associated with transportation of radioactive material is very low, is well within established national guidelines and is very small in comparison to other risks accepted by the general public, such as accidents involving motor vehicles and death associated with electric shocks.⁴

For the foregoing reasons, no NRC enforcement action will be initiated as a result of this shipment of fuel to the Maine Yankee facility.

A copy of my determination in this matter will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and the local public document room for the Maine Yankee facility at Wiscasset Public Library, High Street, Wiscasset, Maine 04578. A copy of this determination will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motions institutes review of this decision within that time.

Victor Stello, Jr., Director
Office of Inspection and Enforcement

Dated at Bethesda, Maryland
This 27th day of September, 1979

³ "Final Environmental Statement on the Transportation of Radioactive Materials by Air and Other Modes," NUREG-0170, Vol. 1, *Summary & Conclusions*, pp. iii-xxv, (Dec. 1977).

⁴ See, Final Environmental Statement, *supra*, at p. vii, Table 3-7 at p. 3-13; Table 5-16 at p. 5-53. A preliminary report on a current study of the transportation of radioactive materials through densely populated areas in urban environments, "Transport of Radionuclides in Urban Environs: Working Draft Assessment," SAND-77-1927 (May 1978), also concludes that routine exposure from normal transportation in urban areas and expected health effects from potential transportation accidents in urban areas are very small. The study does suggest, however, that sabotage of spent fuel shipments has the potential for producing serious radiological consequences in areas of high population density. Consequently, the Commission has concluded, it is prudent and desirable to require certain interim safeguards measures for spent fuel shipments until the results of confirmatory research are available. See 44 *Fed. Reg.* 34466 (June 15, 1979).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**EXECUTIVE DIRECTOR FOR OPERATIONS****Lee V. Gossick****In the Matter of****Docket No. PRM-20-12****LOUIS RAY URCIUOLO****September 26, 1979**

A petition for rulemaking to the Nuclear Regulatory Commission (NRC) has been denied. The petition requested NRC to amend the definition of "radiation area" in 10 CFR 20.202(b)(2), to require posting as a radiation area for any area that could not meet 10 CFR Part 20 requirements on levels of radiation in unrestricted areas.

TECHNICAL ISSUE: REDUCTION OF RISK TO HEALTH

After careful consideration of the petition and the public comments, the NRC staff has concluded that the petition should be denied, principally because there does not appear to be any reduction in risk associated with the petitioned change. Indeed, there is a potential for unnecessary exposure of workers as a result of less posting that would be needed under the petitioned change.

EXECUTIVE DIRECTOR FOR OPERATIONS DECISION UNDER 10 CFR 1.40(o)

The petition was submitted by a letter dated October 17, 1978, from Louis Ray Urciuolo who requested the NRC to amend its regulations in 10 CFR Part 20, "Standards for Protection Against Radiation." This petition has been denied by the Executive Director for Operations in accordance with 10 CFR 1.40(o).

Mr. Urciuolo indicates that Section 20.105, "Permissible levels of radiation in unrestricted areas," implies that restrictions may be necessary in any area where radiation levels could exceed either 2 millirems in an hour, 100 millirems in 7 consecutive days, or is likely to exceed 500 millirems in a year. He petitioned the NRC to amend the definition of "radiation area." Mr. Urciuolo offers three bases for his petition:

1. Under present requirements, an area may require restriction due to the presence of radiation, but that area may not necessarily be required to

be posted with a warning. Any area which is restricted because of the presence of an increased hazard level should be posted with a sign that will warn or instruct any individual entering the area of the hazard involved. This should be consistent with OSHA 29 CFR 1910.145(a), (b), and (c).

2. This proposition better illustrates the close interrelationship between a restricted area and a radiation area. It simplifies understanding of this interrelationship by removing unnecessary complicating differences between the two definitions.
3. The proposed change would provide, as a byproduct, more complete posting and, thus, be consistent with the spirit of 10 CFR 19.12.

A notice of filing of petition, Docket No. PRM-20-12, was published in the *Federal Register* on November 30, 1978 (43 FR 56108). The comment period expired January 29, 1979. Eight persons submitted comments; five opposed the petitioned change and three favored the change. Those commenting favorably on the petition stated that the differences between the definition of radiation area and the dose rate permitted in unrestricted areas has confused some persons. The NRC staff has concluded that these problems result from failure to understand the relationship between control requirements of 10 CFR Parts 19 and 20. Detailed discussion of these relationships follows. The arguments presented by commenters opposing the petitioned change basically were similar to those of the NRC staff and are set forth below.

Historically Section 20.105 "Permissible levels of radiation in unrestricted areas," was deliberately worded differently from the definition of radiation area set forth in Section 20-202(b)(2). The underlying philosophy was that, because licensees cannot control the activities of individuals in (unrestricted) areas outside of the licensees control, the regulations should be expressed in terms of limitations on the levels of radiation and the concentrations of radioactive material in effluents that licensees may permit to be released to unrestricted areas. These radiation levels and effluent concentrations were derived such that, with assumed probabilities, including full-time occupancy (7 days per week), it would be unlikely that any individual in the population would receive doses greater than 10 percent of the occupational dose-limiting standards recommended by the International Commission on Radiological Protection (ICRP), the National Council on Radiation Protection and Measurements (NCRP), and the Federal Radiation Council (FRC). The FRC function is now part of the responsibility of the Environmental Protection Agency.

The NRC's regulations in 10 CFR Part 20 provide for the control of personnel exposures to radiation and radioactive material through the establishment of five different types of areas with varying degrees of prescribed protection.

There are two basic types of areas, unrestricted and restricted; within

restricted areas there may be radiation areas, high radiation areas, and airborne radioactivity areas.

An unrestricted area is one that is not controlled by the licensee for purposes of radiation protection. However, permissible levels of radiation in unrestricted areas are specified (§20.105, and listed above), as are concentrations of radioactive material that may be released in effluents to unrestricted areas. If one or more of the limits is likely to be exceeded, the affected area must be classified as a restricted area.

A restricted area is any area access to which is controlled by the licensee for purposes of radiation protection. Within a restricted area a graduated scale of protective measures is imposed according to the degree of hazard present. Included in these protective measures are requirements for caution signs for the types of areas mentioned above.

A radiation area is one in which the dose to personnel could exceed 5 millirems in 1 hour or 100 millirems in any 5 consecutive days, and must be posted with a sign or signs bearing the radiation symbol and the words CAUTION - RADIATION AREA. If the dose could exceed 100 millirems in 1 hour, the area must be classified as a high radiation area, must be posted with a sign or signs bearing the radiation symbol and the words CAUTION - HIGH RADIATION AREA, and additional controls imposed.

An airborne radioactivity area is one in which the concentration of airborne radioactive material exceed specified limits. These areas must be posted with a sign or signs bearing the radiation symbol and the words CAUTION - AIRBORNE RADIOACTIVITY AREA. In addition, any area in which radioactive materials exceeding specified limits are used or stored must be posted with a sign or signs bearing the radiation symbol and the words CAUTION - RADIOACTIVE MATERIALS.

In their simplest form, these area designations envision a restricted area, defined for example by a fence for access control, and a building and rooms within posted as radiation areas, high radiation areas, etc. If operations planned by a licensee could result in dose rates outside of the fence that may exceed one or more of the limits established for unrestricted areas (§20.105), the licensee must either modify the operations or the facilities in which they are to be conducted to reduce the dose rates, or take steps to restrict the additional area in which the dose rates may exist. The regulations in 10 CFR Part 20 recognize the practicality of establishing a restricted area and controlling access for purposes of radiation protection at some physical barrier that may be remote from the radioactive material and any associated radiation dose rates. Inside of the restricted area there may exist dose rates above 2 millirems per hour without further required posting until dose rates reach 5 millirems per hours at which time the area must be posted as a radiation area. Inside of the radiation area dose rates may exist above 5 millirems per hours without additional posting until dose rates reach 100

millirems per hour at which time the area must be posted as a high radiation area and other controls imposed.

Posting of areas is only one of the control licensees are required to establish at and within of restricted areas. The individuals entering the licensee's restricted area are to be subject to the licensee's control, must be instructed commensurate with the risk (§19.12, 10 CFR Part 19), must be monitored according to Section 20.202, and the individual's doses maintained as low as is reasonably achievable as well as below the dose-limiting standards specified in Sections 20.101 and 20.104, 10 CFR Part 20. These controls ensure that individuals are aware of their entry into a restricted area. The NRC staff believes that the additional measure of posting signs at the restricted area boundary is unnecessary. As an individual progresses inside of a licensee's restricted area, the regulations provide for progressive levels of posting for radiation areas and high radiation areas and for varying degrees of control by alarms and interlocked devices that prevent entry until the dose rates are reduced or automatically reduce the dose rates present.

If the petitioned changes were made to the definition of radiation area, licensees would be required to post at lower instantaneous dose rates than at present, that is, at 2 millirems rather than 5 millirems per hour. Posting would also be required at lower steady-state dose rates because the petitioned change would specify 100 millirems in any seven rather than five consecutive days, that is at 0.6 rather than 0.8 millirems per hour, even though a majority of workers are on the job five days a week. It would appear that these changes would result in only very small improvement in radiation protection practices and very little or no reduction in radiation doses to workers. Indeed, the petitioned change would be counterproductive for it would have the disadvantage of eliminating the requirement for posting of any warning signs inside of the restricted area until dose rates reached 100 millirems per hour. The NRC staff is concerned that this could result in unnecessary exposure of workers. Further, as noted by persons commenting on the petition, those installations constructed to meet 5 millirems per hour requirements may require structural modifications in order to meet a 2 millirems per hour requirement.

The petitioned amendment to the regulations in 10 CFR Part 20 would require establishment and posting of the restricted area boundary at the point where the dose rate equals that permitted in unrestricted areas. The staff does not consider such action desirable because it would not recognize the practicality of establishing the restricted area at some physical barrier that may be remote from the areas in which radiation dose rates exist, or necessary in view of the other control licensees are required to impose at the boundary of the restricted area.

The petitioner referred to OSHA's regulations in Section 1910.145, 29 CFR 1910, that call for the provision of warning signs to "define specific hazards of a nature such that failure to designate them may lead to accidental

injury to workers or the public." However, OSHA's specific regulations dealing with ionizing radiation in Section 1910.96, 29 CFR 1910, contain definitions of radiation area, unrestricted and restricted areas, and posting and labeling requirements that are the same as those in 10 CFR Part 20. Therefore, in this area, the NRC's regulations are considered to be consistent with OSHA's regulations.

After careful consideration of the petition and the public comments, the staff has concluded that the petition should be denied, principally because there does not appear to be any reduction in risk associated with the petitioned change. Indeed, there is a potential for unnecessary exposure of workers as a result of less posting under the petitioned change. Further, there is a potential for increase in cost to the industry associated with backfitting facilities, changing present posting, and instructing workers as to the significance of the petitioned posting. There is also the recognized cost to the NRC and other regulatory agencies to change their regulations and implement the changes.

In view of the foregoing, the petition for rule making filed by Mr. Urciuolo on October 17, 1978, is hereby denied. Copies of the petition for rule making, the comments thereon, and the NRC's letter of denial are available for public inspection in the NRC's Public Document Room at 1717 H Street, N.W., Washington, D.C.

Dated at Bethesda, Md. this 12th day of September, 1979.

FOR THE NUCLEAR
REGULATORY COMMISSION

Lee V. Gossick
Executive Director for Operations

(NOTICE PUBLISHED IN THE FEDERAL REGISTER ON
SEPTEMBER 26, 1979, 44 FR 55445)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**HOUSTON LIGHTING AND
POWER COMPANY**

Docket No. 50-466

**(Allens Creek Nuclear Generating
Station, Unit 1)**

October 1, 1979

Following its earlier dismissal of an appeal filed by an intervention petitioner as an impermissible interlocutory one, the Appeal Board comments on the procedure established by the Licensing Board for dealing with pending intervention petitions and proposed contentions.

RULES OF PRACTICE: INTERVENTION PETITIONS

The Rules of Practice relating to intervention petitions do not deal explicitly with the filing of either objections to contentions or motions to dismiss them and are not instructive as to what kind of an opportunity to be heard in response must be provided the proponent of the contention. Although it is up to each presiding board to fashion a fair procedure for dealing with such objections to contentions as are filed, the cardinal rule, so far as fairness is concerned, is that each side must be heard.

RULES OF PRACTICE: INTERVENTION PETITIONS

Before accepting any suggestion that a contention should not be entertained, a Board must give the proponent of the contention some chance to be heard in response.

MEMORANDUM

A few days ago, presented with an appeal filed by a petitioner for intervention, we became involved in this construction permit proceeding once

again.¹ That appeal—which we dismissed as an impermissible interlocutory one²—involved the timing of the filing of contentions by intervenors and petitioners for intervention.³ In reviewing the record to put that appeal in context, we necessarily became aware of the extraordinarily large number of intervention petitions that have been filed. We also became familiar with the manner in which the Licensing Board had handled matters thus far and with the procedures it has established for the future.

Although our concern may be unjustified, one aspect of the Board's plans appears sufficiently troubling that we feel compelled to comment upon it now. Ordinarily, of course, we will not intercede, even when asked to do so by a party, at the prehearing stages of a proceeding, particularly where a matter related to scheduling is involved.⁴ But an unusual—perhaps unique—combination of circumstances is present here. The matter which concerns us is central to charting the future course of the proceeding and affects whether all, or nearly all, of the large number of prospective intervenors and their contentions are dealt with fairly.⁵ If handled incorrectly, the matter has the potential for extraordinary mischief, yet just a few “words to the wise” can insure that all problems are avoided. In short, by speaking up now we are not signifying any change in our fundamental policy against interfering in matters that can almost invariably be left to the Licensing Board to handle (subject only to an appeal at the end of the case).

1. The Licensing Board had scheduled a special prehearing conference to begin on October 15, 1979.⁶ Among the principal matters to be taken up, it

¹ Previously, we had issued a series of decisions involving, *inter alia*, the scope of the public notices reactivating this proceeding and their impact upon petitions for intervention. See ALAB-535, 9 NRC 377 (April 4, 1979); ALAB-539, 9 NRC 422 (April 23, 1979); and ALAB-544, 9 NRC 630 (May 3, 1979). See also ALAB-547, 9 NRC 638 (May 8, 1979).

² ALAB-564, 10 NRC 451 (September 19, 1979).

³ For purposes of this opinion, there is no need for us to distinguish between (1) those who have already been allowed to intervene and (2) those whose status is still that of petitioners for intervention. For convenience, we will refer to both groups collectively (but somewhat inaccurately) simply as “intervenors.”

⁴ See, e.g., ALAB-564, *supra*, and cases there cited; see also *Pennsylvania Power and Light Company* (Susquehanna Units 1 and 2), ALAB-563, 10 NRC 449 (September 19, 1979).

⁵ See *Public Service Company of Indiana* (Marble Hill Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977): “Almost without exception in recent times, we have undertaken discretionary interlocutory review only where the ruling below either (1) threatened the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affected the basic structure of the proceeding in a pervasive or unusual manner.” (footnote omitted, emphasis added).

⁶ See 10 CFR 2.751a. The complexity of the proceeding and the importance of the conference can be seen from the Board's having indicated it may last an entire week. See its August 6th Scheduling Order and September 13th Supplemental Order. With well over fifty intervention petitions pending, this is not surprising. But it helps explain why we do not want any avoidable error to infect the conference.

appears, are the large number of pending intervention petitions and proposed contentions. In that regard, the Board established September 14th as the final date for the filing of contentions. In setting that date, the Board cut back the time normally allotted by the rules.⁷ Its purpose in doing so seems to have been to allow time for the applicant and staff to take a position, in writing, on the acceptability of the intervenors' contentions in advance of the conference.⁸

Although such a procedure is not specifically sanctioned by the Rules of Practice,⁹ we have no essential difficulty with it. To the contrary, particularly where a large number of intervenors are involved (many with a long list of contentions), it makes a good deal of sense to structure the proceeding so that all participants know, before they arrive at the conference, what position the proponents of the plant are taking on the various contentions.¹⁰

2. The difficulty we have with the Board's plans concerns its admonition that, except to the extent the Board asks them to respond to questions, the intervenors "will not be permitted to present oral argument in support of" the contentions they have advanced. September 13th Supplemental Order, p. 2. To be sure, this ruling appears to have been made largely in response to a particular motion (see fn. 2 of the Board's order), and perhaps what we go on now to say is the result of our taking it out of context or attributing to it a scope beyond that intended.⁴⁴ Or it may be that the Board simply wants all argument in support of contentions to be presented in writing following the conference (*see fn. 10*). But if in fact it intends to rule on the admissibility of

⁷ See ALAB-564, *supra*.

⁸ See August 6th Scheduling Order, p. 2. At this point, we should make clear that when we refer in this opinion to the "acceptability" or "admissibility" of a contention (or use similar language), we are dealing with whether the contention is appropriate for further consideration in the proceeding. A ruling that a contention is valid for this purpose does not, of course, imply that substantively it is meritorious. For this reason, that the applicant and staff believe that a contention lacks merit does not of itself constitute grounds for dismissing it. In this regard, see fn. 16, *infra*.

⁹ The Rules do allow boards generally to alter time periods for good cause. 10 CFR 2.711(a).

¹⁰ The Rules do not seem to deal explicitly with the filing of objections to contentions. Under the format laid down by the Rules, however, if contentions are not filed until 15 days before the conference, then the applicant and staff would likely not be able to state until the conference itself which contentions they thought to be inadmissible. We recall that, when circumstances like that arose in the past, licensing boards sometimes felt compelled—particularly if they thought the element of surprise was present—to let prospective intervenors respond to the applicant's and staff's position in writing sometime after the conclusion of the conference.

¹¹ At least to some extent, the movant was asking in his August 30th paper not only for oral argument on the applicant's and staff's objections to contentions (which the Board denied and which is the subject of this opinion), but also for leave to adduce "additional support" for those contentions. In this regard, nothing we say here is intended to apply to an intervenor's attempting, for example, to amend his contentions or to advance new bases for them which could have been submitted earlier. Such substantive alterations of contentions, as distinguished from arguments in support of existing contentions, can be done only with leave of the Board; that is a matter within its discretion.

contentions at the conference (or shortly thereafter) without allowing the prospective intervenors to present argument, we see serious problems on the horizon.

The Board justified its ruling with this twofold observation: "Our Rules of Practice do not provide for such oral argument, and the [intervenors] have had ample time within which to prepare their contentions." We do not quarrel with either of those statements. But the conclusion the Board appears to have drawn from them—that it need not afford the intervenors an opportunity to present argument in support of their contentions—does not follow.

To be sure, the Rules do not provide for oral argument in support of contentions.¹² But this is not significant in itself. For the Rules do not in any fashion deal explicitly with the filing of either objections to contentions or motions to dismiss them.¹³ Thus the absence of an explicit procedure for responding to such attempts to eliminate contentions from further consideration is not instructive as to what kind of an opportunity to be heard must be provided the proponent of the contention. It is, then, up to each presiding board to fashion a fair procedure for dealing with such objections to contentions as are filed. Of course, the cardinal rule, so far as fairness is concerned, is that each side must be heard. *Grannis v. Ordean*, 234 U.S. 385, 394 (1914); see also *United States v. Steel Tank Barge H 1651*, 272 F. Supp. 658, 659 fn. 1 (E.D.La. 1967), citing Kelley, "Audi Alteram Partem," 9 *Natural Law Forum* 103 (1964).

We have no doubt that the views of the Board below coincide with ours on the importance of this principle; any difference lies in its application. Where our views may diverge is in our perception of whether a prospective intervenor has been "heard" when he has filed his contentions.

We gather (from its observation that the intervenors will not be heard orally because they "have had ample time within which to prepare their contentions") that the Board may believe filing contentions constitutes a sufficient opportunity to be heard on their admissibility. We think not. We believe that a contention, like a complaint in federal court, is intended to reflect what a party intends to prove on the merits but not an argument as to why his pleading should be entertained over his opponent's as yet unstated objections. Thus, when a defendant moves to dismiss a complaint (see, e.g., Rule 12(b), F.R. Civ. P.), a plaintiff is—and must be—allowed the opportunity to respond to the motion.¹⁴ In this respect, regardless of how it is

¹² Cf. 10 CFR 2.730(d), indicating that it is well within the Board's discretion not to hold oral argument before disposing of written motions. Of course, that same Rule gives the movant's opponent full opportunity before any ruling is made to file a written response to the motion, "stating the arguments and authorities relied on," in addition to other material. See Section 2.730(c), (d).

¹³ See fn. 10, *supra*.

¹⁴ In other words, to use just one example, a complaint in federal court must contain a
(Continued on next page)

denominated,¹⁵ a suggestion by the applicant and staff that a particular contention is inadmissible (e.g., because it constitutes an attack upon Commission regulations) is akin to a motion to dismiss.

By the same token, we believe that at this stage a challenge to a contention is not like an answer to a complaint. An answer is not followed promptly by any ruling by the court, much less one on the validity or merits of the complaint. Rather, an answer simply triggers the process which eventually culminates in resolving the merits (either by summary disposition or following a trial). Thus, no response to an answer is necessary; similarly, if the applicant and staff are content to allow a contention to be accepted for litigation while denying its substance, no response is required and no ruling is necessary until the merits are later brought up.¹⁶ A motion to dismiss, on the other hand, like a challenge to a contention, is followed—after the other side is heard—by a ruling on whether the matter will proceed. Insofar as contentions are concerned, the intervenors must be heard in response because they cannot be required to have anticipated *in the contentions themselves* the possible arguments their opponents might raise as grounds for dismissing them. In this respect too, contentions are like federal court complaints (see fn. 14, *supra*). Compare 10 CFR 2.714(b) with Rule 8(a), F.R. Civ. P.

The conclusion we reach is this. Before any suggestion that a contention should not be entertained can be acted upon favorably, the proponent of the contention must be given some chance to be heard in response.¹⁷

3. Again, we may be unnecessarily concerned about this entire matter. For it is quite possible that, on its own, the Board would have taken all the appropriate steps to assure that the intervenors will be fairly heard in response to any attempts to reject their contentions at the threshold. Consequently, the Board below might justifiably believe that it did not need our assistance. In the peculiar circumstances of this case, however, the risk involved in our stepping in when not necessary is small compared to the adverse consequences that might have attended our not speaking out if it truly were required.

(Continued from previous page)

jurisdictional allegation. But if the defendant argues that jurisdiction is lacking for some reason, the plaintiff is allowed to respond with arguments supporting his statement of jurisdiction.

¹⁵ E.g., as a "response" or "answer" to the contention.

¹⁶ At this stage of a proceeding, the ultimate merits of the contentions advanced are not being debated. See *Duquesne Light Company* (Beaver Valley Unit 1), ALAB-109, 6 AEC 243, 244-45 (1973); *Alabama Power Company* (Farley Units 1 and 2), ALAB-182, 7 AEC 210, 216-17 (1974). Of course, if a contention is inherently lacking in merit or has some other facial deficiency, it can be dismissed now.

¹⁷ These views are somewhat tentative, for necessarily we reached them without benefit of briefing by the parties. Accordingly, we are not directing the Board to take any particular action. Moreover, if the parties wish to try to convince the Board—and ultimately us—that our views are mistaken or that we have overlooked something, they are not foreclosed from doing so.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matters of

**PHILADELPHIA ELECTRIC
COMPANY, et al.**

**Docket Nos, 50-277
50-278**

**(Peach Bottom Atomic Power Station,
Units 2 and 3)**

**METROPOLITAN EDISON
COMPANY, et al.**

Docket No. 50-320

(Three Mile Island Nuclear Station, Unit No. 2)

**PUBLIC SERVICE ELECTRIC AND
GAS COMPANY**

**Docket Nos. 50-354
50-355**

(Hope Creek Generating Station, Units 1 and 2)

**ROCHESTER GAS AND ELECTRIC
CORPORATION, et al.**

Docket No. STN 50-485

**(Sterling Power Project, Nuclear
Unit 1)**

October 11, 1979

The Appeal Board publishes the explanation for its scheduling order entered earlier fixing a uniform date for the submission of the prepared testimony of all parties and the time for the commencement of the consolidated evidentiary hearing on the generic matter of radon releases.

MEMORANDUM

In ALAB-562, 10 NRC 437 (September 10, 1979), all five members of the Appeal Panel assigned to the appeal boards for these now-consolidated

licensing proceedings concluded that a further evidentiary hearing was required on certain aspects of the generic radon releases matter pending in each proceeding. The responsibility for presiding at the hearing was delegated to us, with the notation that, once it had been completed, our colleagues would join in the consideration of the issues to be decided.

As the first step, we conducted a scheduling conference with the parties by telephone on October 2, 1979.¹ The following day, we entered a brief order to the effect that (1) the prepared testimony of the witnesses for each party must be filed and served by January 18, 1980; and (2) the hearing will commence on February 25, 1980 in a location to be later determined.

This memorandum is in explanation of those directives. Although scheduling orders (and the basis for them) generally are of interest solely to the persons concerned with the particular proceeding(s) to which they directly relate, in this instance we found it necessary to pass upon questions of possibly broader significance. For that reason, the memorandum will be published.

1. As reflected by ALAB-562, the active participants in the four proceedings are the applicants (represented collectively by three law firms), the *Sterling* intervenors (represented by Ms. Sue Reinert), the *Peach Bottom-Three Mile Island* intervenors (represented by Dr. Chauncey Kepford) and the NRC staff.² We were told in the course of the conference that each of those parties, with the possible exception of the *Peach Bottom-Three Mile Island* intervenors, will present witnesses at the hearing. Counsel for the applicants and the staff indicated that the prepared written testimony of their witnesses could be filed and served by early November. The *Sterling* intervenors' representative informed us, however, that her single witness—a university professor—would be free to prepare his testimony only during academic recesses; consequently, she stated, it could not be made available prior to January. For his part, the representative of the *Peach Bottom-Three Mile Island* intervenors asserted that, for a variety of reasons, it would be difficult for him to submit prepared testimony (should he elect to do so) any earlier than February. But he did indicate at one point that, at considerable personal

¹ ALAB-562 had indicated that the conference would be held on an earlier date; it was postponed, however, at the request of the representative of some of the intervenors.

² Mr. David Caccia, an intervenor appearing *pro se* in the *Hope Creek* proceeding, did not file a response to the motions for summary disposition filed by the applicants and the staff (which motions were granted in part and denied in part in ALAB-562). In view of that consideration, we inferred that he has no present interest in the matters to be addressed at the upcoming hearing. Accordingly, he was not included in the telephone conference.

In the event that Mr. Caccia should decide upon further reflection that he desires to participate in the hearing, he should so notify us (and the other parties) in writing. The notification is to indicate the nature and extent of the intended participation and must be furnished at least 45 days in advance of February 25, 1980. Additionally, the prepared testimony of any witness which Mr. Caccia might wish to present at the hearing must be filed and served by January 18, 1980 (the deadline applicable to the other parties).

inconvenience, he might be able to complete the task by January.

Following these disclosures, applicants' counsel suggested the establishment of a schedule whereby their testimony and that of the staff would be filed first; a month or so later the intervenors' testimony would be due; and, thereafter, rebuttal testimony might be filed. This suggestion was endorsed by staff counsel. At the same time, however, it was strenuously opposed by the representatives of the intervenors as inherently unfair, on the ground that it would provide the applicants and the staff with an additional opportunity to submit testimony.

We endeavored to convince the intervenors' representatives that, far from being prejudicial, the applicants' proposal would in practical effect inure to their benefit. What seemingly had been overlooked was that the applicants possess the ultimate burden of persuasion on the radon releases issue (*i.e.*, it is incumbent upon them to establish that the environmental consequences of these releases are not such as to tip the NEPA balance against the construction and operation of their proposed facilities).³ Under familiar adjudicatory principles, parties saddled with that burden typically proceed first and then have the right to rebut the case presented by their adversaries. Thus, the question posed by the applicants' proposal was not whether the applicants would be entitled to submit further testimony in response to the intervenors' affirmative evidence; rather it was when the intervenors would obtain access to any such testimony. In this connection, it appeared manifest to us that the intervenors would be materially assisted in their trial preparation if the substance of the applicants and staff rejoinder to their evidence became known to them well before the hearing commenced (instead of, for the first time, after the intervenors' witnesses had concluded their oral testimony). Beyond that, the proposed schedule would enable the intervenors' witnesses to develop their written testimony with at least the direct evidence of the other parties already in hand—another decided advantage.

Notwithstanding these considerations, the intervenors' representatives persisted in their objections. We accordingly decided to reject the proposal and to establish, as the intervenors desired, a uniform date for the submission of all prepared testimony—leaving the applicants and staff free to present at the hearing rebuttal evidence which had not been previously submitted in written form. This decision was reluctantly made, for it is just as evident to us today as it was at the time of the conference that the intervenors' choice was a dubious one even when viewed solely from the standpoint of the furtherance of their own interests. To repeat, we think it virtually axiomatic that any party to an adjudicatory proceeding (as well as the expeditious progress of the hearing itself) will be advantaged if as much as possible of its adversaries'

³ Inasmuch as it supports the applicants' position that the environmental consequences are small, the staff shares that burden.

evidence is disclosed in advance. Because, however, the Rules of Practice do not make specific provision for prepared rebuttal evidence,⁴ we were disinclined to force the applicants' proposal upon the intervenors. Of course, the intervenors will not be in a very good position to complain that they have been unduly surprised by any rebuttal evidence which may be supplied; a claim along that line would have to overcome the short answer that the surprise was entirely of their own making.

In fixing the date for the submission of the prepared testimony of all parties, we took into account the situation which we were told confronts the *Sterling* intervenors' intended witness. With respect to the *Peach Bottom-Three Mile Island* intervenors, we perceive no good cause why the submission of their testimony need be deferred beyond mid-January. We infer from what was said during the conference that, if those intervenors present any testimony at all, it will be furnished by Dr. Kepford himself.⁵ We can take official notice of the fact that Dr. Kepford has had the radon releases issue under study for an extended period of time; presumably, therefore, he has already at his disposal much of the basic information needed to undergird any conclusions he might wish to put forth as a witness for the organizations he represents. Further, it is our impression that, upon request, the staff will supply him with any additional information it has acquired during its scrutiny of the matter which might be useful to him. True, Dr. Kepford claims to be now involved in other licensing proceedings which also require his attention. But any individual undertaking to play an active role in several proceedings which are moving forward simultaneously is apt to find it necessary from time to time to expend extra effort to meet the prescribed schedules in each case. We are satisfied that, all things considered, the three and one half month period provided to Dr. Kepford for the preparation and submission of his testimony is wholly reasonable, if not generous.

2. As previously noted, our October 3 order set a date for the commencement of the hearing but left the location to be determined at a subsequent time.

As a matter of policy (albeit not of statute or regulation), most evidentiary hearings in NRC licensing proceedings are conducted in the general vicinity of the site of the facility involved. The principal factors underlying that policy are, however, absent here. This hearing encompasses four distinct, geographically separated, facilities and no relationship exists between the highly technical questions to be heard and the particular features of any of

⁴ 10 CFR 2.743(b) provides that the written testimony of witnesses is to be served at least 15 days in advance of the hearing session at which that testimony is to be presented. As a general matter, there would be insufficient time for the preparation and submission of written rebuttal testimony prior to the commencement of the session. 10 CFR 2.743(a) makes clear, however, that there is a right to present rebuttal evidence at the hearing.

⁵ Dr. Kepford made no reference to any other potential witness.

those facilities or its site. Indeed, generic matters of this stripe customarily would be considered in a rule-making proceeding, more likely than not convened without reference to the situs of one or another of the reactors which might be affected by the outcome of the proceeding. By contrast, the usual adjudicatory proceeding involves one facility alone and calls for the resolution of at least some plant-specific issues which are likely to be of substantial interest to persons residing in the area.

In short, the governing consideration in determining the place of this hearing both can and should be the convenience of those who will play a direct role in it—*i.e.*, the persons representing the parties, the witnesses and the members of the Board. And it is abundantly clear that, for the overwhelming majority of those individuals, the NRC Public Hearing Room in Bethesda, Maryland, would be the most suitable location by a wide margin. The counsel and the several prospective witnesses for the applicants and the staff are all in the Washington, D.C. area—as are two of the three members of this Board. Moreover, were the hearing to be held in Bethesda, we would be able, prior and subsequent to each day's hearing session, to address other adjudicatory matters requiring our prompt attention. Given the relatively small complement of Appeal Panel members and the likely state of our docket next February, this factor cannot be lightly disregarded.

What has nonetheless prompted our hesitancy to order now that the hearing be held in Bethesda is the assertion of the representatives for both sets of intervenors that the result would be the imposition of an undue financial burden upon them. In their view, the hearing should be set for either Harrisburg, Pennsylvania (which is close to the Three Mile Island facility) or Oswego, New York (in the vicinity of the Sterling site). As they see it, the expense associated with their attendance at the hearing (*e.g.*, lodging and meals) would be considerably less in those cities than it would be in the Washington, D.C. area.⁶

In a nutshell, then, what confronts us is the question whether there is adequate justification for striking the balance of convenience in favor of the few rather than the many.⁷ Our inclination is to hold that there is not. Lacking a contrary indication, we must assume that the intervenors are *bona fide* organizations and that their members are prepared to make a reasonable financial contribution to the defrayal of those expenses normally incident to the representation of their interests in litigation to which they have chosen to become a party. Further, it is not immediately apparent to us that the cost

⁶ The *Sterling* intervenors' representative resides in Oswego and, therefore, presumably could commute on a daily basis if the hearing were held there (or in a nearby city—such as Syracuse—which might offer more suitable hearing accommodations).

⁷ Not surprising, counsel for both the applicants and the staff stated a preference for Bethesda. Staff counsel did, however, evince some sympathetic regard for the intervenor's concern once it had surfaced.

differential to which the intervenors have alluded is sufficiently onerous to offset the substantial additional burden which would be imposed upon everyone else involved in the proceeding were the hearing held in Harrisburg or central New York State.

There is, however, no need to arrive at a final decision on the matter before January. By that time, we should be able to make a more informed judgment on, among other things, whether a Bethesda hearing is required to insure our ability to discharge our other responsibilities. Although that may not be a dispositive factor, as above observed we think it is a weighty one.

FOR THE APPEAL BOARD

**C. Jean Bishop
Secretary to the Appeal Board**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. Lawrence R. Quarles
Michael C. Farrar

In the Matter of

**RADIATION TECHNOLOGY,
INC.**

**Byproduct Material License
No. 29-13613-02**

**Lake Denmark Road
Rockaway, New Jersey 07866**

October 16, 1979

The Appeal Board approves civil penalties of \$4,050 against the licensee, reversing in part and affirming in part the presiding officer's determination in ALJ-78-4, 8 NRC 655 (1978).

**ATOMIC ENERGY ACT: CIVIL PENALTIES (AUTHORITY OF
PRESIDING OFFICER)**

The Director of Inspection and Enforcement is not the ultimate fact finder in civil penalty matters. Where there is a hearing on the matter, it is the presiding officer at the hearing, not the Director who finally determines on the basis of the hearing record whether the charges are sustained and civil penalties warranted. 10 CFR 2.205.

NRC: INVESTIGATORY AUTHORITY

For the reasons elaborated in *Marshall v. Barlow's*, 436 U.S. 307 (1978), industrial users of byproduct material have no "expectation of privacy" in their use of radioactive substances. Accordingly, Commission inspectors were not required to obtain a judicial search warrant before entering, during scheduled working hours, premises the licensee devoted to that purpose.

NRC: ENFORCEMENT OF LICENSE CONDITIONS

Civil penalties are not invalidated by the absence of a formally promulgated "schedule of fines" where the penalties imposed are within the statutory limits and the Commission has published general criteria for enforcement actions supplemented by a publicly available manual that details whether, and what amount of monetary penalties are appropriate.

RULES OF PRACTICE: STANDING TO APPEAL

The Commission has long construed its Rules of Practice to allow the staff to appeal from initial decisions. *New York Shipbuilding Corporation*, 1 AEC 842 (1961). *Hamlin Testing Laboratories, Inc.*, 2 AEC 423 (1964), *affirmed sub nom. Hamlin Testing Lab., Inc. v. AEC*, 357 F.2d 632 (6th Cir. 1966).

RULES OF PRACTICE: ISSUES ON APPEAL

Considerations of funding fairness preclude the staff from resurrecting on appeal a theory it interred at trial. *Niagara Mohawk Power Corporation* (Nine Mile Point Station, Unit 2), ALAB-264, 1 NRC 347, 355-57 (1975).

REGULATIONS: CONTROL OF RADIOACTIVE MATERIAL

The regulatory requirement imposed by 10 CFR 20.207(b) that radioactive material in an unrestricted area and not in storage "be tended under the constant surveillance and immediate control of the licensee" is not satisfied by its mere location on premises under the general control of the licensee as owner or lessee. Section 20.207(b) requires that constant control—including continual observation—be maintained over all licensed radioactive materials in unrestricted areas.

Dr. Martin A. Welt, Rockaway, New Jersey, for Radiation Technology, Inc., *licensee*.

Messrs. James P. Murray, James Leiberman, Stephen G. Burns and Ms. Karen D. Cyr for the Nuclear Regulatory Commission staff.

DECISION

This matter concerns charges levelled by the Director of Inspection and Enforcement that Radiation Technology violated conditions of its byproduct material license and related Commission safety regulations. After a hearing, the presiding officer upheld seven of the Director's nine charges and assessed \$3,300 in civil penalties against the licensee. ALJ-78-4, NRC 655 (1978). Both sides appeal.

I

Radiation Technology performs general purpose irradiation of various industrial materials for its customers and engages in research and development of radiation processing techniques for industrial purposes. Its business requires the use of cobalt-60, a radioactive "byproduct material" within the meaning of section 11(e) of the Atomic Energy Act.¹ The Act makes it

¹ 42 U.S.C. Section 2014(e). See also 10 CFR Sections 30.4(d) and 30.71.

unlawful to possess or use by-product material except as licensed by the Commission and in accordance with Commission regulations.² The latter expressly provide that the Commission may inspect a licensee's premises and facilities at reasonable times to insure its compliance.³

The Commission issued Radiation Technology a byproduct material license in 1971. Under its terms, the company may possess and use cobalt-60 in an industrial cell irradiator and a pool irradiator for radiation of medical, cosmetic, and enzyme materials and production of radiation-induced polymeric material.⁴

Inspections of the company's Rockaway, New Jersey, facility on October 27 and November 1, 1976 by Commission representatives disclosed a series of apparent infractions of Commission regulations and the company's license. In brief, these involved Radiation Technology's failure (1) to inform the Commission that it had shut down its pool irradiator because of increasing radioactivity levels and that its tests of the pool water for a leaking radioactive source had yielded impermissibly high results; (2) to instruct employees adequately in radiation protection measures; (3) to limit radiation levels in unrestricted areas of the facility; (4) to control radioactive material to prevent its unauthorized removal from the premises; (5) to post proper warnings in radiation areas and on containers of radioactive material; (6) to survey the facility for the existence and magnitude of radiation hazards; and (7) to obtain an approved operator's license for an employee before permitting his unsupervised use of radioactive material.

Section 234 of the Atomic Energy Act authorizes the Commission to impose civil monetary penalties for violation of the Act, Commission regulations, and license conditions.⁵ Before instituting a civil penalty proceeding, Commission regulations require the Director of Inspection and Enforcement to serve a written notice of violation and proposed penalty upon the person charged, who then has twenty days to pay the penalty or answer the charges. The Director must consider any answer to his charges in deciding whether to drop them or to impose the penalty in whole or in part. If the person charged is dissatisfied with the Director's decision, he may demand a formal evidentiary hearing before a presiding officer with authority to dismiss the proceeding or to impose or mitigate the penalty. 10 CFR 2.205.

On January 5, 1977, after reviewing the inspectors' reports and concluding that Radiation Technology committed the violations, the Director issued a

² 42 U.S.C. Section 2111.

³ 10 CFR Section 30.52. Section 161(o) of the Atomic Energy Act, 42 U.S.C. Section 2201(o), authorizes the Commission to provide for inspections as necessary to effectuate the purposes of the Act.

⁴ ALJ-78-4, 8 NRC at 656.

⁵ 42 U.S.C. Section 2282.

“Notice of Violation and Proposed Imposition of Civil Penalties of \$4,800.” This notice apprised Radiation Technology of the charges against it and of its right to respond, which it did on January 31, 1977. After considering this response and finding it to be inadequate, the Director issued an “Order Imposing Civil Penalties” on March 14, 1977. Radiation Technology thereupon demanded a hearing on the charges and the Commission referred the matter to an administrative law judge for determination.

Dr. Martin A. Welt, Radiation Technology’s president and a physicist formerly employed by the Atomic Energy Commission, chose to represent his company at the hearing without assistance of counsel. Dr. Welt opposed the imposition of civil penalties on both procedural and substantive grounds. After an evidentiary hearing, the presiding officer dismissed two of the nine charges for failure of proof and imposed civil penalties of \$3,300 for the remaining seven violations, which he held to be sustained by reliable, probative and substantial evidence in the record.⁶

Radiation Technology’s appeal raises both procedural and substantive objections to the charges levelled against it. We consider the former in part II of this opinion, which follows immediately, and the latter in part III, beginning at p. 542. We evaluate the staff’s appeal from the judge’s dismissal of two of the charges in part IV, *infra*, at p. 547.

II

1. Denial of Due Process in Deciding to Press Charges.

Radiation Technology asserts that the Director’s decision to proceed against it rests on “off-the-record,” *ex-parte* reports made by NRC safety inspectors and complains that it had no opportunity to cross-examine the Director to determine whether he had been improperly influenced by them. Alleging that the “ultimate fact finder” was thus privy to “allegations not on the record” and therefore that its “right of due process was violated,” the company contends that the charges against it may not stand.⁷

The answer to this contention is that it rests on a misconception. The Director is not the ultimate fact finder in civil penalty matters. Commission regulations afford one from whom a civil penalty is sought the right to a hearing on the charges against it. 10 CFR 2.205(d) and (e). At that hearing, the Director must prove his allegations by a preponderance of the reliable, probative, and substantial evidence.⁸ It is the presiding officer at that hearing, not the Director, who finally determines on the basis of the hearing record whether the charges are sustained and civil penalties warranted. 10 CFR

⁶ ALJ-78-4, 8 NRC 655 (1978).

⁷ *Licensee’s Brief* at 10.

⁸ 5 U.S.C. Section 556(d); 10 CFR Section 2.732. The judge below applied that standard to the evidence bearing on each charge. 8 NRC at 667, 668, 669, 670, 671, 672, and 673.

2.205(f).⁹ *Cf., Brennan v. Occupational Safety and Health Review Com'n*, 487 F.2d 438, 441-42 (8th Cir. 1973) (Secretary of Labor's proposed civil penalties under the Occupational Safety and Health Act final where accepted but subject to an administrative hearing and *de novo* review if contested).¹⁰

In short, the Director's role in this situation is akin to that of a prosecutor. Subject to requirements that he give licensees written notice of specific violations and consider their responses in deciding whether penalties are warranted (requirements satisfied in this case, see pp. 535-536, *supra*), the Director may prefer charges, demand the payment of penalties (within statutory limits), and agree to compromise penalty cases without formal litigation—"plea bargain," in a sense.¹¹ The Director is not, however, obliged to hold a formal preliminary hearing before pressing charges. Furthermore, he may (and given the scope of his responsibilities undoubtedly he must) consult with his staff privately about the course to be taken in a given case.¹²

A licensee who thinks the Director has been ill-advised or mistaken has a remedy. It is not to cross-examine the Director's thought processes but to make him prove his case in an impartial hearing. The Federal Trade Commission has rejected arguments like those pressed upon us by Radiation Technology in terms we think persuasive:

The net effect of respondent's argument is that administrative due process requires that the informal settlement procedures should be converted into a preliminary trial on the Commission's decision to issue complaint. Neither the Administrative Procedure Act nor any other legislation warrants such a procedure. Respondent's rights will be fully protected in the adjudicative stage of this proceeding, which is subject to all the safeguards provided by the Administrative Procedure Act. Furthermore, the Commission's decision on whether to issue complaint is within its discretion. Preservation of the integrity of the administrative process precludes an inquiry into this agency's mental processes leading up to that decision.¹³

The short of the matter is that Radiation Technology was afforded an impartial hearing at which its constitutional rights were fully protected. "The

⁹ The presiding officer's decision is itself subject to review by this Board, 10 CFR Sections 2.762 and 2.785, and by the Commission, 10 CFR Section 2.786.

¹⁰ 42 U.S.C. Section 2282; 10 CFR Section 2.205(a) - (d). While not presented in this case, we note that the Supreme Court has upheld procedures whereby the members of administrative agencies receive the results of investigations, approve the filing of charges and then participate in the ensuing hearings as violating neither the Administrative Procedure Act nor due process of law. *Withrow v. Larkin*, 421 U.S. 35, 56 (1975).

¹¹ See, *In re Seeburg Corp.*, 20 Ad.L.2d at 614. (FTC 1966).

¹² See also, *Porter County Chapter v. NRC*, ___ F.2d ___, slip op. at 8-19 (D.C. Cir. No. 78-1559, September 6, 1979), discussing the analogous staff role in reactor licensing.

¹³ *In re Seeburg Corp.*, *supra*, 20 Ad.L.2d at 614.

demands of due process do not require a hearing, at the initial stage or at any particular point or at more than one point in an administrative proceeding so long as the requisite hearing is held before the final order becomes effective.” *Opp Cotton Mills, Inc. v. Administrator*, 312 U.S. 126, 152-53 (1941); *Midwestern Gas Transmission Co. v. FERC*, 589 F.2d 603, 627 (D. C. Cir. 1978). There is, therefore, no occasion to set aside the decision below for want of due process of law in the Director’s determination to press charges against the company.¹⁴

2. The Legality of the Commission Inspections.

(a) Commission officials did not obtain a judicial search warrant before they inspected Radiation Technology’s premises. The findings that the company violated Commission regulations and the terms of its license in handling radioactive material rest on evidence obtained during those inspections. The company asserts that the lack of a warrant breached its Fourth Amendment right to be free from “unreasonable searches and seizures.” It contends accordingly that the charges against it must fall because based upon unlawfully obtained evidence.¹⁵

A judicial warrant is generally needed to inspect commercial as well as residential premises. This is the case even when the search is for purposes of protecting public health and safety and not to further a criminal prosecution. *Marshall v. Barlow’s, Inc.*, 436 U.S. 307, 325 (1978) (warrantless inspection of commercial premises pursuant to the Occupational Safety and Health Act of 1970 declared unconstitutional). But not all searches require warrants. The test is whether the party involved had a “reasonable expectation of privacy.” *Id.* at 313. Some industries have a history of government oversight so pervasive that no reasonable expectation of privacy exists for those engaged in them. The Supreme Court explained in *Marshall v. Barlow’s* that “[t]he element that distinguishes these enterprises from ordinary businesses is a long tradition of close government supervision, of which any person who chooses

¹⁴ This also disposes of Radiation Technology’s claim that the charges against it were based on incompetently made inspections. *Licensee’s Brief* at 6-9. Whether the inspections were sufficient to prefer charges was a decision for the Director; whether they were adequate to impose penalties was a matter tried before the administrative law judge *de novo*. It is the latter only which concerns us here.

¹⁵ Radiation Technology initially made an oral motion to the trial board to dismiss the proceeding on this ground. (Tr. 26). Judge Jensch reserved decision (Tr. 27) but, so far as we can determine, neither ruled from the bench later nor discussed the point in his decision. The most likely reason for the omission is the company’s failure to preserve the point in its proposed findings of fact and conclusions of law. We might therefore treat the issue as waived. *Florida Power and Light Company* (St. Lucie Plant, Unit 2), ALAB-280, 2 NRC 3, 4 fn. 2 (1975). The staff has not raised the waiver point, however. We elect to deal with the issue on the merits in the circumstances.

to enter such a business must already be aware. 'A central difference between those cases and this one is that businessmen engaged in such federally licensed and regulated enterprises accept the burdens as well as the benefits of their trade The businessman in a regulated industry in effect consents to the restrictions placed upon him.'"¹⁶

The Supreme Court referred to liquor (*Colonnade Catering Corp. v. United States*, 397 U.S. 72 (1970)) and firearms (*United States v. Biswell*, 406 U.S. 311 (1972)) as examples of pervasively regulated industries. We harbor no doubt that the industrial use of radioactive byproduct material is also among the class of businesses where no "expectation of privacy" may fairly be claimed. Under provisions of the Atomic Energy Act in force since its inception in 1946, those who would put byproduct material to commercial use have needed the Commission's authorization and have been subject to Commission inspections to insure compliance with license conditions and governing regulations. Atomic Energy Act of 1954, §81, *as amended*, 42 U.S.C. §2111. *See* Act of Aug. 1, 1946, c.724, §5, 60 Stat. 760. The acquisition, ownership, use, possession, manufacture, transfer, export and import of byproduct material have at all relevant times required Commission approval. *Ibid.* The Commission may "not permit the distribution of any byproduct material to any licensee, and shall recall or order the recall of any distributed material from any licensee, who is not equipped to observe or who fails to observe such safety standards to protect health as may be established by the Commission or who uses such material in violation of law or regulation of the Commission or in a manner other than as disclosed in the application therefor or approved by the Commission." *Ibid.* And to insure that licensees in fact implement statutory and regulatory safeguards against the radiological hazards associated with byproduct material, Section 161o of the Act authorizes the Commission "to provide for such inspections of . . . activities under licenses issued pursuant to [*inter alia*] Section 81 [dealing with byproduct material licenses] as may be necessary"¹⁷

Commission regulations implementing these provisions cover over one hundred printed pages in the Code of Federal Regulations (10 CFR Parts 19-21, 30-35). Among them is express notice that (10 CFR 30.52(a)):

Each licensee shall afford to the Commission at all reasonable times opportunity to inspect byproduct material and the premises and facilities wherein byproduct material is used or stored.

These circumstances generate our agreement with the staff that industrial users of byproduct material are subject to a regime of pervasive federal

¹⁶ 436 U.S. at 313 (citations omitted).

¹⁷ 42 U.S.C. Section 2201(o).

government regulation.¹⁸ For the reasons elaborated in *Marshall v. Barlow's, supra*, these firms have no "expectation of privacy" in their use of radioactive substances. Accordingly, Commission inspectors were not required to obtain a judicial search warrant before entering, during scheduled working hours, premises Radiation Technology devoted to that purpose.¹⁹

(b) One of the inspections involved in this case commenced at 7:30 A.M. and was conducted in the absence of Radiation Technology's senior management. The company complains that this violated a Commission regulation that it says limits inspections to "reasonable times" and gives it the right to have its representatives accompany the inspectors at all times.

Commission regulations do require inspections to be conducted at reasonable hours. 10 CFR 30.52(a) (*supra* p. 539.) However, Radiation Technology's facility was open and byproduct material in use on the "night shift" when the inspectors arrived and the plant superintendent admitted them. Inspections of licensed activities during company-scheduled working hours are, in our judgment, reasonable *per se*. The Commission's regulations and license conditions are intended to protect those who work with byproduct material from the hazards of radioactivity. Because such hazards are not confined to "office hours," neither may Commission inspections be limited to those times.²⁰

The company reads Section 19.14(b) of the Commission's regulations as affording it an absolute right to accompany Commission safety inspectors on their rounds. Assuming *arguendo* that this Section applies to the situation before us,²¹ it provides only that licensee's representatives "may" accompany

¹⁸ See also, *Union Electric Company* (Callaway Plant, Units 1 and 2), ALAB-527, 9 NRC 126, 139-42 (1979) (no "expectation of privacy" respecting activities reasonably related to the safe construction of a nuclear power plant).

¹⁹ For similar reasons, there was no occasion for the staff to have "probable cause" before inspecting Radiation Technology's use of licensed material during its scheduled hours of operation. At all events, the staff's awareness of licensee's past infractions and reports to it from employees and an outside source that the company was ignoring Commission safety regulations were ample cause to trigger the inspections in question.

²⁰ A different question would arise if the inspectors had sought access to company records not readily available in the absence of their management custodians.

²¹ Part 19 of the Commission regulations is primarily concerned with notices, instructions, and reports to workers, and with related inspections. It affords those (other than the licensee) working with radioactive byproduct material opportunity to speak privately with Commission inspectors to avoid possible retaliation by their employer. 10 CFR Sections 19.15 and 19.16. (See *Callaway, supra*, ALAB-527, 9 NRC 126.) Hence, 10 CFR Section 19.14(b) provides that "[d]uring an inspection, Commission inspectors may consult privately with workers as specified in Section 19.15. The licensee or licensee's representatives may accompany Commission inspectors during other phases of an inspection." (Emphasis added.) Understood in context, therefore, Section 19.14(b) cannot be said to authorize a licensee's representative to accompany Commission safety inspectors at all times.

Commission inspectors, not that they must. The record suggests that such representatives would have been given permission to do so—had they been present.²² To adopt Radiation Technology's reading of the regulation would place the timing of inspections in the licensees' rather than the Commission's hands. The effective result would be to eliminate "surprise" inspections.²³ This is manifestly inconsistent with the Commission's obligation to insure that its safety requirements are being followed at all times. The interpretation for which the company argues is hardly compelled by the face of Section 19.14(b) and, given its result, we decline to adopt that reading.

3. The Need for a "Schedule of Fines."

The penalties imposed are within the limits established by Section 234 of the Atomic Energy Act, 42 U.S.C. §2282. Nevertheless, the company argues that the Commission can levy no penalties at all because it has not promulgated a formal "schedule of fines." We reject that contention. The statute imposes no such requirement; in any event, adequate guidance has been given to the industry about this subject. General criteria for enforcement actions were published in the Federal Register and, as modified from time to time, have not only been made generally available but have also been furnished directly to Commission licensees. See, 36 Fed. Reg. 16,894 (August 26, 1971), 37 Fed. Reg. 21,962 (October 17, 1972); 40 Fed. Reg. 820 (January 23, 1975). These criteria have been supplemented with a publicly available Staff Manual (Tr. fol. 107), promulgated by the Director of Inspection and Enforcement (who has delegated responsibility for these matters under 10 CFR 1.64). Included in that manual is a detailed discussion of how the staff goes about assessing whether a monetary penalty is appropriate and, if so, in what amount. Those steps were followed; the criteria were applied to this case and the licensee had fair notice of them. Nothing further was required.

We add only that assessing a penalty inherently calls for the exercise of informed judgment on a case-by-case basis. An absolute uniformity of sanctions (which the licensee appears to think necessary) is neither possible nor required. *Butz v. Glover Livestock Commission Co.*, 411 U.S. 182, 186-89, (1973); *Beall Const. Co. v. OSHRC*, 507 F.2d 1041, 1046 (8th Cir. 1974); *Brennan v. OSHRC*, *supra*, 487 F.2d at 442.

²² The plant superintendent did accompany the inspectors during the inspection's initial phases. Tr. 173-74, 212-14.

²³ The inspections at issue were "routine" and "unannounced" to let the inspectors "see conditions as they actually are, not as they are told to us by members of the [licensee's] staff." *Smith*, Tr. 119.

III

The presiding officer sustained seven of the nine specific charges levelled by the Director of Inspection and Enforcement against Radiation Technology. The company has appealed every unfavorable ruling; we review them seriatim.

1. Failure to Make Required Reports (Items 1 and 2).

Condition 13 of Radiation Technology's byproduct material license requires the company to test its sealed cobalt-60 sources for leaking radioactivity and specifies the procedures to be used in doing so. Should any test reveal 0.05 microcuries or more of removable contamination per 100 milliliter test sample, this must be reported to the Commission within 5 days. Commission regulations also direct licensees to notify NRC officials within 24 hours of any incident involving licensed material which may or does cause "a loss of one day or more of the operation of any facilities affected."²⁴

On September 2, 1975, company employees detected an increase in the level of radioactivity in licensee's "Research and Development" (R&D) pool water.²⁵ Operations were discontinued at 9:00 P.M. that evening and the pool irradiator was shut down.²⁶ The next day pool water samples were sent to an independent laboratory for analysis. On September 4th, a pencil of steel-encapsulated cobalt-60 was removed, sealed in a pipe and stored at the bottom of the pool as a "suspected leaker."²⁷ Pool operations were resumed on September 10th, prior to receipt of the laboratory results on September 11th.²⁸ These revealed 0.13 microcuries of removable contamination in one sample.²⁹ Neither the test results nor the shutdown was reported to the Commission.³⁰ Based on these facts, the presiding officer imposed the civil penalties sought by the staff: \$500 for item 1 (failure to report leak test results) and \$500 for item 2 (failure to report pool irradiator shutdown).

Radiation Technology challenges these penalties. It argues that no violations occurred, that the pool water tests are not "leak tests," and that the pool was shut down solely because of "cloudy water" and not because of any "incident" involving radioactive material. These defenses are untenable. The company's license itself specifies that the pool water must be sampled and

²⁴ 10 CFR Section 20.403(b)(3).

²⁵ *Haram* at 4, fol. Tr. 1871; *Smith* at 3, fol. Tr. 107; Tr. 1953; see also, *Licensee's Brief* at 17.

²⁶ *Haram* at 2, fol. Tr. 1871; *Smith* at 3, fol. Tr. 107; Tr. 1961; see also, *Licensee's Brief* at 22-23.

²⁷ *Haram*, Attachment A, fol. Tr. 1871; *Smith* at 3, fol. Tr. 107; Tr. 1964; see also, *Licensee's Brief* at 22-23.

²⁸ *Haram*, Attachment A, fol. Tr. 1871; *Smith* at 3, fol. Tr. 107; see also *Licensee's Brief* at 18.

²⁹ *McClintock*, fol. Tr. 107, Attachment 5 (Teledyne Isotopes Report of Analysis).

³⁰ *Licensee's Brief* at 18, 21.

tested periodically as a means of leak detection.³¹ The company acknowledged that it had suspected a problem "pencil" to be leaking radioactivity; that radiation levels in the R&D pool were rising at the time pool operations were discontinued; that the pool water test results were of reportable magnitude; and that neither the test results nor the inactivation of the pool was reported.³² The licensee's Radiation Safety Officer at the time of the shutdown confirmed that the presence of increasing radioactivity was the cause for discontinuing pool operations; indeed, when he was told not to report the shutdown to the Commission, he resigned his post.³³ The record thus amply supports the presiding officer's determinations that the pool water analyses were leak tests within the meaning of the company's license, that the R&D pool was shut down because of an incident involving radioactive material, and that these occurrences should have been reported promptly to Commission representatives.³⁴ Accordingly, we affirm the imposition of the civil penalties for these two items.

2. Failure to Instruct Employees in Radiation Protection Measures (Item 3).

Commission regulations require that persons employed in "restricted areas"³⁵ be taught procedures to minimize radiation exposure, the purposes and functions of protective devices, and applicable provisions of Commission regulations and license conditions. Charge 3 alleged that Radiation Technology's training program was inadequate, as demonstrated by the inspectors' discovery of two employees working in the room containing the company's R&D pool (a restricted area) who were ignorant of the radiation and contamination levels present and unaware of the proper method for using equipment to monitor their exposure. The staff demanded and the presiding officer imposed a \$500 civil penalty for this violation.

The basis of this action is cogently explained in the presiding officer's opinion. In affirming this ruling we need do no more than restate its salient points (8 NRC at 668-69):

. . . Licensee's application indicated that a training program would be conducted. A measure of the effectiveness of this Licensee's program can be made from the admitted facts that the President of the Licensee did not

³¹ Item H of Supplemental Information submitted with letter dated November 3, 1970; Item 11 of Table II, revised November 17, 1979. Both are incorporated by reference in License Condition 13. *McClintock* fol. Tr. 107, Attachment 15.

³² *Licensee's Brief* at 18, 21-23.

³³ *Haram*, fol. Tr. 1871 at 1-2. In addition to his radiation safety responsibilities, Mr. Haram was also a vice president of the company.

³⁴ ALJ-78-4, 8 NRC at 667-8.

know that two of his employees carried film badges inside their wallets located in their back pockets. That alone should indicate a complete failure of the training program for which the Licensee must assume responsibility. Without knowledge by employees of the radioactivity to which they may be exposed, protective measures cannot be taken to avoid overexposure. . . . [T]he lack of training [is] shown by the fact that the employees placed film badges within their wearing apparel and wallets, which of course, prevented accurate survey readings. This sort of responsiveness by employees to an asserted training program reflects a total failure to properly instruct and test the understanding of employees to justify the imposition of \$500 civil penalty.

We agree.³⁶

3. Failure to Post Proper Radiation Warnings.

(a) Warnings of Radiation Areas (Item 6).

Commission regulations require conspicuous posting of signs warning of “radiation areas” and “high radiation areas.”³⁷ In addition, licensees must control access to high radiation areas in existence for more than 30 days.³⁸ Radiation Technology was charged with (1) failing to post the necessary warnings on doors leading into the R&D and receiving pool rooms, and in the latter room itself, as well as (2) not properly controlling access to the high radiation area in the receiving pool. 8 NRC at 659.

The presiding officer determined that these areas had not been posted as required and imposed a \$500 civil penalty for the omission. 8 NRC at 671. The company appeals principally on the ground that the inspectors’ survey

³⁵ 10 CFR Section 19.12. A “restricted area” is any area access to which is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials. 10 CFR Section 19.3(e).

³⁶ The company argues that this cannot be the basis of an infraction because the regulations state only that film badges or similar radiation detection equipment “shall be worn or carried” but do not specify where. 10 CFR Section 20.202(b)(1). The short answer is that *licensee’s own supplier instructed that the badges are to be worn uncovered and facing the radiation source. McClintock, fol. Tr. 107, Attachment 7.* In the face of this, licensee’s continuing argument that the badges may appropriately be carried in wallets underscores the validity of the charge that employees received inadequate training.

³⁷ 10 CFR Section 20.203(b) and (c). A radiation area is “any area, accessible to personnel, in which there exists radiation . . . at such levels that a major portion of the body could receive in any one hour a dose in excess of 5 millirem . . .” *Id.* at 20.202(b)(2). A high radiation area is defined in the same manner, except that the potential dose is in excess of 100 millirem. *Id.* at 20.202(b)(3).

³⁸ 10 CFR Section 20.203(c).

instruments were inaccurately calibrated. It reasons from this that there is insufficient proof that the locations cited were actually radiation areas. The reasoning is faulty. As far as posting is concerned, it is not the precise radiation level measured on a given day that is important. Rather, under the regulations, what triggers the need for cautionary signs is the possibility that permissible radiation dosage levels may be exceeded. The presiding officer found that potential to be present in the areas specified and the record supports his finding.³⁹ Any doubt about the need for warning signs is eliminated by the terms of the company's license.⁴⁰ The finding that proper warnings were not posted is supported by the weight of the evidence and merits no extended discussion on our part. The penalty is also appropriate; posting proper warnings about the existence of radiation hazards is the very least that can be expected of licensees.

(b) Unlabeled Containers of Radioactive Material (Item 7).

Commission regulations require containers holding 1 microcurie or more of cobalt-60 to bear labels identifying their contents and providing information about minimizing or avoiding exposure to radioactivity.⁴¹ Radiation Technology was cited for failing to have such labels on containers of radioactive material in its receiving pool room and on certain other receptacles, *i.e.*, the steel container and the 55-gallon drum specified in Item 4 (*infra*, p. 549). We agree with the presiding officer that grease pencil markings on the former and a sign propped up next to the latter do not satisfy the requirements for durable signs bearing the familiar purple and yellow radiation caution symbol and appropriate safety instructions. As the staff sensibly points out, "It should not be necessary to closely approach a container and peer at some handwritten grease pencil markings before receiving any idea that the container is the source of a radioactive hazard."⁴² The \$50 civil penalty is affirmed.

³⁹ *McClintock* at 7, *Smith* at 8, fol. Tr. 107; Tr. 261, 1602, 1918. See also *Licensee's Brief* at . (admitting that the bottom of the receiving pool is a high radiation area).

⁴⁰ License condition 16 specifically requires posting both the interior and exterior entrances of the R&D room. *McClintock*, fol. Tr. 107, Attachment 15.

⁴¹ 10 CFR Section 20.203(f) and Part 20, Appendix C.

⁴² The staff inspectors' survey meters were admittedly less than precisely calibrated. Even if off by a factor of three, as suggested by Dr. Welt (Tr. 47-48), their readings demonstrated radiation emanating from the two receptacles at levels well in excess of that calling for warning labels. The suggestion that the inspectors interrupted the company in the process of moving these containers into storage is not supported by the record. The containers were not in storage when the inspectors arrived and had not been for some time; further, there is no evidence that they were in the process of being moved, and they should have been properly labeled in the interim.

4. Failure to Survey for Radiation Hazards (Item 8).

Under the governing regulations, a "survey" is "an evaluation of radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation," including where necessary physical examination of areas where such materials are in use or deposited and measurements of radiation levels and concentrations there. Licensees must conduct surveys periodically as necessary to insure that they are conforming to the Commission's "Standards for Protection Against Radiation," 10 CFR Part 20.⁴³ Item 8 in the Notice of Violation accused the company of failing to survey adequately (1) radiation levels in unrestricted areas, (2) individuals working in and around restricted areas, (3) liquid effluents discharged to unrestricted areas and (4) materials disposed of in a dumpster in an unrestricted area. The presiding officer found the charges sustained by the evidence and imposed a civil penalty of \$500 for these infractions.

The gist of these infractions is not in the presence or absence of any specific radiation level, but in the failure to check regularly for the presence of radiation hazards. The presiding officer found that the evidence sustained the specific charges (8 NRC at 672). That finding was compelled; in our judgment the record demonstrates the company's general carelessness about such matters. The civil penalty of \$500 is more than justified.⁴⁴

5. Failure to Obtain Commission Approval for an Unlicensed Employee's Use of Radioactive Material (Item 9).

Condition 12 of Radiation Technology's license allows the use of radioactive byproduct materials only by or under the supervision of specified employees who hold Commission licenses.⁴⁵ Radiation Technology was charged with violating this condition by routinely permitting the unsupervised

⁴³ 10 CFR Section 20.201.

⁴⁴ License argues that there is "double jeopardy" involved because its citation for inadequate training and failure to survey for radiation are both based in part on the failure of two employees to wear film badges. We disagree; these are two separate infractions and some of the same evidence points to both. Thus, the employees' stuffing of film badges in their wallets indicates that correct usage was not impressed upon them. At the same time, this fact also demonstrates that the company never properly checked on the radiation exposure of these employees. An adequate survey of such exposure requires certainty that the badges are being worn in the restricted area at all times. As the company's radiation safety officer was unaware that employees were wearing film badges improperly, he had no way of knowing whether the badges were, in fact, being worn. The survey of radiation exposure for these employees was thus inadequate.

⁴⁵ *McClintock*, fol. Tr. 107, Attachment 9.

⁴⁶ *McClintock*, fol. Tr. 107, Attachment 12 (letter of February 14, 1975 from Radiation Technology's Vice President).

use of byproduct material by an unlicensed employee. The presiding officer found this to be the case and imposed a civil penalty of \$750.

As it did below, the company acknowledges the violation but asserts the existence of mitigating circumstances. The licensee says that the employee in question was in fact properly trained and subsequently obtained an operator's license without further training; hence, no hazard was created in permitting him to work without the required supervisor present and Item 9 was but a technical infraction. We disagree. The company was cited for a similar violation previously; its response then was a confession and a promise of future compliance.⁴⁶ Those assurances notwithstanding, Radiation Technology resumed operations in violation of this license condition. The circumstances presented are not cause for mitigation but evidence of a repeated disregard for Commission regulations. A \$750 civil penalty is entirely appropriate.

IV

The staff excepts to that portion of the decision below dismissing two of its charges against Radiation Technology as unproven. The company responds that the decision is correct on these matters and that the staff's appeal rests on a misreading of the record. Licensee argues preliminarily, however, that Commission regulations in any event preclude an appeal by the staff. We turn to this issue first.

1. The Staff's Right to Appeal.

The company's argument that the staff may not appeal rests on its reading of the Rules of Practice. Under Section 2.704(a) of the Rules, "[t]he Commission may provide in the notice of hearing that one or more members of the Commission, or an atomic safety and licensing board, or *a named officer who has been delegated final authority in the matter*, shall preside." 10 CFR 2.704(a). Seizing upon the italicized phrase as the basis for its position, the company argues that

the initial decision is that of the Commission itself. It is absurd to argue that the NRC may appeal to the NRC the decision of the NRC. In essence, the final decision of the Administrative Judge is now *res judicata* To allow an NRC appeal is tantamount to a strict denial of due process in that an appellant could be asked to continually defend himself of the same allegations regardless of the prior outcome of an Administrative Hearing in accordance with Agency procedures.⁴⁷

⁴⁷ Licensee's Argument in Response to "Brief in Support of Staff Position," filed April 12, 1979.

The answer, of course, is that the provisions of the Rules of Practice are not to be read in isolation but to be understood in context. The “final authority” mentioned in section 2.704 is to preside at the hearing (the section is headed “Designation of presiding officer, disqualification, unavailability”) and to render an “initial decision” when it is completed. 10 CFR 2.760. That decision becomes the “final action of the Commission” only if not reviewed on its own initiative and no “exceptions are taken in accordance with 2.762.” 10 C.F.R. 2.760(a). Under section 2.762, by filing exceptions “any party may take an appeal” (emphasis added); lest there be any doubt about it, the provision expressly treats the staff as a party for these purposes. 10 CFR 2.762. Thus, when read as a whole, the Rules of Practice will not bear the construction Radiation Technology would give them.

The company’s argument that “the final decision of the Administrative Judge is now *res judicata*” where he ruled in its favor but subject to appellate review where he ruled against the company is, at best, inconsistent. Be that as it may, the Commission has long construed its Rules to allow the staff to appeal from initial decisions. *New York Shipbuilding Corporation* (Byproduct Material License No. 29-2204-2), 1 AEC 842 (1961); *Hamlin Testing Laboratories, Inc.* (Byproduct Material License No. 21-6564-1), 2 AEC 423 (1964), *affirmed sub nom. Hamlin Testing Lab., Inc. v. AEC*, 35 F.2d 632 (6th Cir. 1966) (initial decision in favor of byproduct materials licensee reversed by the Commission on the staff’s appeal). As Radiation Technology offers no satisfactory reason why a different rule should apply in its case, the Commission’s reading of its own regulations is controlling. *Northern Indiana Public Service Co. v. Porter County Chapter*, 423 U.S. 12, 14-15 (1975). Consequently, whether considered as a matter of law or of practice, the contention that the staff may not appeal an unfavorable ruling is incorrect.⁴⁸

⁴⁸ To avoid any confusion, we point out—perhaps unnecessarily—that the licensee’s argument (quoted at p. 547 *supra*) is founded on an incorrect premise insofar as it refers indiscriminately to the “NRC” without distinguishing between (1) the staff, which was an adversary party to the proceeding; and (2) the presiding officer, ourselves, and the Commissioners, all of whom function solely in an adjudicatory capacity in these proceedings. Properly understood, the staff is appealing the presiding officer’s decision to us (as the Commission’s delegate for handling appeals).

2. Excessive Radiation Levels (Item 4).

Commission regulations require byproduct material licensees to control radiation levels on their premises. Under Section 20.105(b), radiation must be so limited that an individual continuously present in an "unrestricted area"⁴⁹ could not receive a dose of more than two millirems in any one hour (2 mR/h) or more than 100 millirems in any seven consecutive days.⁵⁰ Count 4 accused Radiation Technology of violating this regulation in two specific instances: by allowing "(a) radiation levels of 95 mR/h on the surface of a steel container of contaminated resin located outside the door leading into the mechanical room," and "(b) 40 mR/h on the surface of a 55-gallon drum containing contaminated circulation water located outside the overhead door leading into the warehouse connected to the office building." 8 NRC at 658.⁵¹ A \$750 civil penalty was sought for these infractions.

The presiding officer found, however, that the staff inspectors did not prove that they used accurate instruments to measure the radiation levels in question and therefore dismissed the charges. 9 NRC at 663-67, 669. On appeal, the staff acknowledges that this item "rests upon a survey meter whose accuracy has not been established."⁵² Nevertheless, we are urged to reinstate half the proposed penalty on the basis that the licensee "conceded" below that the 55-gallon drum was in an unrestricted area and had a radiation level in

⁴⁹ "Unrestricted area" means any area access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, and any area used for residential quarters." 10 CFR Section 20.3(14).

⁵⁰ 10 CFR Section 20.105 provides in pertinent part:

Permissible levels of radiation in unrestricted areas.

(a)

(b) Except as authorized by the Commission pursuant to paragraph (a) of this section, no licensee shall possess, use or transfer licensed material in such a manner as to create in any unrestricted area from radioactive material and other sources of radiation in his possession:

(1) Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of two millirems in any one hour, or

(2) Radiation levels which, if an individual were continuously present in the area, could result in his receiving a dose in excess of 100 millirems in any seven consecutive days.

⁵¹ Count 4 also mentioned instances of excessive radiation "at several locations" not further described. The presiding officer declined to admit evidence relating to those undesignated areas. Tr. 161. The ruling was correct. A licensee is entitled to notice of specific violations before civil penalties may be imposed. 10 CFR Section 2.205; 5 U.S.C. Section 554(b)(3). "It is well established, specifically by the [Administrative Procedure Act], by the case law and by the principles of fundamental fairness, that one cannot be found guilty of an offense not encompassed by the complaint or of which he had no fair notice." *NLRB v. Tennesco Corp.*, 339 F.2d 396, 399 (6th Cir. 1964) (per Prettyman, J.)

⁵² *Staff Brief in Support of Exceptions* at 10.

excess of 2 mR/h. The staff contends that this was tantamount to an admission of a violation of the regulations and, therefore, that a civil penalty on this item is warranted even without the inspectors' evidence.

The "concession" on which the staff relies was a statement by licensee's representative at the opening of the hearing. Dr. Welt there stated that "Radiation Technology agrees that there was one small spot on the 55-gallon drum where the field of the radiation level was in excess of 2mr per hour content (sic)." Tr. 37. His remark, however, was qualified by further comments which appear to us to negate the idea that any violation was being admitted. *Ibid.* Be that as it may, the staff did not rely on this line of argument at the hearing below. Nor did its proposed findings of fact and conclusions of law urge this rationale upon the presiding officer as a possible ground of decision. Had it done either, the company would have been on notice to offer a satisfactory explanation for what otherwise might be taken as an admission of guilt or face the consequences. By not pressing the point the staff effectively abandoned the "concession" argument (assuming it was ever really raised). This entitled Radiation Technology to assume that the only theory of violation being pursued under charge 4 rested on the metered radiation levels; it defended itself accordingly. In our judgment, considerations of fundamental fairness preclude the staff from resurrecting on appeal a theory it interred at trial. *Niagara Mohawk Power Corp.* (Nine Mile Point Station, Unit 2), ALAB-264, 1 NRC 347, 355-57 (1975).

Moreover, the staff's failure to present the "concession" argument to the presiding officer is itself cause for not disturbing his decision. Jurisdictional issues to one side, a losing party may not be heard to complain that a tribunal overlooked a legal theory not drawn to its attention. *Tennessee Valley Authority* (Hartsville Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 347-48 (1978), and authorities cited there. The dismissal of the fourth charge is accordingly affirmed.

3. Failure to Control Licensed Material in Unrestricted Areas (Item 5).

The steel container and the 55-gallon drum discussed in the previous section also figure in charge 5 against the licensee. This alleged that Radiation Technology failed to keep these two receptacles of licensed material "under constant surveillance and immediate control" as required by Section 20.207 of the Commission's regulations.⁵³ As we understand his opinion, the presiding

⁵³ 10 CFR Section 20.207:

"Storage and control of licensed materials in unrestricted areas.

(a) Licensed materials stored in an unrestricted area shall be secured from unauthorized removal from the place of storage.

(b) Licensed materials in an unrestricted area and not in storage shall be tended under the constant surveillance and immediate control of the licensee."
Charge 5 appears in full in the opinion below, 8 NRC at 659.

officer rejected the charge on two grounds: First, because charge 5 was drawn in terms of the “radioactive material in Item 4,” he assumed that the staff’s failure to prove specific radiation levels in connection with that item vitiated charge 5 as well. (See discussion of Item 4, *supra*, at p. 549). Second, the presiding officer concluded that the licensee had maintained sufficient control over these receptacles because it could exercise its common law right as a landlord to exclude the public from its property. 8 NRC at 669-70. We agree with the staff that the decision below misconstrues both the regulatory requirements and the evidence on this point.

The regulation in question, 10 CFR 20.207(b), provides that:

Licensed material in an unrestricted area and not in storage shall be tended under the constant surveillance and immediate control of the licensee.

It is not contended that the materials in question were “in storage.” The record evidence is undisputed that the two receptacles contained “licensed material”⁵⁴ and were located in an “unrestricted area”⁵⁵ Section 20.207 does not make the emission of any particular level of radiation an element of the offense⁵⁶ and the reference in charge 5 of the Notice of Violation to “the radioactive material described in Item 4” does not import such a requirement.⁵⁷ Fairly read, the charge simply refers to the earlier description in order to particularize the receptacles asserted to have been improperly controlled by the company.

The only remaining element is whether the two containers were under licensee’s “constant surveillance and immediate control.” The trial judge did not apply that standard, however. Instead, treating the material in question as the equivalent of “trash,” he held the company’s “general control” over its premises as owner or lessee sufficient to satisfy Section 20.207. 8 NRC at 670. We cannot agree.

It may well be that the two containers were laden with “trash.” But it was radioactive trash. Through its regulations, the Commission, not the presiding officer, decides what kind of precautions licensees must take in handling these substances. And the agency has called for greater controls over the specific

⁵⁴ “Licensed material” includes “byproduct material received, possessed, used, or transferred under a general or specific license issued by the Commission pursuant to regulations in this chapter.” 10 CFR Section 20.3(8).

⁵⁵ See fn 49, *supra*, and *Smith*, fol. Tr. 107 at 6; *McClintock*, fol. Tr. 107 at 6a; Tr. 139-40; 237, 239-40.

⁵⁶ Permissible levels of radiation are governed by 10 CFR Section 20.105. See fn. 50, *supra*.

⁵⁷ In discussing charge 5, the staff specifically pointed out below that a survey for specific radiation levels “is irrelevant to a determination under section 20.207.” *Staff Response to Licensee’s Proposed Findings* at 32.

material than those attendant upon “exclusive occupancy of the building.”⁵⁸ In amending Section 20.207 to its present form, the Commission stressed unmistakably that the provision directs “that *constant control* be maintained over all licensed radioactive materials in unrestricted areas.”⁵⁹

We agree with the staff that the licensee did not provide that control for the two receptacles in question. The record does not support the trial judge’s finding that both were continuously visible from the plant manager’s office (8 NRC at 670). In the first place, according to the manager himself, one of them was not.⁶⁰ In the second, actual and continual observation, not possible and intermittent oversight, is prescribed by Section 20.207. Neither the manager nor any other employee was assigned or expected to keep the drum and container with the radioactive waste materials under continuous observation; there is no evidence in the record that anyone actually did so; and the inspectors testified that the two receptacles were neither under constant surveillance and immediate control nor secured against unauthorized removal of the day of their inspections.⁶¹ We need not belabor the point. Radiation Technology’s representative acknowledged expressly that (Tr. 55):

The company agrees with the NRC in the fact that the items cited in 4(b) was (sic) in an unrestricted area and was (sic) not under constant surveillance and immediate control of the licensee.

The excuse offered—that the infraction occurred only because of the disruption caused by the inspection itself—is simply not credible.⁶² In the circumstances, the Director’s proposed civil penalty of \$750 on charge 5 is warranted.

⁵⁸ 8 NRC at 670. There, in holding a landlord’s theoretical common law property rights adequate to satisfy NRC “Standards for Protection Against Radiation” (10 CFR Part 20), the presiding officer commented, “In the glamour of modern technology, there appears to be a tendency to overlook the legal fundamentals, which are followed by the courts and which are most explicitly expressed in the early cases. . . .” *Id.* at fn. 7. That may well be so; but these are technological times and these are technological hazards. The existence of an owner’s abstract legal right to control his premises does not of itself satisfy the regulatory requirement that he exercise “constant surveillance and immediate control” over radioactive material on those premises.

⁵⁹ 40 Fed. Reg. 266679 (June 25, 1975) (emphasis added). The judge seemingly overlooked this explanation in commenting that, “If something more than general control is needed, the regulation should be amended to state it specifically.” 8 NRC at 670.

⁶⁰ *Powell*, Tr. 313.

⁶¹ *Powell*, Tr. 315; *Smith*, fol. Tr. 107 at 7; *McClintock* fol. Tr. 107 at 6.

⁶² For one thing, the receptacles were in place unattended before the inspectors arrived.

Safety regulations and license conditions represent the Commission's judgment of the precautions necessary to protect employees and the public from hazards inherent in the industrial use of radioactive byproduct material. Civil penalties are appropriate to emphasize the importance of strict compliance with those safety precautions, to stimulate the taking of prompt corrective measures, and to deter their future disregard. The record evidences a tendency by this licensee, however, to construe those regulations and conditions as inconveniences that may be ignored rather than as precautions that must be observed. This can lead to harmful exposures to radioactivity; that none has yet occurred is fortuitous. We are fully convinced that civil penalties are called for in the circumstances. And, in light of the company's attitude, we recommend to the Director that the licensee's operations be monitored regularly until it demonstrates an appreciation of the need for compliance with the spirit as well as the letter of these important safeguards.

The presiding officer's rejection of charge 5 is *reversed*, his resolution of the remaining charges is *affirmed*, and civil penalties of \$4,050 against Radiation Technology, Inc., are *approved*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. Lawrence R. Quarles

In the Matter of

**Docket Nos. 50-338SP
50-339SP**

**VIRGINIA ELECTRIC AND
POWER COMPANY
(North Anna Nuclear Power
Station, Units 1 and 2)**

**(Proposed Amendment to
Operating License NPF-4
to Permit Storage Pool
Modification**

October 29, 1979

The Appeal Board grants intervenors' motion for leave to file out-of-time their brief in support of exceptions to Licensing Board "decisions" and accepts accompanying brief.

**RULES OF PRACTICE: EXTENSIONS OF TIME FOR FILING
EXCEPTIONS OR BRIEFS**

If unable to meet a briefing deadline, a party should seek seasonably an extension of the time within which to file its brief, rather than allow the deadline to pass and then submit a motion for leave to file the brief out-of-time. 10 CFR Part 2, Appendix, Section IX(d) (3).

MEMORANDUM AND ORDER

Before us are the exceptions of intervenors Potomac Alliance and Citizens Energy Forum, Inc., from the actions of the Licensing Board announced in its August 6, 1979 issuance entitled "Board Decisions." The deadline for the filing of their brief in support of those exceptions was October 10, 1979. The brief was not filed by that date; nor did intervenors apply for an extension of briefing time. Accordingly, on October 17 we entered an order directing the intervenors to show cause by October 26 why their exceptions should not be dismissed for want of diligent prosecution.

Rather than respond directly to the October 17 order, intervenors submitted their brief on October 26, accompanied by a motion for leave to file it out-of-time. The motion recites, *inter alia*, that, since the date upon which

their exceptions had been filed, intervenors' counsel "has been extensively involved in [other] matters both before the Commission and against the Commission in federal courts." In this connection, we are told that counsel is providing his services in these various proceedings without compensation, "requiring him to hold full-time employment elsewhere"; and that he does not have the benefit of the assistance of co-counsel. Finally, the motion suggests the absence of any prejudice to the applicant or the NRC staff stemming from the untimely filing (in view of the fact that the operating license amendment sought by the applicant and authorized by the Licensing Board has already issued).

We are prepared to accept each of these representations. What is left unexplained, however, is why counsel did not observe the procedures set forth in Section IX(d) (3) of the Appendix to the Commission's Rules of Practice:

There must be strict compliance with the time limits prescribed for the filing of exceptions or briefs by the rules of practice or by an order of the Appeal Board which extends or shortens those limits in the particular case. Absent a showing of extraordinary and unanticipated circumstances, motions for extensions of time must be received by the Appeal Board at least 1 day prior to the date upon which the document in question is then due for filing. In no circumstances will a document be accepted by the Appeal Board on an untimely basis unless it is accompanied by a motion for leave to file it out of time, which similarly must be founded upon extraordinary and unanticipated circumstances . . .

Manifestly, none of the circumstances to which the motion alludes was both "extraordinary and unanticipated." To the contrary, it appears from the motion that counsel was fully aware well in advance of the filing deadline that he would not be able to meet that deadline. This being so, he was duty-bound to seek an extension of briefing time sufficiently in advance of October 10 to enable us to act seasonably upon the application.

It might be added that substantial practical considerations underlie the procedural requirement which went unfulfilled in this instance. Among other things, the proper management of our docket is obviously impeded if a briefing deadline passes without the receipt of either the brief or a timely application for an extension of the time within which to file it: in such circumstances we are left in the dark respecting whether the litigant has decided not to participate further in the proceeding² or, instead, proposes to tender an untimely submission at some unspecified future date—perhaps weeks or even months in the offing. To be sure, we might call upon the Secretary to the Board to make inquiry of counsel respecting his intentions in the matter. But there is no apparent good reason why our staff should be

¹ 10 CFR Part 2.

² Which, in the case of an appellant, means the abandonment of its appeal.

burdened with undertakings of that character. Rather, the responsibility appropriately lies with the litigants. In short, we take the Section IX(d) (3) mandate seriously and expect those practicing before us to do likewise.

Nonetheless, on this occasion we have decided to grant the intervenors' motion and to accept their untimely brief. In doing so, we are influenced by counsel's seeming inexperience in the conduct of adjudicatory proceedings, as well as his assurance that what transpired here will not prove indicative of "future performance" on his part.

The intervenors' motion for leave to file their brief out-of-time is *granted*; the period provided by 10 CFR 2.762(b) for the filing of responsive briefs shall be deemed to have commenced to run upon the date of service of this order.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Dr. Quarles did not participate in this order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Richard S. Salzman
Dr. W. Reed Johnson

In the Matter of

CAROLINA POWER AND
LIGHT COMPANY

Docket No. 50-261

(H. B. Robinson, Unit No. 2)

October 31, 1979

Upon *sua sponte* review of (1) the Licensing Board's unpublished order of June 26, 1979, terminating this consolidated proceeding (involving an operating license amendment and an environmental review pursuant to former Appendix D, Section B, to 10 CFR Part 50), and (2) its earlier partial initial decision, LBP-78-22, 7 NRC 1052 (1978), the Appeal Board affirms the action below except for the question of environmental effects of radon emissions attributable to the mining and milling of uranium to fuel the plant. This question is left open to abide completion of the special proceeding on this generic issue now pending before the Appeal Board.

FWPCA: EPA AUTHORITY

Congress has designated EPA the Federal guardian of the quality of the nation's waters. Where water quality matters under the Federal Water Pollution Control Act Amendments of 1972 are involved in NRC licensing action, NRC is bound to take EPA's considered decisions at face value, and simply to factor them into its NEPA cost-benefit balance.

DECISION

1.A licensing board was convened in 1973 to inquire into whether the continued operation of the Robinson nuclear plant—which began running in 1970—was consistent with the dictates of the National Environmental Policy Act.¹ The belatedness of this inquiry resulted from the fact that the Atomic Energy Commission's earlier attempts to implement NEPA has proved inadequate. *Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109 (D.C. Cir. 1971). As a consequence, all agency action taken within twenty

¹ The nuclear plant in issue here is the second unit on the Robinson site; the first is a relatively small fossil-fuel facility.

months of NEPA's enactment—including the licensing of Robinson to operate—had to be reevaluated.²

Owing to a combination of circumstances, it has taken nearly the remainder of the decade to accomplish this for the Robinson plant. The AEC/NRC staff did not complete the Final Environmental Statement until 1975.³ By then, the owner of the Robinson facility had applied for permission to take the plant to its "stretch" capacity; *i.e.*, it was seeking an amendment to the operating license to raise the allowable maximum power level from 2200 to 2300 megawatts thermal (or from 700 to 730 megawatts electric).

An intervenor requested a hearing in connection with both (1) the environmental review of plant operation and (2) the proposed increase in power level. His interest in both proceedings stemmed from his ownership of property located, like the plant, on man-made Lake Robinson. His sole contention focused on the fact that the plant's operation (with "once-through" cooling) would increase the temperature of the lake and would, he said, have an adverse impact upon the aquatic environment in general and upon his use and enjoyment of the lake in particular.

The two proceedings were consolidated⁴ and, after the FES was published, the Licensing Board launched a wide-ranging inquiry into the subject of the facility's discharge of heat.⁵ After conducting several days of hearings in the late summer of 1975, that Board indicated that it had serious difficulty with the applicant's and staff's position that there was no need for supplemental or "closed-cycle" cooling; it thereupon decided to reopen the record.⁶

Shortly thereafter (in May 1976), the applicant asked that the NRC proceeding be delayed pending a ruling from the Environmental Protection Agency on a requested exemption from that Agency's thermal discharge limitations.⁷ Acceding to this request (which the staff had supported), the Board below took no further substantive action in the proceeding for a year and a half. During the time that this *de facto* suspension was in effect, the intervenor disposed of his property on the lake and withdrew from the litigation, leaving the case uncontested.

² See 10 CFR (1973 ed.) Part 50, Appendix D.

³ The "Notice of Opportunity for Hearing" which preceded the convening of the Board was published on July 18, 1973 (38 Fed. Reg. 19148). That notice had awaited the completion of a draft environmental statement, published in April, 1973.

⁴ CLI-74-34, 8 AEC 373 (1974).

⁵ At the time, prior to EPA's full implementation of the Federal Water Pollution Control Act Amendments of 1972, this subject was a fit one for Board consideration. See, *e.g.*, *Philadelphia Electric Company* (Peach Bottom Units 2 and 3), ALAB-216, 8 AEC 13, 37-59, *reversed in part on other grounds*, CLI-74-32, 8 AEC 217 (1974).

⁶ See the Board's unpublished March 23, 1976 Memorandum and Order, pointing out a number of deficiencies in the evidence presented by the applicant and staff.

⁷ The exemption request had been pending for some time, but the applicant had not yet filed with EPA the required report of the results of its monitoring program.

EPA eventually granted the requested exemption in late 1977, finding that there was no need for additional cooling in order to meet the statutory objective of "assur[ing] the protection and propagation" of the Lake Robinson ecology.⁸ Thereafter, the Board held an additional hearing; this was followed on June 19, 1978 by a partial initial decision announcing, *inter alia*, that the Board's own appraisal of the water quality situation conflicted with EPA's judgment but that, as it read Commission precedent, EPA's decision was binding upon it.⁹

This decision did not end the Board's involvement. To be sure, under the rules governing operating license proceedings, it was required to consider only contested matters. 10 CFR 2.760a. But it had the right in certain circumstances to take up other issues on its own. *Ibid.* Rather than make a hasty judgment on that score, the Board prudently awaited the completion of all the staff safety analyses. Then, after reviewing them, it asked the staff for certain additional information. Only after studying all the papers thus before it did the Board determine that no additional matters required its formal attention. Accordingly, in an unpublished order dated June 26, 1979, it terminated the proceeding.

2. No exceptions to the Licensing Board's decrees having been taken, we have reviewed the case on our own initiative.¹⁰ We find no fault with that Board's handling and eventual resolution of the thermal discharge question. Indeed, we commend the Board on two counts: first, for the thoroughness of its initial probe into the magnitude of the environmental threat posed by the dumping of waste heat into Lake Robinson; and second, for later dutifully subordinating its own carefully considered view of the situation to EPA's controlling decision.

The Board believed the latter step was compelled. But we doubt that the point is governed, as the Board thought, by the Commission's *Seabrook* decision.¹¹ Rather, it appears to us that the Commission left the question open. Our own subsequent decisions have, however, spoken to the subject. We think it appropriate to review this important subject once more in this case, because the Board below was obviously troubled by the notion that it is bound by EPA decisions on water-related matters that cannot be squared with its own perception of the evidence.

⁸ See Federal Water Pollution Control Act, 33 U.S.C. 1326.

⁹ LBP-78-22, 7 NRC 1052, 1062-64. Accordingly, the Board did not consider whether any modifications to the cooling system would be justified on a cost-benefit basis. *Id.* at 1064, fn. 53. All it was allowed to do was to decide how the adverse impacts of the thermal discharge affected the overall cost-benefit balance for the plant. *Ibid.*

¹⁰ In an unpublished order dated July 17, 1978, we deferred our review of the Board's partial initial decision pending its final action. After that occurred, we extended our time to review the entire proceeding (see our unpublished order issued August 7, 1979).

¹¹ See 7 NRC at 1063-64, citing *Public Service Company of New Hampshire* (Seabrook Units 1 and 2), CLI-78-1, 7 NRC 1 (1978).

Through the years, we have had occasion to trace the extensive changes that have taken place in this Commission's responsibilities in the water quality area.¹² In short, we have indicated that once EPA assumed its full role under the Federal Water Pollution Control Act Amendments of 1972, there would, by virtue of Section 511(c) (2) of that Act,¹³ be little left for this agency to do in that sphere. Taking this approach in *Seabrook* after EPA completed its task of passing judgment on that plant's proposed once-through cooling system (ultimately approving it), we held that we were justified in accepting EPA's findings on the nature and the extent of the cooling system's effect upon the aquatic environment. ALAB-422, 6 NRC 33, 69-71 (1977). As we there stressed, we accepted EPA's findings without any independent inquiry of our own into their foundation. *Id.* at 71.

The Commission affirmed our *Seabrook* decision in this respect without speaking as broadly as we had. CLI-78-1, 7 NRC 1, 23-29 (1978). Specifically, while agreeing with our general analysis of the statutory scheme (*id.* at 24-26), it held simply that "we should not go behind EPA's determinations unless compelled to do so" (*id.* at 28). (In the circumstances of the particular case, it found no such compulsion.) And the Commission did not decide that even that much deference would be paid to EPA decisions made in other contexts. That is, the Commission noted that there was no question then before it "as to how to treat other EPA actions reached through other [types of] proceedings" and expressly declined to speak to such questions (*id.* at 28, fn. 42).

As we read the totality of its *Seabrook* opinion, the Commission left open the possibility that a Board could refuse to follow EPA's lead in water-related matters. In the case now before us, the Board below stated explicitly that it did not agree with EPA's determination on the impact of the heat to be discharged from the plant. 7 NRC at 1064, ¶43. The case thus turns upon whether the Board was right in deferring entirely to EPA's judgment; this leads us to reexamine the question the Commission left open.

Since *Seabrook*, we have discussed this general subject on two other occasions. In both instances, we followed the course first charted in *Seabrook*. See *Tennessee Valley Authority* (Yellow Creek Units 1 and 2), ALAB-515, 8 NRC 702 (1978); and *Philadelphia Electric Company* (Peach Bottom Unit 3, ALAB-532, 9 NRC 279 (1979).

We need not repeat at length here what was said in those decisions. Suffice it to recall that in *Yellow Creek*, after an exhaustive analysis of the Water Act's legislative history (8 NRC at 706-12), we explained that it provided the following lessons (*id.* at 712-13):

¹² See *Peach Bottom*, ALAB-216, *supra*, 8 AEC at 46-56 (1974); *Public Service Company of New Hampshire* (Seabrook Units 1 and 2), ALAB-366, 5 NRC 39, 48-58 (1977), *affirmed*, CLI-77-8, 5 NRC 503, 508-09 (1977); see also CLI-78-1, 7 NRC 1, 24-26 (1978).

¹³ 33 U.S.C. 1371(c) (2).

The first is that the spread of Federal responsibility for water quality standards and pollution control among the various licensing agencies, which resulted from the reading given NEPA by the *Calvert Cliffs* court, has been curtailed. That responsibility is shifted to EPA as its exclusive province. The second is that the mandate to acquire "expertise" in developing, setting, and enforcing effluent limitations and water quality standards is also given to EPA; federal licensing agencies are to rely on that agency when such matters are involved and not develop duplicate expertise on their own. Third, those agencies are not to "second-guess" EPA by undertaking independent analyses and setting their own standards in this area. And, finally, given the pointed Congressional comments cited, NRC, as statutory successor to the AEC, is unmistakably bound by those strictures.

To be sure, in deciding whether to license specific projects, each agency must continue to weigh any resulting degradation of water quality in its NEPA cost-benefit balance. Section 511(c) (2) does not change this obligation. Rather, its intentment is to limit those agencies' NEPA roles to that balancing, leaving the substantive regulation of water pollution in EPA's hands.

On the basis of this analysis, we held squarely "that NRC may not undercut EPA by undertaking its own analyses and reaching its own conclusions on water quality issues already decided by EPA." 8 NRC at 715.

Although *Peach Bottom* did not present the same type of question and thus did not require extensive comment, we did not there depart from the rationale expressed in *Yellow Creek*. ALAB-532, *supra*, 9 NRC 279. And nothing we have learned since then would cause us to alter our thinking. If anything, events teach that the staff and Boards can best expend their limited resources by concentrating on those questions which only this Commission can handle, rather than by duplicating the efforts of a sister agency in a field peculiarly within that agency's competence. This is fully consistent with statutory mandates, for Congress stressed in the amended Water Act that it was to be implemented in a way that would avoid "needless duplication."¹⁴

In sum, Congress has designated EPA the Federal guardian of the quality of the nation's waters. That agency's decisions may turn out to be wrong in particular cases. But the remedy—as the Licensing Board properly appreciated—is not for us to substitute our judgment for EPA's. We are

¹⁴ 33 U.S.C. 1251(f), which reads as follows:

It is the national policy that to the maximum extent possible the procedures utilized for implementing this Act shall encourage the drastic minimization of paperwork and interagency decision procedures, and the best use of available manpower and funds, so as to prevent needless duplication and unnecessary delays at all levels of government.

bound to take EPA's considered decisions at face value, and simply to factor them into our cost-benefit balance. The Board below acted correctly in doing so.

3. The Board below, after considerable thought (see p. 559, *supra*), found that no uncontested matters were of such a serious nature as to warrant its formal attention. We have no difficulty accepting its conclusion, particularly in light of the fact that the staff advised the Board that no safety questions arising from the Three Mile Island accident would be made more serious by increasing the power level in the manner proposed (from 700 to 730 megawatts). Because the jurisdiction of the Board below and of this Board over safety matters extends here only to the proposed power increase, we do not examine to any other extent the implications of Three Mile Island.

4. Accordingly, we *affirm* the decision below except insofar as it dealt with the question of the environmental effects of radon emissions attributable to the mining and milling of uranium to fuel the plant. In line with the practice followed in earlier licensing cases that have reached us,¹⁵ our final disposition of this matter will abide the completion of the special proceeding, now pending before us, devoted to the radon question.¹⁶

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹⁵ See, e.g., *Virginia Electric and Power Company* (North Anna Units 1 and 2), ALAB-491, 8 NRC 245, 250 fn. 12 (1978); *Tennessee Valley Authority* (Yellow Creek Units 1 and 2), ALAB-515, 8 NRC 702, 715 (1978).

¹⁶ See *Philadelphia Electric Company* (Peach Bottom Units 2 and 3), ALAB-480, 7 NRC 796 (1978); ALAB-509, 8 NRC 679 (1978); ALAB-540, 9 NRC 428 (1979), *reconsideration denied*, ALAB-546, 9 NRC 636 (May 8, 1979); ALAB-562, 10 NRC 437 (September 10, 1979); and ALAB-566, 10 NRC 527 (October 11, 1979).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Marshall E. Miller, Chairman
Michael L. Glaser
Sheldon J. Wolfe

In the Matter of

**HOUSTON LIGHTING AND
POWER COMPANY, et al.**

**Docket Nos. 50-498A
50-499A**

(South Texas Project, Units 1 and 2)

**TEXAS UTILITIES GENERATING
COMPANY, et al.**

**Docket Nos. 50-445A
50-446A**

**(Comanche Peak Steam Electric Station,
Units 1 and 2)**

October 5, 1979

The Licensing Board issues a dispositive order explaining its earlier denial of applicants' motions for partial or full summary disposition of these two antitrust proceedings. The Board also denies the applicants' requests to certify the questions raised in their motions to the Commission or the Appeal Board pursuant to 10 CFR Sections 2.718(i) and 2.730(f).

**COMMISSION PROCEEDING: RES JUDICATA/COLLATERAL
ESTOPPEL**

Before the doctrine of collateral estoppel can be given effect as to a prior action, there must be present at least four elements: (1) the issue sought to be precluded must be the same as that involved in the prior action; (2) that issue must have been actually litigated; (3) it must have been determined by a valid and final judgment; and (4) the determination must have been essential to the prior judgment.

**COMMISSION PROCEEDING: RES JUDICATA/COLLATERAL
ESTOPPEL**

Where the legal standards of two statutes are significantly different, the decision of an issue under one statute does not give rise to collateral estoppel

in a litigation of a similar issue under a different statute. The same rule applies to attempts to invoke the doctrine of *res judicata*, under which a judgment on the merits in a prior suit bars a second suit involving the same parties or their privies based on the same cause of action.

ATOMIC ENERGY ACT: CRITERIA FOR ANTITRUST REVIEW

In a proceeding under Section 105c of the Atomic Energy Act, it is not necessary to show an actual violation of the antitrust laws.

ATOMIC ENERGY ACT: ANTITRUST JURISDICTION

Only the NRC is empowered to make the initial determination under Section 105c of the Atomic Energy Act whether activities under a license to construct or operate a nuclear power plant would create or maintain a situation inconsistent with the antitrust laws.

COMMISSION PROCEEDING: RES JUDICATA/COLLATERAL ESTOPPEL

Exceptions to the application of *res judicata* and collateral estoppel which are found in the judicial setting are equally applicable in administrative proceedings. One such exception is the existence of broad public policy considerations or special public interest factors which would outweigh the reasons underlying the doctrines.

ATOMIC ENERGY ACT: ANTITRUST JURISDICTION

Both the language and the legislative history of the Public Utilities Regulatory Policies Act of 1978 clearly establish that Congress did not intend to divest NRC or any other agency of any antitrust jurisdiction it may have under other statutes.

ATOMIC ENERGY ACT: ANTITRUST JURISDICTION

The Licensing Board's statutory responsibilities under Section 105c cannot be impaired or limited by a state agency.

ORDER REGARDING MOTIONS BASED UPON DECISION OF UNITED STATES DISTRICT COURT

On April 3, 1979, Houston Lighting and Power Company (HL&P) and Texas Utilities Generating Company, *et al.* (TUGCO), filed separate motions for partial or full summary disposition of these two antitrust proceedings. These motions were essentially based upon the decision of the United States District Court in *West Texas Utilities v. Texas Electric Service Company*, No. CA 3-76-0633-F (N. D. Tex.). In that Federal court decision, HL&P and the

Texas Electric Service Company (TESCO) were found not to have engaged in concerted action against Central Power and Light Company (CP&L) and West Texas Utility Company (WTU) in violation of Section 1 of the Sherman Act (15 U.S.C. §1).

HL&P filed a motion for summary decision, contending (1) that collateral estoppel should be applied against CP&L (although not against the Department of Justice, NRC Staff, Brownsville, or South Texas Electric Cooperative (STEC) or Medina Electric Cooperative (MEC)) and (2) that HL&P should be dismissed from the entire proceeding.

TUGCO filed two motions. In the South Texas proceeding, it moved to bar CP&L from seeking to obtain any relief inconsistent with the District Court decision, and for summary disposition in TUGCO's favor. In the Comanche Peak proceeding, TUGCO moved to dismiss Central and South West Cooperative (CSW) as a party intervenor or, in the alternative, for summary disposition, and for steps toward termination of the proceeding.

The City of Austin (Austin) filed its brief on the question of collateral estoppel to dispose of or limit the instant antitrust proceeding, which in effect sought to associate Austin with the relief requested by HL&P and TUGCO.

Responses in opposition to these motions were filed by the Department of Justice (Department), the Staff, the Public Utilities Board of the City of Brownsville, Texas (Brownsville), CP&L and CSW, and TEX-LA Electric Cooperative (TEX-LA). Arguments of counsel were heard at a conference held on June 1, 1979 (Tr. 217-321). By our Order entered on June 25, 1979, the parties were advised that these motions were denied, and that a dispositive order would be issued at a later date. The following opinion and decision constitutes that dispositive order.

I. RES JUDICATA AND COLLATERAL ESTOPPEL

A. Legal Principles

The major thrust of the instant motions is the termination or severe limitation of the scope of this proceeding as a result of the decision rendered in the U. S. District Court case, under the doctrines of *res judicata* or collateral estoppel. Although comparable in many respects, these related doctrines also have significant differences. The Supreme Court has thus described these principles:

Under the doctrine of *res judicata*, a judgment on the merits in a prior suit bars a second suit involving the same parties or their privies based on the same cause of action. Under the doctrine of collateral estoppel, on the other hand, the second action is upon a different cause of action and the judgment in the prior suit precludes relitigation of issues actually litigated and necessary to the outcome of the first action. 1B, J. Moore, *Federal Practice* 0.405[1], at 622-624 (2d ed. 1974); e.g., *Lawlor v. National Screen Serv. Corp.*, 349 U.S. 322, 326 (1955); *Commissioner v. Sunnen*, 33

U.S. 591, 597 (1948); *Cromwell v. County of Sac.*, 94 U.S. 351, 352-353 (1876).¹

The courts have further refined the concept of collateral estoppel to require at least four elements which must all be present before the doctrine can be given effect as to a prior action. These four elements are (1) the issue sought to be precluded must be the same as that involved in the prior action; (2) that issue must have been actually litigated; (3) it must have been determined by a valid and final judgment; and (4) the determination must have been essential to the prior judgment.² The party pleading collateral estoppel has the burden of proving that all the requirements of the doctrine are present.³

The Appeal Board, after an extensive review of judicial authorities considering *res judicata* and collateral estoppel, has held that in appropriate circumstances the doctrines may be given effect in NRC licensing proceedings. Thus, in *Alabama Power Company* (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210 (1974), remanded on other grounds, CLI 74-12, 7 AEC 203 (1974), the doctrines precluded a participant in the litigation of an issue decided in the construction permit proceeding, from raising the identical issue in an operating license proceeding involving the same reactor. However, it was expressly pointed out in that case that there "was no claim of either (1) significant supervening developments having a possible material bearing upon any of the issues previously adjudicated in the construction permit proceeding or (2) the presence of some unusual factor having special public interest implications (7 AEC at 216)." The Appeal Board observed that exceptions to the application of *res judicata* and collateral estoppel which are found in the judicial setting are equally applicable to administrative adjudication, such as competing public policy considerations involved in *Spilker v. Hankin*, 188 F.2d 35, 37-8 (D.C. Cir. 1951) or *Tipler v. E. I. du Pont de Nemours and Co.*, 443 F.2d 125, 128 (6th Cir. 1971). On this score it was noted that "Professor Davis has suggested a particular need for clothing an administrative agency with the discretion to decline to invoke these doctrines in the course of 'feeling its way into an undeveloped frontier of law and policy,' 2 Davis, *Administrative Law Treatise*, p. 566" (7 AEC at 215).

The Commissioners reviewed the foregoing *Alabama Power Company* case and remanded it for further development of facts as follows:

The principal focus of both the Licensing Board and Appeal Board in the current proceedings was whether the instant petition involved an attempt to relitigate precisely the same contentions as those resolved in the

¹ *Parklane Hosiery, Inc. v. Shore*, ____ U.S. ____, 99 S. Ct. 645, 58 L. Ed. 2d 552, 559, fn. 5. (1979).

² *Haize v. Hanover Ins. Co.*, 536 F.2d 576, 579 (3d Cir., 196); *Gulf Oil Corp. v. FPC*, 563 F.2d 588, 602 (3d Cir., 197); 1B Moore's Federal Practice 0.443[1] et seq.

³ 1B Moore *supra*, at 0.408[1], at 954.

construction permit proceedings; and, if so, whether the doctrines of *res judicata* and collateral estoppel should apply. This is the first case in which we have taken a close look at the applicability of these doctrines to our proceedings. In our view, an operating license proceeding should not be utilized to rehash issues already ventilated and resolved at the construction permit stage. Accordingly, we are in full agreement with the conclusion reached by the Appeal Board that '*res judicata* and collateral estoppel should not be entirely ruled out of our proceedings, but rather applied with a sensitive regard for any supported assertion of changed circumstances or the possible existence of some special public interest factors, in the particular case' Due regard for these considerations convinces us that a remand to the Licensing Board, established to rule on intervention petitions, is necessary in the circumstances of this case. Upon such remand, petitioner shall be afforded an opportunity to make a particularized showing of such changed circumstances or public interest factors as might exist with respect to this particular proceeding.⁴

In one of the *Seabrook* decisions, it was contended that the Appeal Board's refusal to grant a stay of the effect of the initial decision in an earlier phase of the proceeding was *res judicata* on a later stay motion. The so-called doctrines of repose were held precluded from operation because the issues involved in the two proceedings, "irreparable injury" to the environment versus any "significant adverse impact" upon the environment, were deemed to be dissimilar, and also because *res judicata* does not apply when the party seeking it had the benefit, when he obtained the prior ruling of a more favorable standard with respect to burden of proof than is later available to him.⁵

In *The Toledo Edison Company* (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), ALAB-378, 5 NRC 557 (1977), the city of Cleveland sought to preclude a certain law firm from representing one of the Applicants in an NRC antitrust proceeding, because of the firm's prior representation of the city in connection with municipal bond matters. The law firm moved to dismiss the disqualification proceeding on the grounds of collateral estoppel, based upon a federal district court decision which rejected the city's effort to disqualify the same law firm from representing the same electric utility in a pending civil antitrust proceeding in that court. The Appeal Board sustained the application of collateral estoppel, holding that "as a general matter, a judicial decision is entitled to precisely the same collateral estoppel effect in a later administrative proceeding as it would be accorded in a subsequent judicial proceeding" (5 NRC at 561). The common issue in the two

⁴ Alabama Power Company (Farley Units 1 and 2), CLI-74-12, 7 AEC 203-204 (1974).

⁵ Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-349, 4 NRC 235, 246, vacated on other grounds, CLI-76-17, 4 NRC 451 (1976).

proceedings was whether the Code of Professional Responsibility interdicted the law firm's representation of the public utility. It was held to be irrelevant that the NRC Staff and the Department of Justice were parties to the NRC antitrust proceeding, but not to the district court proceeding. The Staff, but not the Department, involved itself in the disqualification matter. The Appeal Board also stated:

It is quite true that 'when the legislative intent is to vest primary power to make particular determinations concerning a subject matter in a particular agency, a court's decision concerning that subject matter may be without binding effect upon that agency,' 2 Davis, *supra*, §18.12 at pp. 627-28. *cf. United States v. Radio Corporation of America*, 358 U.S. 334, 347-52 (1959). We agree, however, with the majority of the Special Board (NRCI-76/11 at 566) that that principle does not come into play in this case We discern no legislative purpose that this Commission resolve such an issue independently of a court's resolution of the same issue in an antitrust proceeding before it involving the same parties. (5 NRC at 561).

The Appeal Board also rejected the Staff's position regarding discretionary application of collateral estoppel, stating "nothing said by us in *Farley* suggests that, absent overriding competing public policy considerations (and here none has been shown), an administrative agency is free to withhold the application of collateral estoppel as a discretionary matter" (5 NRC at 563-64, fn. 7).

The effect of a state court decision interpreting certain provisions of an operating license regarding required governmental approvals, was considered by the Appeal Board in *Consolidated Edison Company of New York, Inc.* (Indian Point Station, Unit No. 2), ALAB-399, 5 NRC 1156 (1977). The Licensing Board had described the court's ruling as "somewhat" the law of the case. In reversing, it was stated that "[t]here is no collateral estoppel because the Commission Staff was not a party to the New York litigation." (5 NRC at 1167). It was held that even if the parties had been identical, the Commission would not be bound by a court decision in a collateral litigation. The Appeal Board further stated:

In discussing the problem of conflicting decisions on the same question by administrative agencies and courts, Professor Jaffe says: 'In cases where an order is directed to future relationships, the decision of that agency which has the major and continuing responsibility should prevail.' L. Jaffe, *Judicial Control of Administrative Action* 135 (1965). In the case at bar, that would mean that this Commission would have the primary responsibility for interpreting the terms of the license which it issued. (5 NRC at 1168, fn. 44)

The most recent discussion of the principles of collateral estoppel appears in the antitrust decision on the merits in *The Toledo Edison Company* (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), ALAB-560, 10 NRC (September 6, 1979). In that case, it was contended that a decision of the

Federal Power Commission favorable to an applicant on the issue of anticompetitive practices, should have been treated as a collateral estoppel. Finding that the standard which governed the FPC's decision on whether to order an interconnection was different from NRC's duty under Section 105c of the Atomic Energy Act, the Appeal Board said:

Where the legal standards of two statutes are significantly different, the decision of an issue under one statute does not give rise to collateral estoppel in a litigation of a similar issue under a different statute. See *United Shoe Machinery Corp. v. United States*, 258 U.S. 451 (1922), *In re Yarn Processing Patent Validity Litigation*, 498 F. 2d 271, 278-279 (5th Cir. 1974); *Tipler v. E. I. duPont deNemours & Co.*, 443 F.2d 125, 128-29 (6th Cir. 1971); *Pacific Seafarers, Inc. v. Pacific Far East Line*, 404 F. 2d 804 (D.C. Cir. 1968), *cert. denied*, 393 U.S. 1093 (1969). ALAB-560, 10 NRC 363

It also appeared that the Intervenor City obtained the primary relief it sought from the FPC, and that if the findings on anticompetitive conduct had gone the other way, it would not have made any difference in the relief granted. It was therefore stated:

Thus, the findings were not necessary to the Federal Power Commission's decision and therefore do not constitute collateral estoppel in later litigation. *Norton v. Larney*, 266 U.S. 511, 517 (1925); *Haize v. Hanover Ins. Co.*, 536 F.2d 576 (3rd Cir. 1976); *Lombard v. Board of Education of City of New York*, 502 F.2d 631, 637 (2d Cir. 1974); *Eastern Foundation Co. v. Creswell*, 475 F.2d 351 (D.C. Cir. 1973); *Fibreboard Paper Products Corp. v. East Bay Union of Machinists, Local 1304*, 344 F.2d 300, 306-07 (9th Cir.), *cert. denied*, 382 U.S. 826 (1965); Restatement (Second) of Judgments §68, Comment h (Tent. Draft No. 1, 1973). ALAB-560, 10 NRC 363-364

B. Identity of Issues and Standards

In applying the foregoing legal principles, consideration must be given to the comparability of the issues involved in the two proceedings when the application of *res judicata* or collateral estoppel is invoked. Issues are not identical if the second action involves the application of a different legal standard, even though the factual setting of both proceedings may be the same.⁶ Thus the same historical facts may be involved in two actions, but the legal significance of the facts may differ because different legal standards are applicable to them.⁷

⁶ *Peterson v. Clark Leasing Corporation*, 451 F. 2d 1291, 1292 (9th Cir. 1971); 1B Moore's Federal Practice at 0.443[2].

⁷ *James Talcott, Inc. v. Allahabad Bank, Ltd.*, 444 F.2d 451, 459, fn. 8 (5th Cir. 1971), *cert. denied* 404 U.S. 940 (1971).

Here, the District Court suit involved a civil action for injunctive relief by CP&L based upon alleged concerted refusals to deal by HL&P and TESCO, in violation of Section 1 of the Sherman Act (15 U.S.C. §1). The plaintiffs claimed that the defendants violated the Sherman Act "by having unlawfully combined, conspired or contracted between themselves and with others" to preclude the interstate flow of electricity (Pre-Trial Order, p. 1). The final order in that case prohibits CP&L from permitting electricity it receives from the South Texas Project to enter interstate commerce "as long as CP&L remains a participant in the STP agreement and as long as that agreement remains in force."

The instant proceeding involves a finding under Section 105c(5) whether the activities under the license would create or maintain a situation inconsistent with the specified antitrust laws (42 U.S.C. §2135(c)). Such an inquiry covers a broad range of activities considerably beyond the scope of the "violation" standard of Section 1 of the Sherman Act. It is well established that in a Section 105c proceeding, it is not necessary to show an actual violation of the antitrust laws.⁸ As the Joint Committee on Atomic Energy described it.

The concept of certainty of contravention of the antitrust laws or the policies clearly underlying these laws is not intended to be implicit in this standard; nor is the mere possibility of inconsistency. It is intended that the finding be based on reasonable probability of contravention of the antitrust laws or the policies clearly underlying these laws. It is intended that, in effect, the Commission will conclude whether, in its judgment, it is reasonably probable that the activities under the license would, when the license is issued or thereafter, be inconsistent with any of the antitrust laws or the policies clearly underlying these laws. (Joint Committee Report at 14-15)

In *Davis-Besse, supra*, the Appeal Board noted that "Of course, any violation of the antitrust laws also meets the less rigorous standard of Section 105c of the Atomic Energy Act—inconsistency with the antitrust laws" (Slip opinion at p. 207, fn. 277). It was also stated:

If the hearing record demonstrates with 'reasonable probability' that an anticompetitive situation within the meaning of Section 105c would result from the grant of an application, the Commission may refuse to issue a license or issue one with remedial conditions. Findings of actual Sherman or Clayton Act violations, however, are not necessary. Under Section 105c, procompetitive license conditions are also authorized to remedy situations inconsistent with the 'policies clearly underlying' the antitrust laws. (Footnotes omitted at p. 273)

⁸ Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-452, 6 NRC 892, 908-912 (1977).

The scope of Section 105c proceedings also includes consideration of Section 5 of the Federal Trade Commission Act, which permits proscription of unfair or deceptive business practices that infringe neither the letter nor the spirit of the Sherman and Clayton Acts.⁹ The Appeal Board has described the sweep of Section 105c antitrust review as follows:

It is to be recalled that in Section 5 proceedings proof of a full-blown violation of the Sherman or Clayton Acts is not required; there need only be shown a 'conflict with the basic policies of [those] Acts' (citing *FTC v. Brown Shoe Co.*, 384 U.S. 316, 321 (1966); *Atlantic Refining Co. v. FTC*, 381 U.S. 357, 369-70 (1965); *FTC v. Texaco, Inc.*, 392 U.S. 223 (1968); *L. G. Balfour Co. v. FTC*, 442 F. 2d 1, 9 (7th Cir. 1971) because, as has been explained, 'the Federal Trade Commission Act was designed to supplement and bolster the Sherman Act and the Clayton Act . . . to stop in their incipiency acts and practices which, when full blown, would violate those Acts . . . as well as to condemn as 'unfair methods of competition' existing violations of them.' *FTC v. Brown Shoe Co.*, 384 U.S. 316, 322 (1966), quoting *FTC v. Motion Picture Adv. Co.*, 344 U.S. 392, 394-95 (1953). Section 105c similarly applies to situations in conflict with the policies underlying the antitrust laws. Like Section 5 of the FTC Act, Section 105c was also designed by Congress to 'nip in the bud any incipient antitrust situation,' albeit via the NRC prelicensing review process. *Wolf Creek I*, *supra*, ALAB-279, 1 NRC at 572 (quoting the *Joint Committee Report*, p. 14). This similarity in purpose and standards leads us to agree with the staff that Section 5 precedents may be helpful guides to determining whether a situation not violative of the antitrust laws is, nevertheless, inconsistent with their underlying policies.¹⁰

There are substantial differences between the standards and issues involved in the Sherman Act, Section 1 suit based on restraint of trade by concerted action as alleged in the District Court litigation, when contrasted with the issues involved in this proceeding arising from allegations of monopolization (Sherman Act, Section 2), unfair methods of competition (FTC Act, Section 5), and inconsistency with underlying policies of antitrust laws (Section 105c). Where, as here, the legal standards of two statutes are significantly different, the decision of issues under one statute does not give rise to collateral estoppel in the litigation of similar issues under a different statute.¹¹ The same rule applies to attempts to invoke the doctrine of *res*

⁹ *FTC v. Sperry & Hutchinson Co.*, 405, U.S. 233, 239 (1972).

¹⁰ *Midland*, *supra*, 6 NRC at 911-12.

¹¹ *Davis-Besse*, *supra*, 10 NRC at 363. See *United Shoe Machinery Corp. v. United States*, 258 U.S. 451 (1922); *In re Yarn Processing Patent Validity Litigation*, 498 F. 2d 271, 278-79 (5th Cir. 1974); *Tipler v. E. I. duPont deNemours & Co.*, 443 F. 2d 125, 128-29 (6th Cir. 1971); *Pacific Seafarers, Inc. v. Pacific Far East Line*, 404 F. 2d 804 (D. C. Cir. 1968), *cert. denied*, 393 U. S. 1093 (1969).

judicata, where the question is whether the second suit is based on the same cause of action as that involved in the first suit.¹² The causes of action here, if that term is to be used, are significantly different in the District Court suit and this Section 105c proceeding.

C. Parties

It would be a violation of due process for a judgment to be binding on a litigant who was not a party nor privy to the prior litigation, and who therefore never had an opportunity to be heard.¹³ In recognition of this principle, HL&P has stated in its motion that no attempt is being made to apply collateral estoppel against the Department of Justice, the Staff, Brownsville, or STEC/MEC.¹⁴ However, HL&P also moves that as a matter of discretion, "this proceeding be dismissed as to HL&P for all purposes."¹⁵

There are strong public policy reasons why the Department and the Staff, as statutory parties to this proceeding, should not be collaterally estopped or hindered in conducting the full antitrust review under Section 105c which they have sought. The Commission has described the public interest implications of NRC antitrust review as follows:

The NRC's role is, in our view, something more than a neutral forum for economic disputes between private parties. One evidence we have of this flows from the role of the Attorney General and the express requirement that his views be obtained. If a hearing is convened, we think it should encompass all significant antitrust implications of the license, not merely the complaints of intervening private parties. If no one else performs this function, NRC staff should assure that a complete picture is presented to licensing boards.¹⁶

We agree with the Staff's position that a selective invocation of collateral estoppel to apply to CP&L and CSW would have only a procedural effect in this proceeding, because neither the Staff nor the Department was in privity with the parties in the District Court suit. Hence, either or both governmental

¹² Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-349, 4 NRC 235, 247(1976); The Toledo Edison Company (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), ALAB-378, 5 NRC 557, 563 (1977).

¹³ *Parklane Hosiery, Inc. v. Shore*, — U.S. —, 99 S.Ct. 645, 653-58 L.Ed. 2d 552 (1979); *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313, 329 (1971); *Hansberry v. Lee*, 311 U.S. 32, 40 (1940).

¹⁴ HL&P Motion, p. 10, fn. 10.

¹⁵ *Id.*, p. 32; Reply of HL&P, pp. 4-7, 20-27.

¹⁶ Florida Power and Light Company, (St. Lucie Plant, Unit NO. 2), CLI-78-12, 7 NRC 939, 949 (1978). See also *Scenic Hudson Preservation Conference v. F.P.C.*, 354 F.2d 608, 620-21 (2nd Cir. 1965), *cert. denied*, 384 U.S. 941 (1966); *Michigan Consolidated Gas Co. v. F.P.C.*, 283 F.2d 204, 226 (D.C. Cir. 1960), *cert. denied*, 364 U.S. 913.

parties could, and probably would, include in their presentation here a Sherman Act, Section 1 case against HL&P and TUGCO (Answer of Staff in Opposition to Motions, p. 6) Other Intervenor such as Brownsville are likewise not in privity with the parties in the court suit, and intend to assert a wide range of antitrust issues in this proceeding (Response of Brownsville, pp. 3-6).

Inasmuch as there will be an antitrust evidentiary hearing in this proceeding covering a wide range of complex issues among multiple parties, we see no advantage in applying collateral estoppel or *res judicata* to CP&L and CSW. On the contrary, a good deal of confusion and lost time would probably result from an effort to identify evidence which could be admitted as to some parties but not others. The activities under the license of all of the licensees will be analyzed in some detail to determine whether they will create or maintain a situation inconsistent with the antitrust laws. If the Department and the Staff are not collaterally estopped by the court action, as we hold, they may be assisted in presenting their evidence by having CP&L present an affirmative case. It is not unlikely that some witnesses would be used in common. Since there will be an evidentiary hearing in any event, there would be no "considerations of economy of judicial time"¹⁷ in applying collateral estoppel, but rather more time would probably be expended in attempting its selective application.

D. Issues Essential to Prior Judgment

One of the required elements for applying collateral estoppel is that the determination of the issues made in the first action was necessary and essential to the outcome of that prior action.¹⁸ The District Court in effect found that the so-called intrastate-only policy allegedly followed by the defendants neither "creates or maintains a situation inconsistent with the antitrust laws" (Section 105c), nor constitutes "an unfair method of competition" (Section 5, FTC Act). The Court had before it only one aspect of these proscriptions, that revolving around the issue of unreasonable restraint of trade under Section 1 of the Sherman Act. There were no allegations or issues concerning monopolization under Section 2 of the Sherman Act, or unfair methods of competition under Section 5. The Court's "additional findings" regarding Section 5¹⁹ and Section 105c²⁰ were unnecessary and immaterial to the determination of the Section 1, Sherman Act cause of action. Such findings may be regarded as *dicta*, to which collateral estoppel does not attach.²¹

¹⁷ Alabama Power Company (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, 212 (1974).

¹⁸ *Parklane Hosiery, Inc. v. Shore*, ___ U.S. ___, 99 S. Ct. 645, 58 L.Ed. 2d 552, 559, fn. 5 (1979); Alabama Power Company, *supra*, 7 AEC at 213.

¹⁹ Conclusion of Law #20.

²⁰ Conclusion of Law #22.

²¹ *Consumer Product Safety Commission v. Anaconda Co.*, ___ F.2d ___ (D.C. Cir., Jan. 31, 1979).

Only the Federal Trade Commission is empowered to make an initial finding whether a practice is an unfair method of competition under Section 5. The Supreme Court has stated:

A court cannot label a practice unfair under Section 5. It can only affirm or vacate an agency's judgment to that effect. If an order is valid only as a determination of policy or judgment which the agency alone is authorized to make and which it has not made, a judicial judgment cannot be made to do service for an administrative judgment. *SEC v. Chenery Corp.*, 318 U.S. 80, 92 (1943).²²

Similarly, only the NRC is empowered to make the initial determination under Section 105c whether activities under the license would create or maintain a situation inconsistent with the antitrust, and if so what license conditions should be required as a remedy. The Commission has thus described the statutory policy regarding NRC antitrust review:

But other policies are also reflected in Section 105c, viz, that a government-developed, monopoly-like nuclear power electricity generation not be utilized in ways which contravene the policies contained in the various antitrust acts. Section 105c is a mechanism to allow the smaller utilities, municipals, and cooperatives access to the licensing process to pursue their interests in the event that larger utility applicants might use a government license to create or maintain an anticompetitive market position.²³

Since the NRC and not the court has been given the responsibility of making the "inconsistent with" findings and possible license conditions under Section 105c, the District Court findings in this regard are not binding here. It is not necessary for us to decide whether the District Court exceeded its jurisdiction in making such findings, as argued by the Staff,²⁴ the Department,²⁵ Brownsville,²⁶ and CP&L and CSW.²⁷ It is sufficient to hold that the doctrines of collateral estoppel and *res judicata* do not apply to these findings.

E. Exceptions Based on Public Policy

It has been recognized by both the Appeal Board and the Commission that exceptions to the application of *res judicata* and collateral estoppel which are found in the judicial setting, are equally present where administrative adjudication is involved. One such exception is the existence of broad public

²² *FTC v. Sperry & Hutchinson Co.*, 405 U.S. 233, 249 (1972).

²³ *Florida Power & Light Co. (St. Lucie Plant, Unit No. 2)*, CLI-78-12, 7 NRC939, 946 (1978).

²⁴ Answer of the NRC Staff, pp. 5, 9.

²⁵ Response by the Department of Justice, p. 26.

²⁶ Response of the Public Utilities Board, pp. 10, 27.

²⁷ Answer of Central Power and Light Company, p. 11.

policy considerations or special public interest factors which would outweigh the reasons underlying the doctrines.²⁸ The unique nature of NRC antitrust review as linked to licensing considerations, constitutes such a special public interest factor in this context.

In *South Texas*, the Commission held that Congress intended that it should review antitrust allegations “primarily, if not exclusively, in the context of licensing”²⁹ Although holding that in the field of antitrust NRC’s expertise is not unique and that it was not given broad antitrust policing powers independent of licensing, its special role in this area was thus described:

Through the licensing process, we can effectuate the special concern of Congress that anticompetitive influences be identified and corrected in their incipiency. No nuclear power can be generated without an NRC license and the licensing process thereby allows us to act in a unique way to fashion remedies, if we find that an applicant’s plans may be inconsistent with the antitrust laws or their underlying policies.³⁰

This unique function of the NRC licensing process also involves making a judgment or estimate as to the future, in considering what effect activities under the license would have on the competitive situation. The regulatory scheme established by Congress in Section 105c proceedings was designed to “nip in the bud any incipient antitrust situation,” albeit via the NRC licensing review process.³¹ As Professor Davis has observed, “when the legislative intent is to vest primary power to make particular determinations concerning a subject matter in a particular agency, a court’s decision concerning that subject matter may be without binding effect upon that agency.” (2 Davis, *Administrative Law Treatise*, Section 18.12 at 627-28 (1958))

The Appeal Board has quoted with approval the above observation of Professor Davis, although it was held not applicable to a claim by the city of Cleveland that a law firm which had formerly represented it in bond matters, should be precluded from representing an opposing applicant in an NRC antitrust proceeding.³² In that case, there was no discernible legislative purpose that NRC only should resolve such a common issue, involving the construction of the Code of Professional Responsibility as interdicting the law firm’s representation of another client.³³ The facts in that case are quite

²⁸ Alabama Power Company, *supra*, 7 AEC at 203-04, 213-16.

²⁹ Houston Lighting & Power Company, *et al.* (South Texas Project, Unit Nos. 1 and 2), CLI-77-13, 5 NRC 1303, 1316 (1917).

³⁰ *Id.*, at 1316. See also Davis-Besse, *supra*, 10 NRC 284.

³¹ Midland, *supra*, 6 NRC at 912, See also Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit NO. 1), ALAB-279, 1 NRC 559, 571-72 (1965).

³² The Toledo Edison Company, *supra* at p. 5, 5 NRC at 561.

³³ *Id.*, at 562.

different from the instant situation. That issue concerned a rather peripheral matter which did not essentially involve the unique NRC role in a Section 105c proceeding. Here, the very nature of the NRC antitrust review and the significant responsibilities borne by the Department and the Staff, evoke special public interest factors which preclude the application of collateral estoppel or *res judicata*.

II. OTHER STATUTES, OTHER PROCEEDINGS

The moving parties additionally argue that the enactment of PURPA³⁴ and its vesting of FERC with the power to order wheeling and interconnection, eliminates the need for a Section 105c antitrust review involving allegations of anticompetitive conduct and requests for interconnection and wheeling. However, the legislative history³⁵ and the language of PURPA³⁶ clearly establish that it was not intended to divest NRC or any other antitrust tribunal of jurisdiction, nor to require deferral of such matters to FERC. During Senate consideration of the Conference Report, Senator Metzenbaum, a manager of the bill and a member of the conference committee, stated:

It was not the intent of the conferees to modify in any way the rights of parties in presenting and prosecuting allegations of anticompetitive conduct before the Federal and State courts, or before administrative agencies, including the FERC and the Nuclear Regulatory Commission. Both have legal obligations to consider antitrust issues. Where any of these agencies presently have the authority to order transmission, coordination, or other relief pursuant to a finding of anticompetitive conduct, undue discrimination or unjust and unreasonable rates, terms, conditions or the like, this authority would not be disturbed. The act does not limit the present authority of these agencies in this regard.

"Thus, a party which has been denied wheeling services for anticompetitive reasons will not be hindered by this legislation from proceeding in the Federal courts or elsewhere. Likewise, the authority of the NRC in conducting an antitrust review under the provisions of the Atomic Energy Act of 1954, as amended, would not be affected by this extremely limited wheeling authority granted to FERC under this new legislation. These two agencies are charged with different responsibilities with respect to wheeling. FERC's new authority is conditioned on conservation, efficiency, reliability, and public interest. NRC's authority relates to correcting or preventing a situation inconsistent with the antitrust laws." (124 Cong. Rec. 517, 802 (daily ed., October 9, 1978))

³⁴ Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (1978).

³⁵ House Rep. No. 95-1750, 95th Cong., 2d Sess. at 68, 92.

³⁶ Section 214 of PURPA.

Accordingly, it cannot be held that proceedings by FERC based upon this statute in any way supersede the instant NRC proceeding.

The moving parties next cite the order issued by the Texas Public Utility Commission (TPUC) in its Docket No. 14, to support their contention that this NRC proceeding should be terminated. The TPUC order required CP&L to disconnect its radial tie into Oklahoma, which had put it and other interconnected utilities into interstate commerce. This order is presently under vigorous attack in state and federal courts, based on the constitutional considerations of a state placing an undue burden on interstate commerce.³⁷ We do not need to decide grave constitutional issues, but we hold that our statutory responsibilities under Section 105c cannot be impaired or limited by a state agency. We do not assume that TPUC would take any action resulting in unnecessary confrontation.

The movants have also cited the injunction issued by the District Court as another reason to terminate or sharply limit the instant proceeding. That order provides in pertinent part that "CP&L is hereby permanently enjoined from permitting power it receives from STP to enter interstate commerce as long as CP&L remains a participant in the STP Agreement and as long as Section 8.2 of that agreement remains in force." Since it is contended that Section 8.2 of the participation agreement is inconsistent with the antitrust laws by its intrastate commerce limitation, this Board could, if the evidence required it, approved a license condition excising or reforming that section of the agreement. The District Court's injunction does not bar NRC remedies, nor require the dismissal of this proceeding.

For the foregoing reasons, the motions of HL&P and TUGCO are denied. We are not persuaded that interlocutory review is necessary or appropriate and hence decline the requests to certify the questions raised in these motions to the Commission or the Appeal Board (10 CFR Sections 2.718(i), 2.730(f)).

It is so ordered.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Marshall E. Miller, Chairman

Dated at Bethesda, Maryland
this 5th day of October 1979.

³⁷ In addition to proceedings in the state district court of Texas, the State of New Mexico has petitioned the United States Supreme Court to hear this case under its original jurisdiction (*New Mexico v. Texas*, Original Action No. 82).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

**Herbert Grossman, Chairman
Dr. Harry Foreman
Gustave A. Linenberger, Jr.**

In the Matter of

**Docket Nos. 50-70
70-754**

GENERAL ELECTRIC COMPANY

**(GE Test Reactor,
Vallecitos Nuclear Center)**

October 9, 1979

In response to a request to determine whether it is proper for a congressman to appear in the proceeding and, if so, whether a non-attorney member of his staff may represent him, the Licensing Board rules that (1) in the circumstances presented participation in the proceeding by the congressman does not violate, *prima facie*, 18 USC Sections 203 and 205; and (2) under 10 CFR Section 2.713(a) the congressman must appear either personally or by a properly authorized attorney-at-law.

RULES OF PRACTICE: RIGHT TO PARTICIPATE

Intervention as of right is afforded only to those who might suffer an injury in fact by the possible outcome of the proceeding, *Nuclear Engineering Company, Inc.* (Sheffield Low-Level Radioactive Waste Disposal Site), ALAB-473, 7 NRC 737 (1978). 10 CFR Section 2.715(c) requires that representatives of an interested state, county, municipality, or agency thereof be afforded a reasonable opportunity to participate in the proceeding but that Section does not extend to congressmen.

RULES OF PRACTICE: REPRESENTATION

A person may appear in a Commission adjudicatory proceeding either on his own behalf or by an attorney-at-law. 10 CFR Section 2.713(a). A congressman admitted to a proceeding as an individual must appear personally or by an attorney; he may not be represented by a non-attorney member of his staff.

MEMORANDUM AND ORDER

The Board has been requested to determine whether Congressman Ronald

V. Dellums may properly appear in this proceeding and, if so, whether a non-attorney member of his staff may represent him. Congressman Dellums had petitioned to intervene and was admitted to the proceeding as a party at the prehearing conference held on March 16, 1978 (Tr. 22, 26). Although the Congressman, through his representative, had asserted two interests in the proceedings, a personal interest in that Congressman Dellums resided and maintained his offices within 25 to 30 miles of the facility and an interest on the basis of his representation of constituents who resided in the area (Tr. 20-22), the Board made no determination in admitting him as to whether his status as a congressman representing affected constituents gave him standing, since his personal residence within the stated area was sufficient.

On May 18, 1978, the Acting General Counsel for the NRC wrote the prior Board Chairman to indicate that Title 18 U.S.C., Sections 203 and 205, may prohibit congressmen or their representatives from participating in the proceeding unless such participation is part of a congressman's official governmental duties, and to suggest that the Board might "wish to take steps to clarify whether the Congressmen¹ are participating in their official capacities."

On May 24, 1978, Congressman Dellums notified the Board that he had received the Acting General Counsel's memorandum and was soliciting the opinions of the Attorney General of the United States and the Select Committee on Ethics of the House of Representatives, and would "be bound by their determination on the issue." Congressman Dellums corresponded further with the Board on June 12, 1978, requesting that "the Panel undertake to determine that my staff is indeed capable of representing me in these proceedings."

Mr. Dellums posed, as the basic question, whether 10 CFR Section 2.713(a) proscribes a member of his staff from representing him in the proceedings. He asserted that the decision to involve himself and his office was sparked by constituent requests; that his involvement in the case is "directly analogous to that of a corporation or non-profit organization," and that, therefore, his staff should be capable of representing him.

In response to a further request of the Board dated October 3, 1978, Congressman Dellums reported further to the Board on October 26, 1978 with regard to his communications with the House Committee on Ethics and the Attorney General of the United States. According to the Congressman, the House Committee chose not to respond to his inquiry because, in its opinion, the matter was not one over which it had jurisdiction. He also enclosed a copy

¹ By order of the Board, dated April 19, 1978, Congressmen Philip Burton and John L. Burton were admitted as parties and their participation consolidated with that of Congressman Dellums. For simplicity, only Congressman Dellums will be referred to, although this Memorandum and Order affects all three Congressmen equally.

of an opinion given by the Criminal Division of the Department of Justice in response to the Congressman's request of the Attorney General which opined that there were no violations of 18 U.S.C. Section 203, and no violations of 18 U.S.C. Section 205 by the Congressman, but that, since the Congressman's appearance before the Board was allowed in part because of his status as a private citizen, his staff member's representation of him in that private capacity could present possible problems under Section 205. The letter by the Department of Justice took pains to emphasize that it was merely an informal expression of the Department's views.

As we see the matter before the Board, the question is whether Congressman Dellums and/or his representative are prohibited from appearing in this proceeding by either 18 U.S. C. Section 203 or Section 205, or 10 C.F.R. Section 2.713(a).

Possible Violations of Title 18 of the U.S. Code

We turn first to Title 18 of the U.S. Code Section 203 and Section 205, which the Acting General Counsel suggests may prohibit the Congressman and members of this staff from appearing in this action unless the Congressman is participating in his official capacity as a Congressman.

Section 203(a)² imposes criminal penalties upon members of Congress and other Government officials for receiving or soliciting compensation for services rendered other than in the proper discharge of official duties in

² Section 203. *Compensation to Members of Congress, Officers, and others in matters affecting the Government*

(a) Whoever, otherwise than as provided by law for the proper discharge of official duties, directly or indirectly receives or agrees to receive, or asks, demands, solicits, or seeks, any compensation for any services rendered or to be rendered either by himself or another—

(1) at a time when he is a Member of Congress, Members of Congress Elect, Delegate from the District of Columbia, Delegate Elect from the District of Columbia, Resident Commissioner, or Resident Commissioner Elect; or

(2) at a time when he is an officer or employee of the United States in the executive, legislative, or judicial branch of the Government, or in any agency of the United States, including the District of Columbia.

In relation to any proceeding, application, request for a ruling or other determination, contract, claim, controversy, charge, accusation, arrest, or other particular matter in which the United States is a party or has a direct and substantial interest, before any department, agency, court-martial, officer, or any civil, military, or naval commission, or

(b) Whoever, knowingly, otherwise than as provided by law for the proper discharge of official duties, directly or indirectly gives promises, or offers any compensation for any such services rendered or to be rendered at a time when the person to whom the compensation is given, promised, or offered is or was such a Member, Delegate, Commissioner, officer, or employee—

Shall be fined not more than \$10,000 or imprisoned for not more than two years, or both; and shall be incapable of holding any office of honor, trust, or profit under the United States.

proceedings in which the United States is a party or has a substantial interest. Section 203(b) imposes those penalties upon anyone who offers or pays the compensation to the Government official for the services.

Section 205(a)³ imposes criminal penalties upon a Government official who acts as an agent or attorney, other than in the proper discharge of official duties, in a proceeding in which the United States is a party or has a substantial interest.

At first blush, we are tempted to avoid the issue since Title 18 is a criminal code, and we are not charged with its enforcement. Nor, are we impressed with the suggestion (NRC General Counsel's letter of May 18, 1978) that we take steps to clarify whether the Congressmen are participating in their official capacities or as private citizens for the purpose, presumably, of laying the groundwork for further proceedings with other authorities concerning possible criminal violations. We would decline to take such action unless it had some importance to the Board's mandate.

It is only because the Board must determine the question for itself, that we specifically decide the issues raised by 18 U.S.C. Section 203 and Section 205 as a *prima facie* matter. For although the Board is not charged with determining violations of Title 18 U.S.C., it is the duty of the Board not to permit any violation in its presence nor to give sanction to it. See, *In re Winthrop*, 31 Ct. Cl. 35 (1895); *Tyler's Case*, 18 Ct. Cl. 25 (1883).

On the question of "standing", we have little trouble deciding that it was based upon the Congressman's personal interest and not his status as a congressman. Under 10 CFR Section 2.714, only a "person whose interest may be affected by a proceeding" has a right to intervene. The Appeal Board has recently affirmed the Commission's position that under Section 189a of the Atomic Energy Act, 42 U.S.C. Section 2239(a), and Section 2.714(a) of the Rules of Practice, a petitioner has a right to intervene only when it appears from the petition that he will be, or might be, injured in fact by one or more of

³ 18 U.S.C. Section 205 provides, in pertinent part:

Section 205. Activities of Officers and employees in claims against and other matters affecting the Government

Whoever, being an officer or employee of the United States in the executive, legislative, or judicial branch of the Government or in any agency of the United States, including the District of Columbia, otherwise than in the proper discharge of his official duties—

(1) acts as agent or attorney for prosecuting any claim against the United States, or receives any gratuity, or any share of or interest in any such claim in consideration of assistance in the prosecution of such claim, or

(2) acts as agent or attorney for anyone before any department, agency, court, court-martial, officer, or any civil, military, or naval commission in connection with any proceeding, application, request for a ruling or other determination, contract, claim, controversy, charge, accusation, arrest, or other particular matter in which the United States is a party or has a direct or substantial interest—

Shall be fined not more than \$10,000 or imprisoned for not more than two years, or both.

the possible outcomes of the proceeding. *Nuclear Engineering Company, Inc.* (Sheffield Low-Level Radioactive Waste Disposal Site; ALAB-473, 7 NRC 737, 740 (1978)). The only exception to the rule that intervention is granted as a matter of right only to a person who can show an injury in fact is found in 10 CFR Section 2.715(c), which requires that representatives of the State or municipality be afforded a reasonable opportunity to participate in a proceeding. That rule does not extend to congressmen. Here, Congressman Dellums has not alleged any injury in fact to him as a congressman and was admitted only because of his residence and employment within the affected area. We were not asked to, nor did we, grant the Congressman intervention as a matter of discretion, as permitted in *Portland General Electric Company* (Pebble Springs Nuclear Plant), CLI-76-27, 4 NRC 610 (1976), on his claimed interest as a congressman. On the basis of the factors listed by the Commission in that proceeding (4 NRC, p. 616), in order to permit intervention as an exercise of the Board's discretion, we would have to find, in general, that the Congressman's participation would significantly add to the development of a sound record or to the protection of his interest beyond what is already provided by the intervention of Friends of the Earth.

Be that as it may, we do not find that the basis of the Congressman's standing is determinative of the issue of violation of the criminal prohibitions of Sections 203 and 205 of title 18 U.S.C., since both Sections include in the prohibited activities only acts that are other than in the "proper discharge of official duties." In our opinion, the Congressman's compliance with that requirement is not affected by the basis of his standing in the case, but only by the scope of his congressional duties. In this respect, we have no reason to dispute the Congressman's contention that his decision to intervene was "sparked by constituent requests" (letter of June 12, 1978) and that one of his responsibilities is to represent the interest of residents of his district before the Federal Government and its agencies [Prehearing Conference (Tr. 21); Response of Intervenors Dellums and Friends of the Earth to Licensing Board's questions of June 18, 1979, dated July 13, 1979, p. 1]. We are not persuaded by the suggestion of the Staff (NRC Staff response to Board Order, July 13, 1979, pp. 2-3) and the Licensee (General Electric's Response to the Licensing Board's Order dated July 13, 1979, p. 4, fn. 2) that the Congressman cannot represent the interests of his constituents because they did not authorize him by majority vote to represent them. We note that the objection of the Staff and Licensee to considering the Congressman as representing his constituents in this proceeding was directed towards the question of standing, not towards defining the scope of his activities as a congressman, which is the focus of the criminal statutes. It is not for us to conform a congressman's activities to a consensus of his constituency or to otherwise intrude upon a legislator's prerogative to decide what is in the public interest in performing his official duties. We think it sufficient that the Congressman believe in good

faith that he is representing the best interests of his constituents in a matter of public interest, which we accept as the case here, for us to determine that he is acting within the scope of his official duties, although that determination alone would not give him standing to intervene as a matter of right absent an allegation of injury in fact to him.

In summary, the provisions of Title 18 U.S.C. are independent of the Commission's rules of standing. Under 18 U.S.C. Section 203 and Section 205, we find no *prima facie* case for excluding the Congressman or his staff member from appearing before the Board on the asserted grounds that such appearance is otherwise than in the proper discharge of the official duties of the Congressman or his staff.

Having made the preliminary determination that we are not sanctioning any violation of these statutes by allowing the Congressman or a staff member to appear before us, we resolve that matter to our satisfaction at this time. If, in the future, some agency or tribunal which, unlike the Board, is charged with prosecuting or determining a violation of Title 18, takes some official action in this matter, we may reconsider our determination.

Representation by a Non-Attorney Under 10 CFR Section 2.713(a)

Having decided that the participation of Congressman Dellums or a duly authorized representative does not violate the criminal provisions of 18 U.S.C., we now proceed to the question of whether the Congressman can be represented by a non-attorney. In this regard, 10 CFR Section 2.713(a) states, in pertinent part, as follows:

(a) Representation. A person may appear in an adjudication on his own behalf or by an attorney-at-law in good standing admitted to practice before any court of the United States, the District of Columbia, or the highest court of any State, territory, or possession of the United States.

No attempt is made here to suggest that the Congressman's representative qualifies as an attorney-at-law. Rather, the Congressman relies (letter of June 12, 1978) upon his involvement's being "no different than that of an organization or corporation," which he submits would be entitled to being represented by a member of its staff who is not an attorney. In their response to the Licensing Board's questions of June 18, 1979, Congressman Dellums and Friends of the Earth cite *Duke Power (Catawba Nuclear Station, Units 1 and 2)*, LBP-73-28, 6 AEC 666 (1973), which held that a non-profit corporation was properly represented by a non-attorney member of the organization, as supporting their position that a congressman can be represented by a non-attorney. According to them, the Congressman's inability to appear personally because his primary duties as a congressman require him to attend legislative matters in Washington is similar to the corporation's not being able to appear personally in *Catawba*.

We do not read *Catawba* LBP-73-28, or any of the subsequent proceedings before this Commission which permitted organizations to be represented by

non-attorney members, as permitting such an appearance in a representative capacity. We see those non-attorney members as having appeared as the "person . . . on his own behalf," and not as a representative of that person. Because the "person" admitted was a group, any properly authorized member of that group could appear as that person. No case has been cited to us in which an individual who was not a member of a group was permitted to appear where he was non-attorney.

In the instant case, we are not dealing with a group admitted as a person. Neither Congress, nor Congressman Dellums' staff, sought to be admitted in this action. Congressman Dellums was admitted as an individual and must appear on his own behalf or by the only type of representative, an attorney-at-law, that the rules permit to appear in a representative capacity.

Nor are we persuaded that we should permit the Congressman to be represented by a non-attorney staff member in an exercise of the Board's discretion in order to facilitate his prosecution of the intervention in view of the Congressman's other obligations as a legislator in Washington. (Response of Intervenors Dellums and Friends of the Earth, dated July 13, 1979, pp. 1-2). Under the Rules, Congressman Dellums' choice is not between appearing on his own behalf and having a non-attorney staff member represent him, but between appearing on his own behalf and employing a qualified attorney-at-law to represent him. The Commission's Rules assume that Board proceedings would be enhanced by requiring that a person acting in a representative capacity be schooled in the presentation of matters to a court of law. In view of the multi-party actions usually conducted by the Board, we do not find those rules unreasonable even if other agencies, where the parties may be less numerous, do not impose such strict requirements. To the extent that the Congressman may wish to retain experts in technical areas to assist him in preparing his case, we would only encourage that practice, considering the highly technical nature of the matters before the Board. In this regard, we would also point out, without suggesting that the Congressman's representative fits the qualifications, that 10 CFR Section 2.733 permits the use of qualified experts to participate in the examination of witnesses. On the other hand, if the Congressman views the scope of his congressional obligations as encompassing his participation in administrative hearings, he should retain staff who satisfy the administrative requirements.

IT IS ORDERED that Congressmen Dellums, Phillip Burton and John L. Burton be permitted to continue their intervention in this proceeding. Hereafter, all pleadings and communications to the Board shall be signed by Congressman Dellums or a properly authorized attorney-at-law, and appearances shall be made in a similar fashion.

A prehearing conference will be scheduled approximately three weeks after receipt of the final staff report in order to determine the course of further proceedings.

Board members Dr. Harry Foreman and Gustave A. Linenberger concur
in this Memorandum and Order.
BY THE ORDER OF THE BOARD

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Herbert Grossman, Chairman

Dated at Bethesda, Maryland
this 9th day of October, 1979

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Oscar H. Paris
Glenn O. Bright

In the Matter of

**PENNSYLVANIA POWER AND
LIGHT COMPANY**

**Docket Nos. 50-387
50-388**

**and
ALLEGHENY ELECTRIC COOPERATIVE, INC.**

**(Susquehanna Steam Electric Station,
Units 1 and 2)**

October 19, 1979

The Licensing Board grants in part and denies in part the intervenor's petition for reconsideration of an order rejecting a contention regarding the consequences of "Class 9" accidents, which the intervenor seeks to litigate in this operating license proceeding.

**NEPA: SCOPE OF INFORMATION REQUIRED FOR LICENSING
(CLASS 9 ACCIDENTS)**

The proposed Annex to former Appendix D of 10 CFR Part 50 (dealing with "Consideration of Accidents in Implementation of the National Environmental Policy Act of 1969"), published at 36 Fed. Reg. 22851 (December 1, 1971), is entitled to be accorded greater weight than would normally be given to a proposed regulation. *See Consumer Power Company* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 347 (1973).

**NEPA: SCOPE OF INFORMATION REQUIRED FOR LICENSING
(CLASS 9 ACCIDENTS)**

General consideration of the consequences of Class 9 accidents at land-based plants would be inconsistent with Commission policy as expressed in the proposed Annex to former Appendix D of 10 CFR Part 50. Particular Class 9 accidents may be considered upon an affirmative showing, as contemplated by the Annex, of the probability of occurrence of such an accident.

MEMORANDUM AND ORDER CONCERNING CLASS 9 ACCIDENT CONTENTION

On August 30, 1979, the Susquehanna Environmental Advocates (SEA), an intervenor in this operating license proceeding, filed a "Petition For Modification of Special Prehearing Conference Order" which asked us to reconsider our earlier ruling which rejected as an issue in controversy SEA's contention which sought to litigate the consequences of so-called "Class 9" accidents. In responses dated September 19, 1979 and September 27, 1979,¹ respectively, the NRC Staff and the Applicants each opposed the requested modification. No other party has filed a response to the petition. For reasons hereinafter set forth, we grant in part and deny in part SEA's petition.

1. Before turning to the petition before us, we believe it desirable first to review what a "Class 9" accident is. As explained by the Appeal Board in *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 346-48 (1973), the "Class 9" designation stems from the Commission's December, 1971 proposed rulemaking entitled "Consideration of Accidents in Implementation of the National Environmental Policy Act of 1969" (NEPA), published at 36 Fed. Reg. 22851 (December 1, 1971). That proposal recognized that NEPA, as construed by the Commission, requires a discussion of at least certain types of accidents as part of the environmental review conducted for reactor licensing. *Midland, supra*, 6 AEC at 346. It would have added an Annex to 10 CFR Part 50, Appendix D, the Commission's then-existing rules governing the implementation of NEPA in licensing proceedings, to delineate the manner in which various categories of accidents should be taken into account in that environmental review.

In the proposed Annex, the Commission divided the theoretical spectrum of accidents — ranging from the most trivial to the potentially most serious — into 9 separate categories or classes. Under the Annex, each class is "characterized by an occurrence rate and a set of consequences." And each class of accidents, save Classes 1 and 9, is required to be analyzed as part of environmental reports and statements. Class 1 accidents "need not be considered because of their trivial consequences." Accidents falling in Classes 2 through 8 are stated to have "significant adverse environmental effects" and are to be "evaluated as to probability, or frequency of occurrence, to permit estimates to be made of environmental risk or cost . . ." The most severe of the accidents to be evaluated, those in Class 8, are generally described as

¹ Although SEA's petition includes a statement that all parties were served, the Applicants claim they did not receive the petition from SEA but rather were furnished a copy by the NRC Staff. In addition, not all of the Board members were personally served. We remind SEA that motions such as this must be furnished to all parties, as well as the Board and the Commission's Secretary (10 CFR Section 2.730(a)). In this instance, we will consider the petition and will accept the Applicants' response as timely filed.

“Accident Initiation Events Considered in Design Basis Evaluation in the Safety Analysis Report.” According to the Annex, such events “are used, together with highly conservative assumptions, as the design-basis events to establish the performance requirements of engineered safety features.” See *Long Island Lighting Company* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 834 (1973). In other words, from a safety standpoint, a plant must be designed either to preclude or minimize the occurrence, or to mitigate the consequences, of a Class 8 accident.

Accidents in Class 9 cannot be defined in terms of any particular sequence of events or occurrences or types of failure. Rather, they embrace the totality of “more severe” accidents — of many different sorts — which do not fall within the other classes. They represent “an indefinable number of conceivable types of accidents which are more severe than the design basis accidents of Class 8.” *Id.* at 834-35. According to the Annex, these events including their consequences, need not be discussed for the following reasons:

The occurrences in Class 9 involve sequences of postulated successive failures more severe than those postulated for the design basis for protective systems and engineered safety features. Their consequences should be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defense in depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low.

2. SEA asks us to reconsider the portion of our Special Prehearing Conference Order of March 6, 1979, LBP-79-6, 9 NRC 291, in which we rejected SEA’s Contention 10. *Id.* at 323-24. In relevant part, that contention reads:

A serious accident at the plant site involving a major release of radiation and the consequences of this are not even discussed in the ER or the FSAR of PP&L. Studies showing that the risk is so small that this does not even need to be discussed are irrelevant. These studies have been in large part discredited and regardless of the extent of the risk the extent of the possible damage demands discussion of this possibility.

We want to know the consequences of such an accident in terms of the health, welfare, and employment of people of the Wyoming Valley Area.²

² The remainder of the contention concerns the payment of monetary costs of a Class 9 accident. We earlier rejected that part of the contention as an impermissible challenge to the Price Anderson Act, 9 NRC at 324; nothing in SEA’s current petition takes issue with that ruling, and we therefore need not further discuss it here.

The basis we assigned for rejecting the foregoing portion of SEA's Contention 10 was as follows:

SEA 10: This contention seeks a discussion of the consequences of a "serious" (presumably Class 9) accident. As a basis, it cites the recent "discredit[ing]" of studies indicating that the risks of such an accident are small. Although not identified, the allegedly discredited study is undoubtedly that represented by WASH-1400, with respect to some conclusions of which the Commission has recently withdrawn its endorsement. Nonetheless, the Commission has, since long before WASH-1400, taken the position that the consequences of such accidents need not be discussed because of the low probability of their occurrence, and this position has been upheld by the courts. *Porter County Chapter v. AEC*, 533 F.2d 1011, 1017-18 (7th Cir.), cert. denied, 429 U.S. 945 (1976); *Carolina Environmental Study Group v. AEC*, 510 F.2d 796 (D.C. Cir. 1975); *Ecology Action v. AEC*, 492 F.2d 998 (2d Cir. 1974); see also *Offshore Power Systems (Floating Nuclear Power Plants)*, ALAB-489, 8 NRC 194 (1978); *Long Island Lighting Company (Shoreham Nuclear Power Station)*, ALAB-156, 6 AEC 831 (1973). The policy in no manner was premised upon the results of WASH-1400. Moreover, unless and until repudiated by the Commission, the policy is binding upon us.

SEA would now have us abrogate this ruling as a result of the recent accident at the Three Mile Island (TMI) facility. It claims that the accident at TMI was a Class 9 accident and that "[t]he Board, and the NRC, can no longer state that the probability of such an accident occurring is so low or remote as to preclude discussion." It adds: "TMI effectively destroys all of the elaborate probability studies." As a result, SEA seeks to have admitted a contention "which would serve to litigate the effects of a Class 9 Accident, and its effect on the cost benefit analysis of the Plant."

In opposing SEA's petition, the Staff indicates that the TMI accident was indeed a "Class 9" accident. In doing so, it reiterated in this proceeding a similar position which it had taken in another proceeding (Salem Nuclear Generating Station, Unit No. 1, Docket NO. 50-272), and it relied essentially on the brief it filed in that proceeding.³ The Applicants took no position on this question but premised their opposition to SEA's petition on the assumption that the Staff's views were accepted. Both the Applicants and Staff, however, asserted that Class 9 accidents could not be considered in this proceeding because of the proposed Annex and Commission, Appeal Board and judicial decisions applying the policies encompassed by that Annex.

3. The proposed Annex has never been formally adopted by the Commission. But that does not mean that it cannot or should not be applied in

³ The Staff also furnished us with the contrary views of two of its members.

this proceeding. And an examination of adjudicatory and judicial precedents clearly indicates that we should do so.

To begin with, the Annex is entitled to be accorded greater weight than would normally be given to a proposed regulation. *Midland ALAB-123, supra*, 6 AEC at 347. This is because, at the time of the Annex's promulgation, the Commission pointed out that its provisions "will be useful as interim guidance until such time as the Commission takes further action on them." 36 Fed. Reg. at p. 22851 (December 1, 1971). And three years later, when replacing its NEPA-implementing regulations in 10 CFR Part 50, Appendix D, with new regulations in 10 CFR Part 51, the Commission took pains to point out that Part 51 did not affect the proposed Annex to Appendix D and that "[t]he proposed Annex is still under consideration by the Commission." 39 Fed. Reg. 26279 (July 18, 1974).

Furthermore, reliance on the Annex has been sanctioned by a host of adjudicatory decisions and has been upheld by the courts. See, e.g., *Midland ALAB-123, supra*; *Wisconsin Electric Power Company* (Point Beach Nuclear Plant, Unit 2), ALAB-137, 6 AEC 491, 502 (1973); *Shoreham, ALAB-156, supra*; *Commonwealth Edison Company* (Zion Station, Units 1 and 2), ALAB-226, 8 AEC 381, 407-08 (1974); *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 415-16 (1976); *Ecology Action v. AEC*, 492 F.2d 998 (2d Cir. 1974); *Carolina Environmental Study Group v. AEC*, 510 F.2d 796, 798-800 (D.C. Cir. 1975); *Porter County Chapter v. AEC*, 533 F.2d 1011, 1017-18 (7th Cir.), cert. denied, 429 U.S. 945 (1976). A recent manifestation of judicial acceptance of the Commission's reliance on the Annex is the decision of the United States Court of Appeals for the District of Columbia Circuit in *Hodder v. NRC*, Nos. 76-1709 and 78-1149 (December 26, 1978), which held that the Commission did not violate NEPA by failing to examine the environmental effects of Class 9 accidents because of the extreme improbability of their occurrence. See 48 LW 3203 (October 2, 1979). The Supreme Court on October 1, 1979 denied certiorari of that decision (No. 78-1652, 48 LW 3218, October 2, 1979).

In its most recent ruling interpreting the provision of the proposed Annex dealing with Class 9 accidents, the Appeal Board held that the Annex should not be applied to floating nuclear plants because the policy reflected in the Annex was "developed and adopted without any focus on the floating nuclear plant or the discrete problems it presents." *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 219 (1978). But the Appeal Board, after reviewing various "Class 9" precedents, also emphasized that, with regard to land-based plants, the policy of the Annex is to be applied and is consistent with the mandates of NEPA. 8 NRC at 212-13.

The Appeal Board later certified the question of whether Class 9 accidents at floating plants should be considered to the Commission. ALAB-500, 8 NRC 323 (1978). The Commission agreed that they should be. CLI-79-9, 10 NRC 257 (September 14, 1979). In that Memorandum and Order, the

Commission explicitly declined to resolve the generic issue of consideration of Class 9 accidents at land-based reactors; it noted that “[s]uch a generic action is more properly and effectively done through rulemaking proceedings in which all interested persons may participate.” *Id.* at . But it expressed its intent to complete the rulemaking begun by the Annex and to re-examine Commission policy in this area. Further, it directed the Staff to develop recommendations, for Commission consideration, as to further interim guidance pending completion of the rulemaking.

Given this authority, we agree with the Applicants and Staff that general consideration of the consequences of Class 9 accidents at land-based plants such as the Susquehanna units would be inconsistent with Commission policy as expressed in the proposed Annex and in numerous Appeal Board decisions. Moreover, through its *Offshore* ruling, the Commission left in force at least on an interim basis the Appeal Board’s interpretation of the requirements governing the treatment of Class 9 accidents at land-based plants. For these reasons, SEA’s petition, to the extent it seeks a general exploration of the consequences of Class 9 accidents, must be denied.

In taking this action, we wish to note that the occurrence of the TMI accident — assuming, although not deciding, that it falls within the Class 9 category — may well have undermined the probability thesis upon which the Annex premises its treatment of Class 9 accidents. But if that were so, a number of questions would still remain. Would it do so for every Class 9 accident? Or only those Class 9 accidents arising from sequences of events comparable to those occurring at TMI? Or is there some other way of determining which, if any, Class 9 accidents have a probability sufficiently high to warrant their analysis in the Commission’s environmental reviews? In our view, these types of questions can more appropriately be answered through rulemaking than through individual licensing actions. As previously indicated, the Commission in its *Offshore* decision elected to follow this course. We, of course, are bound by that Commission determination. Unless the Commission should modify its outstanding guidance, we are not free to adopt a contrary policy. If the rules should be changed prior to the termination of this proceeding, we of course will be bound by such change. *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 82-83 (1974).

4. Our disposition of SEA’s general contention does not resolve the entire “Class 9” question before us. For while it is clear that the proposed Annex and interpretive decisions preclude our consideration of the consequences of Class 9 accidents generally, they do not necessarily preclude our consideration of every Class 9 accident.

Thus, the proposed Annex indicates that accident assumptions other than those specified in the Annex “may be more suitable for individual cases.” 36 Fed. Reg. at 22852. In *Midland*, ALAB-123, *supra*, the Appeal Board interpreted this permissible flexibility as sanction for “an affirmative

showing” — not there made — that the regulatory judgments used in the calculation of Class 9 accidents are not correct. 6 AECat 348. In *Point Beach*, ALAB-137, *supra*, that Board went on to state that the guidelines of the Annex regarding Class 9 accidents do not “preclude a party from demonstrating that other assumptions[are] more appropriate.” 6 AECat 502. Later, the Appeal Board held that a party which wishes to have the consequences of a particular type of Class 9 accident explored first has the obligation of establishing the likelihood of occurrence of such an accident. *Shoreham*, ALAB-156, *supra*, 6 AEC at 836; *Zion*, ALAB-226, *supra*, 8 AEC at 407-08. Finally, in *Offshore Power Systems*, ALAB-489, *supra*, the Appeal Board observed that “only a showing of special circumstances that *increase the probability* of [a Class 9] event necessitates its consideration.” 8 NRC at 212 (emphasis supplied).

Applying these teachings to the petition before us, it appears that SEA has identified at least one accident that — even assuming it to be a Class 9 accident — may be explored under its proposed Contention 10. That accident is a series of events of the type which actually occurred at TMI.⁴ SEA describes that accident as involving “significant core damage and releases of radioactivity” in the order of 13 million curies of radioactivity. And, most important, SEA stresses that “[t]he accident at TMI happened” and that it can no longer be said “that the probability of such an accident occurring is so low or remote as to preclude discussion.” We agree. The fact that the TMI events occurred constitutes a *prima facie* showing of the probability of occurrence of such an accident, sufficient to form the basis for an acceptable contention.

To be sure, there may be sufficient differences between the boiling water reactors involved in this proceeding and the pressurized water reactor involved in the TMI accident to preclude a similar or comparable accident from occurring at Susquehanna. But that is a matter of factual proof, not of legal prescription. In that connection, we note that the report of the Commission’s “lesson-learned” task force, which studied the TMI accident and made certain short-term recommendations for application to other reactors, included a number of measures applicable solely or in part to boiling water reactors. NUREG-0578, July, 1979.⁵

We accordingly admit the following contention:

19. The ER and FSAR are inadequate in that they do not discuss an accident such as actually occurred at the Three Mile Island Unit 2

⁴ We disagree with the Applicants’ statement that SEA’s petition does not seek to litigate the consequences for Susquehanna of the particular sequence of events which occurred at TMI. SEA’s petition seeks more than that, but it does not disavow interest in examining the TMI sequence of events.

⁵ On August 6, 1979, all parties to this proceeding were served with a copy of this report.

facility, either in terms of the consequences of such an accident, their effect on the cost-benefit balance for the facility, or measures to prevent or mitigate the occurrence or effects of such an accident.

This contention includes both environmental and safety considerations. As in the case of other contentions where this is true, we will hear this contention along with the safety contentions. Discovery on this contention may begin immediately but will be governed by the terms of a discovery and scheduling order which we plan to issue in the near future.

For the reasons stated, SEA's "Petition For Modification of Special Prehearing Conference Order" is *granted* in part and *denied* in part.
IT IS SO ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland,
this 19th day of October, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Marshall E. Miller, Chairman
Sheldon J. Wolfe
Michael L. Glaser

In the Matter of

**HOUSTON LIGHTING AND
POWER COMPANY, et al.**
**(South Texas Project,
Units 1 and 2)**

**Docket Nos. 50-498A
50-499A**

**TEXAS UTILITIES GENERATING
COMPANY**

**Docket Nos. 50-445A
50-446A**

**(Comanche Peak Steam Electric Station,
Units 1 and 2)**

October 23, 1979

In response to applicant's motion for an order to compel the Department of Justice to produce drafts of testimony prepared by one of the Department's expert witnesses, the Licensing Board issues an order directing the Department to produce the draft testimony of its testifying experts.

RULES OF PRACTICE: DISCOVERY (EXPERT OPINIONS)

Various steps in the analyses and thinking processes of expert witnesses in arriving at their conclusions are discoverable as bearing upon the bases for their opinions and their credibility as witnesses. Discoverable matters in this regard include drafts of testimony prepared by an expert witness.

RULES OF PRACTICE: DISCOVERY (EXPERT OPINIONS)

The draft testimony of an expert witness is not immune from discovery because of the role played by counsel in the preparation of such testimony.

**ORDER GRANTING PRODUCTION OF DRAFT
TESTIMONY OF EXPERT WITNESS**

Houston Lighting and Power Company (HL&P) filed a motion on September 10, 1979, for an order to compel the Department of Justice

(Justice) to produce certain drafts of testimony prepared by the latter's expert engineering witness, William E. Scott. The Department opposed this motion in its answer filed September 26, 1979.

At his deposition taken July 17-18, Mr. Scott testified that he has been serving as an expert witness for Justice since January 1979 (Depo. Tr. 178-82). He has prepared and sent to counsel for Justice several drafts of his expected testimony in this proceeding (*Id.* at 18-19). Justice refused, upon request, to produce copies of this draft testimony and the instant motion followed such refusal (*Id.*, 19-32, 173-75, 253-54).

We hold that the draft testimony prepared by the expert witness is producible under Discovery Request No. 2(e) of HL&P's second set of interrogatories, dated February 9, 1979. This subject of discovery concerning expert witnesses and the evolution as well as the bases for their opinion testimony, was discussed fairly extensively by the Board at the June 1, 1979 prehearing conference (Tr. 407-26). We adhere to the views there expressed.

Various steps in the analyses and thinking processes of expert witnesses in arriving at their conclusions are discoverable, as bearing upon the bases for their opinions as well as their credibility as witnesses. The reasons for changes or refinements in expert opinions may be very illuminating to the Board in evaluating opinion evidence, especially where there are conflicts in the opinions of proffered experts. Counsel must remember that experts are almost unique in being permitted to testify as to their opinions, as distinguished from fact testimony. In return, all factors which could condition or affect these opinions are properly the subject of cross-examination, and hence discovery in advance of trial.

Testifying expert witnesses are not immunized from discovery by the form of their studies or proposed testimony. Neither are the witnesses immunized from discovery because of the role played by counsel in such analyses. If an expert is going to testify, all factors which could reasonably bias as well as competence are discoverable. The causes of potential bias of a witness are not sanitized because they emanate from or involve counsel; in fact, the converse may be true. The objectivity of expert opinions might be subject to question if witnesses are indeed expected by counsel to be "attempting to reconcile [new] information with his earlier conclusions,"¹ or to "defend and explain conclusions which even when recorded he may not have endorsed."² A witness is not expected to be so supple concerning prospective testimony under oath, whether written or oral. If our ruling does indeed have a "chilling effect" upon possible complaisant witnesses, that is all to the good. For the

¹ Answer of the Department of Justice In Opposition to the Motion of HL&P to Compel Production by the Department of Justice of Certain Drafts of Testimony Prepared by William E. Scott, p. 12.

² *Id.*, at 13.

information of all counsel, this rule will apply to oral consultations with counsel by testifying witnesses, as well as written communications.³

Justice is directed to produce the draft testimony of its testifying experts, including its expert engineering witness, William E. Scott.

It is so ordered.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Marshall E. Miller, Chairman

**Dated at Bethesda, Maryland
this 23rd day of October, 1979.**

³ *Id.*, at 15. In Alabama Power Company (Joseph M. Farley Plant, Units 1 and 2), Docket Nos. 50-348A, 50-364A, a transcript of a tape recording of strategy conferences involving, in part, a testifying expert witness and counsel for Justice was admitted into evidence, over a similar objection by Justice.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Oscar H. Paris
Glenn O. Bright

In the Matter of

PENNSYLVANIA POWER AND
LIGHT COMPANY

Docket Nos. 50-387
50-388

and
ALLEGHENY ELECTRIC
COOPERATIVE, INC.

(Susquehanna Steam Electric
Station, Units 1 and 2)

October 30, 1979

Upon consideration of additional filings received subsequent to its scheduling and discovery order of August 24, 1979, the Licensing Board issues a second memorandum and order modifying the earlier scheduling and discovery order.

RULES OF PRACTICE: DISCOVERY

The purpose of discovery is to enable each party *prior to hearing* to become aware of the positions of each adversary party on the various issues in controversy, and the information available to adversary parties to support those positions.

RULES OF PRACTICE: PROTECTIVE ORDERS *

Discovery always entails some burden or expense. Only undue burden or expense—beyond that normally necessary to identify the details of a party's case and the sources of information upon which it intends to rely—would normally justify issuance of a protective order.

RULES OF PRACTICE: PROTECTIVE ORDERS

General "evasive" objections to discovery are not acceptable. See 10 CFR 2.740(f)(1). To form the basis for a protective order, specific objections to particular inquiries must be advanced.

MEMORANDUM AND ORDER ON DISCOVERY MOTIONS (II)
(October 30, 1979)

A. On August 24, 1979, we issued a Memorandum and Order on Scheduling and Discovery Motions (hereinafter Discovery Memo I) in which we ruled on a host of such motions which had been filed with us by various parties to this proceeding. In general, we explained the philosophy of scheduling which we had in mind for this proceeding, the importance of discovery in preparing this case for hearing, and the types of objections which could be entertained should a party believe that discovery directed against it was burdensome, oppressive, or otherwise objectionable. We also extended a number of then-outstanding deadlines for initiating discovery, responding or objecting to discovery requests, or answering requests for protective orders.

During the course of Discovery Memo I (p. 16), we further expressed our regret at the "proliferation of motions . . . [which] has undoubtedly taken time away from the parties' development of their substantive cases." We had hoped that the parties would tone down their procedural skirmishing and begin to prepare their cases for hearing.

This apparently has not happened. For, since the issuance of Discovery Memo I, we have received the following additional filings concerning or arising out of discovery:

1. In filings dated August 30, September 1, and September 10, 1979, Citizens Against Nuclear Dangers (CAND) attempted to appeal Discovery Memo I. The Appeal Board summarily dismissed the appeal on the ground that it was an interlocutory appeal precluded by the Commission's rules. ALAB-563, 10 NRC 449 (September 19, 1979). The appeal papers included several complaints relating to discovery rulings which we had issued. In opposing CAND's appeal, the Applicants took the position that such matters were more properly before this Board (see their appellate brief dated September 14, 1979) and, on September 17, they filed with us a response to those matters. (The Staff's brief on appeal confined itself to the jurisdictional aspects of the appeal.)
2. On September 12, 1979, Susquehanna Environmental Advocates (SEA) filed a motion for an extension of time within which to respond to the Applicants' and Staff's discovery requests. SEA seeks an additional 180 days. On September 20 and October 1, 1979, the Applicants and Staff, respectively, responded. The Applicants would have granted SEA 20 days from September 12 to respond; the Staff offered an additional 14 days.
3. On September 13, 1979, the Staff wrote a letter to ECNP which explained why it was not required to, and hence would not, comply with certain discovery requests which ECNP had served upon it.
4. On September 17, 1979, ECNP filed a response to Discovery Memo I which, in effect, either took objection to or (to a much lesser extent) provided answers to the Staff's interrogatories; in that response, ECNP also generally objected to all the Applicants' interrogatories but did not

provide specific objections to any of them. On October 9, 1979, the Staff responded to the ECNP filing and, in doing so, submitted a cross-motion to dismiss ECNP (and the contentions it raised) from the proceeding. On October 13, 1979, ECNP responded to this cross-motion. On October 12, the Applicants filed their own motion to dismiss ECNP and its contentions from the proceeding. ECNP on October 22 opposed the Applicants' motion; the Staff on October 23 indicated it would not file a further response to it.¹

5. On September 24, 1979, ECNP moved to compel discovery of the NRC Staff. The Staff responded on October 15, 1979.

6. On September 25, the NRC Staff moved to dismiss CAND, and the contentions it raised, from the proceeding. On October 10, 1979, the Applicants supported this motion. ECNP on October 13 filed a response opposing the motion. For its part, CAND on October 9 moved for a protective order against the Staff. (The Staff on October 16 stated that it would not further respond to the CAND motion.) Further, on October 24, CAND filed an additional response to the Applicants' and Staff's motions and sought additional relief, including the convening of a prehearing conference.

7. On October 23, 1979, the Applicants moved to dismiss SEA and its contentions from the proceeding.

What we are confronted with, in sum, are strong objections by CAND, ECNP, and SEA to discovery sought by the Applicants and Staff and, for the most part, a concomitant failure to respond substantively to such discovery; and, on the other hand, attempts by the Applicants and Staff to dismiss peremptorily from this proceeding CAND, ECNP, and SEA, as well as their contentions. These filings appear to us to reflect that the discovery process is not working in this proceeding. Instead of dealing with the motions separately, we have attempted to take an overview of the situation in order to put this proceeding "back on track." We turn now to that overview.

B. In Discovery Memo I, we attempted to outline both the NRC rules governing discovery and the underlying purpose which discovery is intended to serve in an NRC licensing proceeding. We stated, *inter alia* (at pp. 5-6) that

the purpose of discovery is to enable each party *prior to hearing* to become aware of the positions of each adversary party on the various issues in controversy, and the information available to adversary parties to support those positions [emphasis supplied].

We went on to observe that Commission licensing proceedings "are not to become the setting for 'trial by surprise,' and the discovery mechanism is the major means used to avoid that situation." *Id.* at 6. Finally, we noted that

¹ After this Order had been prepared, we received an October 25, 1979 letter from the Applicants commenting on ECNP's response. Nothing therein changes any of the conclusions which we are here reaching.

answers to discovery inquiries are important in terms of a party's ability to prepare its case for trial — and particularly so for an applicant which has the burden of proof in a proceeding of this type. *Ibid.* But we also pointed out that discovery always entails some burden or expense, and that only “‘undue’ burden or expense — beyond that normally necessary to identify the details of a party's case and the sources of information upon which it intends to rely — would normally justify” issuance of a protective order. *Id.* at 7.

Finally, we outlined the type of responses which would be considered as satisfactory. And we alluded to the potential consequences to a party for failing to answer discovery requests adequately — *i.e.*, “steps as drastic as dismissal of a contention or of a party from the proceeding.” *Ibid.*

Each of the intervenors involved in the motions which we are considering (CAND, ECNP, and SEA) has filed some sort of response to the discovery requests of the Applicants and Staff. But few, if any, of the intervenors' responses include substantive answers to the questions asked. Viewed on their merits, most of the responses appear to be little more than the same type of generalized objections which, in Discovery Memo I, we indicated were inadequate. For that reason, we might perhaps have technical ground to dismiss CAND, ECNP, and/or SEA, including their contentions, from this proceeding. But when those intervenors' responses are viewed collectively, they convey a different message — a message that perhaps the strict construction of the discovery rules in at least this particular proceeding is inappropriate.

For example, in its unsuccessful appeal, CAND claimed it has been denied government records and relevant documents in the Applicants' possession. It also asserted that:

to attempt compliance with the outlandish discovery requests of the Applicant and the NRC would have been a financial burden beyond the means of the Citizens. Also, because the Citizens would need an extraordinary amount of time to obtain most of the technical data requested, there was no reasonable possibility of responding other than objecting to the interrogatories.

CAND Response, dated September 10, 1979, at p. 3. CAND also explicitly objected to questions propounded by the Applicants bearing upon contentions (or portions of contentions) sponsored by other parties.

Generally the same themes pervade ECNP's responses or objections to the Applicants' and Staff's discovery requests. It complains particularly of the Staff's failure to provide it free copies of numerous documents it requested. In its September 10 discovery request, it states that “ECNP does not have the funds to purchase these documents that we have identified as important to the development of our case.” As for access to documents in either the NRC Public Document Room in Washington, D.C., or the local public document room in Wilkes Barre, PA, ECNP states that its authorized representatives live more than 125 miles from either source, and that “lack of access to the record constitutes a denial of due process and prohibits a full and fair

proceeding.” Further, ECNP complains of “detailed and repetitive responses to unreasonable, burdensome, and unduly oppressive numbers of Interrogatories”; it claims that it must answer 2628 interrogatories from the Applicants alone and seeks an order “protecting all of these inexperienced, unfinanced, and uncounseled citizen intervenors in this case from the unjust work loads, inappropriately short deadlines, unnecessary paperwork, and injustice.” ECNP Responses, dated September 17, 1979. Moreover, ECNP asserts that, just as answering 2628 interrogatories is oppressive, so too specifying why each of these interrogatories is burdensome is also oppressive. *Ibid.* (The Applicants claim that ECNP has overstated the number of responses requested of it.)

Finally, ECNP calls our attention to the involvement of its members and representatives in matters arising out of the March 28, 1979 accident at the Three Mile Island (TMI) facility. ECNP claims its members and representatives “directly experienced, and suffer from, the severe trauma” associated with that accident. It claims:

The priority of responding to the calls for information, assistance, and reassurance from the victims of the TMI-2 accident must be understood by this Board as a moral imperative that has absorbed a substantial portion of these Intervenor’s time and energies in the ensuing months.

Responses of ECNP Intervenor, dated September 17, 1979, at p. 5. ECNP also advises that it has been, and is, involved in the licensing proceedings for TMI-2.

For its part, SEA, in requesting a six-month extension of time within which to respond to discovery requests, characterizes the Applicants’ and Staff’s interrogatories as “lengthy, burdensome, [and] oppressive.” It asserts that “it would take a *full-time* staff, including an attorney, radiation physicist and engineer, at least six (6) months to adequately answer or object to these duasonian [sic] interrogatories.” And it calls attention to the fact that “SEA is a volunteer citizens organization without the necessary full time staff and resources.” Finally, it states that SEA has not had access to the prehearing conference transcript outside the local public document room (a complaint which ECNP had also made).

In short, each of the intervenors claims that, in light of the meagre financial resources available to it, and as a result of the failure of the Applicants or NRC Staff to respond satisfactorily to many of the intervenors’ discovery requests, it cannot meet the demands imposed upon it by the Applicants’ and NRC Staff’s discovery requests and by this Board through its rulings in Discovery Memo I.

C. As we suggested both earlier in this opinion and in Discovery Memo I, the type of general objection being advanced to some degree by the various intervenors would normally not be sufficient to warrant our granting relief from the discovery requests in question. We repeat our admonition in Discovery Memo I (at p. 9) that

general “evasive” objections to discovery are not acceptable. See 10 CFR

2.740(f)(1). To form the basis for a protective order, specific objections to particular inquiries must be advanced. *Boston Edison Company* (Pilgrim Nuclear Generating Station, Unit 2), LBP-75-30, 1 NRC 579, 583 (1975).

Furthermore, we reiterate that the relief now being sought by the Applicants and Staff — dismissal of CAND, ECNP, and SEA (and all their contentions) from this proceeding — could potentially be granted in the face of the deficiencies in responses which have characterized these intervenors to date. Indeed, it may well be that some of the generalized and deficient objections being advanced by the intervenors are in fact motivated not by any burden or hardship which responding to discovery would entail but rather by a desire to delay the progress of the proceeding and, through that device, the possible operation of the facility. In that connection, we note that a number of CAND's statements, in particular, go out of their way to criticize categorically and without apparent rationality various requirements of the Commission's rules and actions of the Applicants, the Staff, and this Board taken in conformance therewith. For example, CAND states that it will

submit concise direct testimony on [its] contentions at the public hearings — extemporaneously. This will not be impromptu speech. Rather, the Citizens are knowledgeable on certain topics, enough to make factual statements under oath, that can be defended under cross-examination.

CAND Response, dated September 10, 1979, at p. 2. This approach is not only inconsistent with the general thrust of NRC rules (10 CFR Section 2.743(b)) but with our previously expressed goal of avoiding "trial by surprise." It would make it most difficult for the Board to formulate informed questions for the witnesses and hence to be adequately prepared for hearing. Clearly it raises a question whether that Intervenor, at least, looks upon a licensing proceeding as a forum for resolving technical questions in the fairest and most comprehensive manner, or alternatively, whether it views this proceeding merely in terms of a podium for soapbox oratory. We need scarcely add that this latter approach is intolerable and will not be countenanced by this Board.

Notwithstanding the foregoing considerations, it is apparent to us that, because of the particular facts surrounding this proceeding, dismissal of any of the intervenors or their contentions at this time would not be warranted. Further, relief from some of the obligations imposed by our March 6, 1979 Special Prehearing Conference Order as modified by Discovery Memo I, is called for. But finally, *it is absolutely necessary* that the intervenors respond in a timely fashion to the discovery obligations which still remain. The particular circumstances which cause us to take this action are the following:

First, a development which occurred subsequent to our issuance of Discovery Memo I alleviates the need for the fairly expeditious discovery schedule which we previously imposed. On September 18, 1979, the Staff advised us and the parties of a delay in its issuance of the Final Environmental Statement (FES), the Safety Evaluation Report (SER) and the SER Supplement. The FES is to be delayed from late October, 1979 until late January, 1980; the SER from late March, 1980 until late August, 1980; and the

SER Supplement from late July, 1980 until early January, 1981. The Staff now estimates that the earliest date for the start of the environmental hearing would be March or April, 1980, and the earliest date for the start of the health and safety hearing would be February or March, 1981. These delays suggest that a grant of further time to respond to discovery would have little or no adverse effect on the ability of any party to prepare for hearing, or for the hearing to be commenced on a timely basis.

Second, the projected delay of the SER and SER Supplement for an even greater period than the delay of the FES suggests that the scope of discovery called for in the near future might be drastically reduced. Our Special Prehearing Conference Order and Discovery Memo I imposed identical first round discovery schedules for both environmental and health and safety issues, but it now appears that the earliest date for the hearing on safety issues is more than a year in the future. Indeed, it is entirely possible that the February or March, 1981 hearing date currently projected by the Staff will not be met. That being so, there appears to us to be no good reason for insisting on the completion of discovery on health and safety issues in the near future. To do so only exacerbates the already heavy burden which responding to discovery does indeed impose upon an intervenor.

Third, the TMI accident presents particular challenges which must be faced in this proceeding. The Susquehanna facility is about 65 air miles from TMI, and this facility's effluents, like those of TMI, are to be discharged into the Susquehanna River. Regulatory developments arising out of the TMI-2 accident will be factored into this licensing proceeding as into others; the proximity of this facility to TMI, however, makes it important that this end be achieved publicly, on the record. Our recent action admitting the SEA contention concerning the TMI accident and its consequences (Contention 19) was in part motivated by these considerations. See LBP-79-29, 10 NRC 586 (October 19, 1979). Furthermore, dismissal of any contention on technical grounds (which would likely result from our granting the Applicants' and Staff's motions to dismiss CAND, ECNP and SEA and their contentions) would be counterproductive in this regard. For these reasons, we hereby put all parties on notice that we will not dismiss any contentions from this proceeding without at least the showing (through affidavits) required by 10 CFR Section 2.749; further, in that circumstance we will have to be satisfied that the issue in question has been properly resolved. See *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 752-54 (1977). (As described later, however, we shall take steps against parties which fail to respond to the discovery requirements which we are here imposing.)

Fourth, we have clearly been apprised of the tremendous burden, both financial and in terms of time, which participation in a proceeding like this entails. Despite the neutrality of the Commission's discovery rules in their application to various parties, the effect of these rules is to impose vastly varying burdens on volunteer participants, on the one hand, and Applicants or governmental participants, on the other, whose efforts are funded by ratepayers or through taxes. However, as we recognized in our Special

Prehearing Conference Order, the Commission has a clear policy against providing financial assistance to intervenors in proceedings of this type. LBP-79-6, 9 NRC 291, 326 (1979). The existence of such a policy, however, does not deprive us of the authority to take steps to alleviate the financial burden of participation, to the extent consistent with our carrying out our responsibility to conduct a full and thorough inquiry into the issues raised.² We believe that, consistent with these goals, modification of both the scope and timing of discovery is in order.

Fifth, we are aware that at least one of the intervenors here — ECNP — is actively participating in other on-going licensing proceedings, including that involving TMI-2. It appears that imposition of extensive discovery obligations in the near future on ECNP, at least, would seriously compromise that party's ability to contribute to the resolution of issues not only in this proceeding but in several others. We are aware, of course, of the Appeal Board's recent declaration — made with respect to at least one of the very same persons who is representing ECNP in this proceeding — that "any individual undertaking to play an active role in several proceedings which are moving forward simultaneously is apt to find it necessary from time to time to expend extra effort to meet the prescribed schedules in each case." *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), *et al.*, ALAB-566, 10 NRC 527, 530 (October 11, 1979). But that does not mean that a Board cannot, or should not, take into account obligations imposed by other proceedings in establishing its own schedules. We are doing so here to the extent we believe that modification of our previously established schedules will have no effect on our ability to bring this proceeding to a timely conclusion.

Finally, several interpretations of the discovery rules advanced by the Applicants and Staff have had the effect of enormously compounding the discovery burden imposed on the intervenors. For example, the Applicants have made discovery requests of each party requiring responses with respect to contentions, or parts of contentions, advanced by other parties. In other words, ECNP has been asked questions and has been requested to produce documents relating not only to its own contentions but also those of CAND, SEA, and Ms. Marsh, and other intervenors have been treated similarly. The justification advanced by the Applicants is that "[s]ince all Intervenor are entitled to cross-examination on all contentions at the hearing . . . , answers to the Interrogatories by all Intervenor are needed for Applicant to prepare to respond to such cross-examination." Applicants' First Set of Interrogatories to Intervenor Susquehanna Environmental Advocates, dated May 25, 1979, p. 1 (similar interrogatories served on other intervenors). On the other hand, the Applicants moved for protective orders against discovery requests filed by

² When the Commission announced its policy of not providing financial assistance to participants in licensing proceedings, it also indicated that it would study means for reducing the procedural cost burdens of participation. *Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, 4 NRC 494, 514-16 (1976). The steps we are invoking are consistent with this purpose.

CAND and ECNP to the extent the requests related to contentions sponsored by other parties, on the basis that our Special Prehearing Conference Order limited the participation of intervenors on contentions they did not sponsor to cross-examination and the submission of proposed findings and conclusions. See, e.g., Applicants' Objections to Certain Discovery Requests of CAND, dated June 29, 1979, at pp. 5-8 (Interrogatory/Requests 15, 17, 18); Applicants' Objections to Certain Discovery Requests of ECNP, dated June 29, 1979, at pp. 2-3 (Discovery Request 1). In Discovery Memo I, we granted the protective orders requested by the Applicants, but not on their merits. We did so because of the failure of CAND and ECNP to respond to the Applicants' objections.

Although the dichotomy which we have just portrayed may be consistent with the Rules of Practice, the result it reaches is patently unfair to the intervenors. Pursuant to our authority to issue "any order which justice requires" to protect a party from "undue burden" (10 CFR 2.740(c)), we are correcting this unfairness.

As for the Staff, the position it has taken requiring the various intervenors to go to the Washington Public Document Room, or the local Public Document Room, to view certain documents, or alternatively to purchase them, is also in accord with NRC rules. 10 CFR 2.740(f)(3); 2.744; 2.790. But following the strict letter of those rules appears to impose unnecessary burdens on the intervenors. In our Special Prehearing Conference Order, we urged the Staff to arrange for the intervenors to be able to utilize the transcripts of this proceeding normally placed in the local Public Document Room for temporary periods away from that location. LBP-79-6, 9 NRC at 328. Apparently that result has not been achieved. The Staff has, however, arranged for an additional copy of the transcripts to be placed in the Pennsylvania State University Library. It also temporarily loaned one of its own copies to ECNP. Although we commend the Staff for these latest actions, we would urge it to continue to attempt to arrange for temporary, short-term intervenor use outside the document room of documents in the local Public Document Room. We also are urging the Staff to take certain other actions, as hereinafter described. We would hope that, consistent with NRC rules, as much effort as possible could be made to assist the intervenors in obtaining the relevant information they seek to develop their positions to the fullest possible extent.

D. In view of the foregoing, the schedule for this proceeding is hereby modified in the following respects:³

1. All discovery obligations with respect to contentions to be heard at the health-and-safety hearings (Contentions 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, and 19) are hereby suspended. We will issue an order following the environmental hearings to establish a new discovery schedule for the health-and-safety issues. All parties are urged to respond to outstanding discovery requests on these

³ These modifications should obviate any present need for a prehearing conference, as recently requested by CAND.

health-and-safety contentions as soon as possible, but the obligation to do so is stayed. The parties are put on notice, however, that when the obligation is later reimposed, an extended time frame for responses may not be provided.

2. All parties are granted an extension of time until Friday, December 14, 1979, within which to respond to outstanding discovery requests on environmental contentions. Those contentions are as follows:

- 1 (health effects of the uranium fuel cycle)
- 2 (health effects of low-level radiation and other discharges from the facility)
- 3 (uranium supply)
- 4 (need for power)
- 14 (capacity factors)
- 16 (cooling tower discharge)
- 17 (transmission lines)
- 18 (herbicides)

3. All parties are directed, to the extent they have not already done so, to respond by December 14, 1979, to the discovery requests on the environmental contentions, except that no party need answer questions with respect to contentions, or portions of contentions, which it is not sponsoring. We recognize that the Applicants and Staff may possibly be surprised by the cross-examination of intervenors on other than their own contentions; but we are persuaded by the circumstance that this cross-examination is mainly for our benefit, rather than that of the questioning party, and we are disinclined to impose on intervenors a heavy discovery burden to serve that purpose. Moreover, as a general principle, it is unfair to require intervenors to respond to discovery of a type which the Applicants themselves have deemed to be improper. To the extent warranted, we will grant the Applicants and Staff sufficient time at the hearing to counter claims that might be raised by the intervenors through the medium of cross-examination of witnesses appearing with respect to other parties' contentions.

4. *If any intervenor fails properly to respond in a timely fashion to the discovery as outlined in paragraphs 2 and 3, it will not be permitted to present any direct testimony on that contention.* (No further order of this Board to this effect will be required.) Although we may grant extensions of time for good cause shown (10 CFR 2.711), we are disinclined to grant any lengthy extensions or any extensions without a strong showing of good cause. We call attention again to the points we made in Discovery Memo I concerning proper responses: namely, that an intervenor is not required to engage in extended research to answer questions and may, if it is true, state that it has no knowledge of a given subject or that it is in the process of developing such knowledge.

5. Responses to discovery requests shall be updated as required by Commission rules (10 CFR 2.740(e)). Each party shall identify the identities, addresses, and professional qualifications, and the subject matter and the substance of the testimony of, expert witnesses expected to be called

for its direct environmental case at least 60 days in advance of the commencement of the environmental hearings. Each party shall also identify the documents it intends to employ in its direct case at that same time. Additionally, each party shall identify documents upon which it intends to rely in cross-examination of any witness on environmental issues (to the extent it is aware of such documents) at least 7 days prior to the commencement of the environmental hearing.

6. Failure of an intervenor to respond as specified above *will not be grounds for striking its contentions* but such failure may be taken into account by us in considering motions for summary disposition of a contention. Failure to respond properly, in addition to precluding an intervenor from presenting direct testimony, *may be grounds for dismissing that intervenor* (as distinguished from its contentions) *from the proceeding*.

7. The provisions of the Special Prehearing Conference Order, as modified by Discovery Memo I, concerning supplemental discovery requests on environmental issues remain in effect.

8. Direct testimony in writing on the environmental issues is required to be filed 21 days prior to the commencement of the environmental hearings.

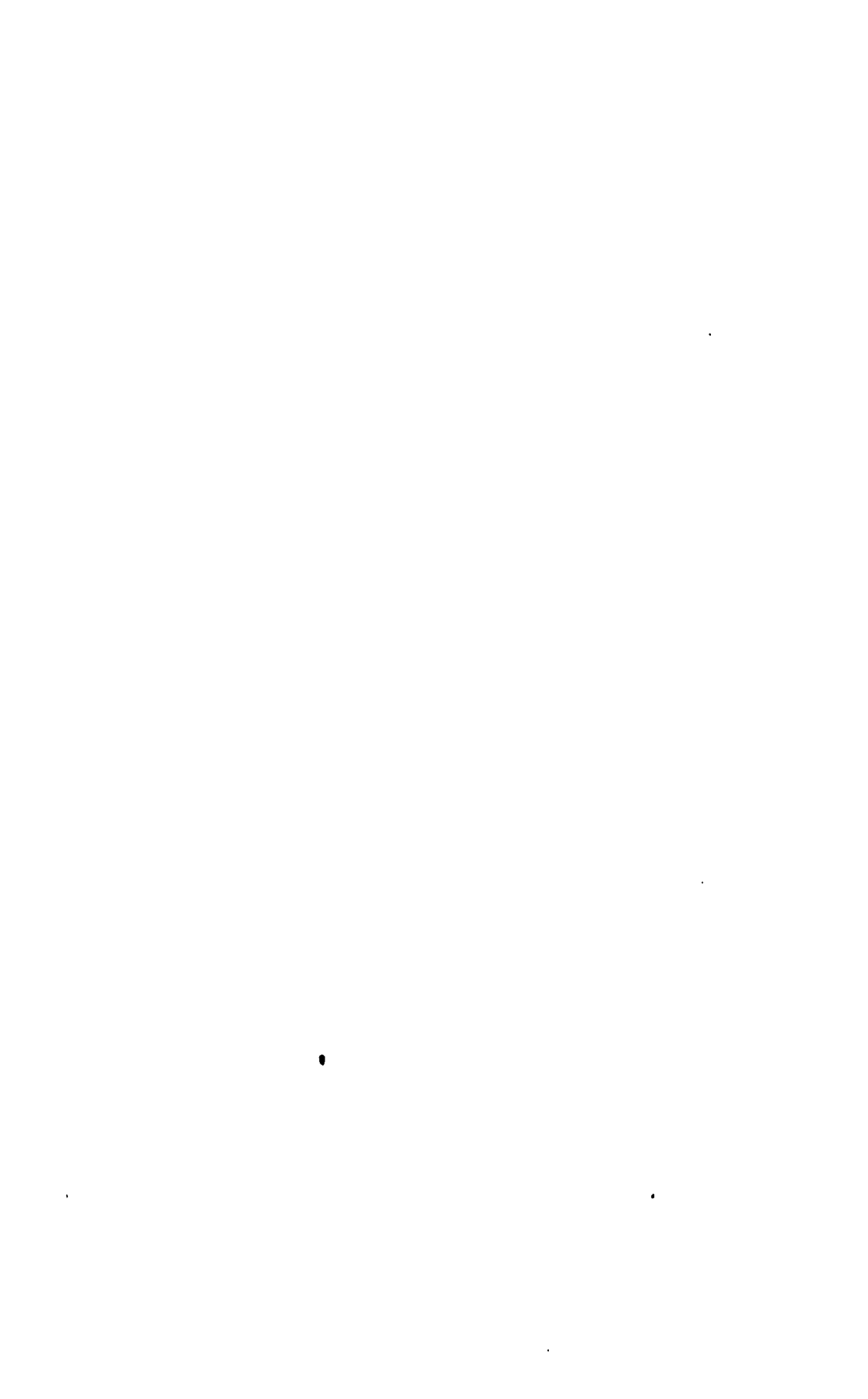
9. The Staff is urged to arrange for transcripts and other documents at the local Public Document Room to be taken out of that room by intervenors, on a short-term temporary basis. In addition, ECNP has brought our attention to the fact that, in the TMI-2 proceeding, the Staff has supplied it with copies of numerous documents, and we are aware that this practice is being followed by the Staff in other cases. It appears to us that it would be equitable for the Staff to do so here. To the extent that the Staff might regard the forwarding of documents to intervenors as financial assistance, we consider it to be *de minimis*. In any event, where the Staff declines to produce relevant documents on the basis of their availability at a public document room, the Staff should assure that the documents are present in the local Public Document Room and not only at the Washington location. Further, where the Staff declines to produce documents in whole or in part on the ground of their local availability, the Staff is directed to assure that the documents are indeed available locally (*i.e.*, in the Wilkes-Barre area). (With respect to ECNP discovery requests, it will be sufficient to show that particular documents are in fact available at the Pennsylvania State University library.)

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland,
this 30th day of October, 1979.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

PHILADELPHIA ELECTRIC
COMPANYDocket Nos. 50-352
and 50-353(Limerick Nuclear Generating
Station, Units 1 and 2)

October 9, 1979

The Director of Nuclear Reactor Regulation grants in part a petition under 10 CFR 2.206 requesting investigation of effects of blasting on the Limerick site, but the Director denies remainder of the petition requesting further investigation of alleged construction deficiencies at the site.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letter dated April 12, 1979, Frank Romano of Ambler, Pennsylvania, requested that the Commission investigate whether blasting at a quarry near the site of the Philadelphia Electric Company's (PECO) Limerick Generating Station has a deleterious effect on the site. Mr. Romano's letter has been treated as a request under 10 CFR 2.206 of the Commission's regulations. Notice of receipt of Mr. Romano's April 12th letter was published in the *Federal Register* 44 Fed. Reg. 33987 (June 13, 1979). In letters dated May 14 and June 12, 1979, Mr. Romano also raised concerns related to (1) concrete void/honeycomb in a structure at the Limerick facility, (2) the computer analysis used in the seismic design of safety-related piping, (3) the discovery of insufficient gaps between seismic Category I structures, and (4) a request for information from the NRC sent to PECO on April 14, 1978, regarding the design of safety-related components in the containment building. Mr. Romano requested that repair of concrete void/honeycomb be included in his request for an investigation of blasting near the Limerick site.

While the subject of the blasting was covered during the preparation of the Safety Evaluation Report on the preliminary design, it is not clear that two particular issues were adequately treated. One issue is whether the design ground motion adopted for the Limerick plant is adequate to envelop the spectra motion that includes the effect of blasting. The second issue is the potential for displacement along the faults under the facility due to the

blasting. Before the Staff can affirm its previous conclusion that the nearby blasting would not have a detrimental effect on the facility, the Staff must investigate these matters.¹

Thus, I have determined that an investigation should be conducted of the effects of blasting at the quarry near the site of the Limerick facility. A geotechnical engineer was sent to the site area in May 1979 and discussed this concern with personnel from NRC's Office of Inspection and Enforcement. In addition the NRC staff has enlisted the assistance of technical experts from the U.S. Geological Survey.

The U.S. Geological Survey has been requested to evaluate the two specific items described above: (1) whether the present seismic design bases (ground motions) are adequate to account for the effects of the nearby blasting and (2) the likelihood that the nearby blasting will reactivate old faults at the site. The NRC staff requested that the U.S. Geological Survey complete its evaluation by December 31, 1979. However, completion by this date is dependent on the availability of U.S. Geological Survey reviewers and possible need for acquisition of required data from the applicant.

The other concerns expressed in Mr. Romano's April 12, 1979 letter relating to site geology, fracture zones and the adequacy of the foundations have been addressed in the Safety Evaluation Report issued in November 1971 and in the staff's evaluation of faulting in the excavation issued January 23, 1975. In these previous reviews of faulting at the Limerick site the staff concluded that (1) the faults were not capable faults and (2) the methods used to repair the fracture zones were acceptable. At this time I find no reason to alter these conclusions. In any event, review of the Limerick Final Safety Analysis Report will again consider these issues as part of our consideration of PECO's application for operating licenses.

I have determined that a further investigation of concrete void/honeycomb at the Limerick facility is not warranted at this time. Certain concrete void/honeycomb were discovered in the Unit No. 1 containment building while the structure was being built in 1976. These defects in the concrete were located in seven areas around the personnel air lock penetration and the control rod drive mechanism penetrations. The voids were caused in part by the congestion of reinforcing steel around these penetrations which made it difficult to place the concrete. The locations of the defects are listed in Enclosure 1 (IE Inspection Report No. 50-352/77-01). In repairing the containment wall, the defective concrete was removed; the steel reinforcing and sound concrete were left in the area.

The overriding criteria for repairing the concrete are proper placement and strength. Grout, a mixture of sand, water and cement, was the material chosen for the repairs. By design the grout did not contain coarse aggregates (stones) that are normally a part of concrete. The use of coarse aggregates in

¹ In this respect the Staff disagrees with the applicant's position in this matter. In a letter of August 22, 1979, from its counsel, Troy B. Conner, Jr., the licensee stated that the record concerning the issuance of the construction permits indicated that the potential effects of blasting had been fully explored.

concrete reduces the amount of cement required; this makes concrete a more economical building material when used in large quantities. However, the omission of the coarse aggregates enhances the grout's ability to penetrate the crevices in the surfaces to which the grout is applied. Also, the omission of the coarse aggregates does not lead to a material that has a lower compressive strength than that of the concrete used for the containment walls. To verify that the grout achieved the required compressive strength, test samples were made at the time of grout placement. The samples were allowed to cure and were subsequently tested by PECO. The compressive strength of the samples was equal to or greater than that required.

The NRC's Office of Inspection and Enforcement investigated the matter of the concrete void/honeycomb at the Limerick plant. Inspection personnel followed the matter from the discovery of the voids/honeycomb to the repair of the containment walls. The inspection efforts on this matter are documented in Inspection Reports 50-352/76-08, 50-352/76-09, 50-352/77-01 and 50-352/77-15, copies of which are enclosed as Enclosure 1. In summary, the Office of Inspection and Enforcement concluded that PECO's resolution of the problem was acceptable; therefore, I find that further investigation at this time is not warranted. Of course, should new information become available concerning additional honeycombing in concrete at the Limerick facility, the Commission will not hesitate to investigate such problems or take appropriate action to assure that such deficiencies, if any, are corrected.

Although specific action was not requested with respect to the other concerns raised by Mr. Romano in his letters, the remainder of this decision addresses those concerns. Each of these items involves matters subject to either ongoing or future review by the NRC. The item regarding computer analysis and the seismic design of piping systems is the subject of IE Bulletin 79-14 (Enclosure 2). This bulletin requested that PECO, among other licensees, take certain actions and report the results to NRC within 120 days of the bulletin. PECO's response was submitted on August 1, 1979. In addition to PECO's response to the bulletin, we will review the seismic design of safety-related piping systems during our review of the Final Safety Analysis (FSAR) for the Limerick plant. We expect the FSAR to be submitted by PECO during the spring of 1980, and our review of that document will probably start shortly thereafter.

The NRC requested information on April 14, 1978, related to dynamic loads on the containment that were not explicitly considered with the seismic loads at the preliminary design stage. This request for additional information was sent out to all plants under construction that utilize the Mark II pressure suppression containment. The request is a part of our reassessment of the Mark II containment design which began in 1975. In 1975, new pool dynamic loads on the containment were discovered by General Electric (the originator of the Mark II containment). Our reassessment also covers the operation of safety/relief valves. Experience at several operating reactors with pressure suppression containment had shown that damage to wetwall interval structures occurred during steam blowdown through the safety/relief valves.

This blowdown produces a dynamic load on components in or attached to the suppression pool. In the FSAR for the Limerick plant, PECO must show that the Limerick design can withstand the effects of combinations of seismic loads and each of the dynamic loads.

Mr. Romano's final concern dealt with the separation gaps between structures at the Limerick plant. In the Preliminary Safety Analysis Report (PSAR), PECO committed to make the separation gaps between seismic Category I structures twice the distance determined by seismic analysis of the structures. However, during construction PECO found that some of the separation gaps did not meet this commitment; PECO reported this matter to the NRC in compliance with 10 CFR 50.55(e). During PECO's study of this matter, a reanalysis of the seismic design was performed. As described in PECO's final report dated June 13, 1978, (Enclosure 3) this reanalysis included "realistic consideration of temperature and pressure transients; structural material and soil properties; soil-structure interaction; and structural and soil damping." Based on the reanalysis, PECO found that some of the gaps which would be unacceptable under the original analysis were acceptable; the balance of the insufficient gaps were increased to meet the PSAR commitment. Mr. Romano's May 14th letter suggested that the reanalysis to justify the as-built gaps resulted in an unacceptable removal of conservatism. This is not necessarily the case. When an applicant uses realistic or "as built" parameters, conservative analysis techniques, and factors of safety applied to the results of the analysis, an acceptable result can be obtained. Again, our review of the FSAR for the Limerick plant must conclude that the design of the plant is acceptable before the plant can go into operation.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and the Local Public Document Room for the Limerick Nuclear Generating Station at the Pottstown Public Library, 500 High Street, Pottstown, Pennsylvania 19464. A copy of this decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c) this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes review of this decision within that time.

FOR THE NUCLEAR REGULATORY COMMISSION,

**E. G. Case, Deputy Director
Office of Nuclear Reactor Regulation**

**Dated at Bethesda, Maryland
this 9th day of October 1979**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**PUBLIC SERVICE COMPANY
OF INDIANA, INC.**

**Docket Nos. STN 50-546
50-547**

**WABASH VALLEY POWER
ASSOCIATION, INC.**

(10 CFR 2.206)

**(Marble Hill Nuclear Generating
Station, Units 1 and 2)**

October 11, 1979

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations which requested suspension or revocation of the Marble Hill Construction Permits and reopening of the safety hearings.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

A petitioner under 10 CFR 2.206 must specify the facts that constitute the basis for taking the proposed action.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

A petitioner under 10 CFR 2.206 must specify the facts that constitute the basis for taking the proposed action.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

The facts alleged in a petition under 10 CFR 2.206 must specify a nexus between those facts and the issues which the petitioner believes provide a basis for instituting a proceeding concerning a particular facility.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

A mere allegation that the petitioner or the public is newly interested in matters concerning a particular facility is, without more, generally an insufficient basis under 10 CFR 2.206 for instituting a proceeding.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated August 30, 1979, Stephen Laudig on behalf of the Paddlewheel Alliance requested pursuant to 10 CFR 2.206 of the Commission's regulations that the Director of Nuclear Reactor Regulation (NRR)

suspend or revoke the construction permits issued to Public Service Company of Indiana, Inc. (PSI) for the Marble Hill Nuclear Generating Station, Units 1 and 2. The Alliance also requested that the safety hearings on the facility be reopened.

In addition to specifying the action requested, a petitioner under 10 CFR 2.206 is required to "set forth the facts that constitute the basis for the request," (10 CFR 2.206(a)). Although the Alliance has identified the relief it seeks (i.e. suspension or revocation of the permits and reopening of the safety hearings), the Alliance has not clearly stated the factual basis which would support its request that the Director of NRR issue an Order or recommend reopening of the safety hearings.¹

In its petition the Alliance states that significant problems have been identified in recent months with respect to construction at the Marble Hill site. Because unacceptable construction practices have been revealed by NRC inspectors, the licensee, and construction workers, the Director of the Office of Inspection and Enforcement (I&E) issued an Order on August 15, 1979, to suspend safety-related construction at the Marble Hill site until the licensee submits a description of its revised quality assurance program and of the licensee's actions to assure that safety-related construction will be conducted in accordance with the Commission's requirements. Before permitting resumption of safety-related construction in whole or in part, the Director of I&E must confirm that there is reasonable assurance that safety-related construction will be conducted in accordance with the Commission's requirements. In addition to issuance of the Order, the NRC has referred allegations of criminal activity connected with Marble Hill's construction to the Justice Department for appropriate investigation. The NRC, through the Office of Inspection and Enforcement, will continue to monitor and inspect construction at Marble Hill as appropriate to ensure that the facility is built in accordance with all applicable regulatory requirements. If the Alliance is seeking corrective action with respect to construction deficiencies, the Commission has taken such action in the Director of Inspection and Enforcement's August 15 Order. Should further corrective action be required, the Commission will not hesitate to take appropriate measures.

¹ The Director does not have the power to reopen the safety hearings by reconstituting the Licensing Board or Appeal Board to conduct further proceedings on the issues which the Alliance raises. The Director could recommend to the Commission that the hearings be reopened.

The Alliance seems to suggest that recent construction problems at Marble Hill warrants action by the Director of NRR to institute a proceeding which would explore various issues listed in the Alliance's petition (pp. 3-4). If the construction problems at Marble Hill form the basis of the Alliance's requested relief, it is unclear how construction problems are related to such issues as storage of high-level wastes, provisions for decommissioning of Marble Hill at the termination of its use as an operating facility, and the need for power from the facility.² Without specification of the nexus between construction problems at Marble Hill and issues which on their face appear unrelated to construction practices, the Alliance has not provided a sufficient factual basis in its petition as required under 10 CFR 2.206. A mere allegation that the Alliance or other persons are "newly interested" in the Marble Hill facility is, without more, an insufficient basis for granting the relief which the Alliance requests. By requiring the Alliance to state the factual basis for its request, the Director does not intend to impose an insurmountable burden on the petitioner. Under the Commission's regulations, the Director cannot issue an Order to modify, suspend, or revoke a license without specifying the basis for his action³ See 10 CFR 2.202(a).

² The Alliance also lists issues concerning adequate quality control and construction in conformance with the regulatory requirements (pp. 3-4). As discussed *supra*, the Commission has taken action to correct construction problems at Marble Hill and to assure adequate quality control and construction in conformance with the Commission's requirements. Moreover, the Alliance apparently is not requesting a hearing as an interested party under the August 15th Order. The Alliance specifically stated that its petition was brought under 10 CFR 2.206, and the Alliance also believes that a hearing on the issues specified in the Order is insufficient to satisfy "the newly-aroused public interest" in Marble Hill.

³ With respect to the Alliance's request to reopen the safety hearings, the Director has generally followed in other Decisions under 10 CFR 2.206, the Appeal Board's standard for reopening proceedings: i.e. a petitioner must identify a significant unresolved safety issue or a major change in facts material to the resolution of major environmental issues. See *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-10, 10 NRC 129 (July 6, 1979) (Docket Nos. STN 50-546 and STN 50-547); *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582 (April 13, 1979) (Docket Nos. 50-424 and 50-425). Although the Appeal Board's standard is not binding on the Director when he considers petitions under 10 CFR 2.206, the standard is persuasive in light of the Commission's admonition that 10 CFR 2.206 should not be used "as a vehicle for reconsideration of issues previously decided . . ." *Consolidated Edison Company* (Indian Point Units 1-3), CLI-75-8, 2 NRC 173, 177 (1975).

The only other basis for the Alliance's request is that

Major environmental, health, and safety questions relating to the construction and operation of MH (Marble Hill) . . . have not been adequately addressed at previous hearings, by the Final Environmental Impact Statement, the Preliminary Safety Analysis Report, the Environmental Report-Operating License or the Final Safety Analysis Report. Petition at 2.

The Alliance does not specify which issues it believes were inadequately addressed either in prior proceedings on Marble Hill or in the named document. If the Alliance means the issues which it believes should be litigated in a new hearing (Petition at 3-4), the Alliance does not explain how those issues have receive inadequate consideration. Moreover, although PSI has submitted its Environmental Report for the operating license stage and its Final Safety Analysis Report, the NRR staff has reviewed neither document to determine its acceptability for docketing as an application for an operating license. The staff does not expect to begin this review until 1980. See enclosed letter dated July 23, 1979, from L. S. Rubenstein, NRR, to J. Coughlin, PSI. When the application is formally docketed, a notice of opportunity for a hearing will be issued. See 10 CFR 2.105. Upon issuance of that notice, the Alliance would then have an opportunity to request a hearing on the proposed issuance of an operating license.

In the absence of a factual basis which would support the Alliance's request to further suspend or revoke the Marble Hill construction permits or to reopen the safety hearings, the Alliance's petition is denied.

A copy of this Decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and at the Local Public Document Room for the Marble Hill Nuclear Generating Station, located at the Madison-Jefferson County Public Library, 420 West Main Street, Madison, Indiana 47250. A copy of this Decision will also be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's regulations, this Decision will constitute the final action of the Commission twenty (20) days after the date of issuance, unless the Commission on its own motion institutes a review of this Decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 11th day of October, 1979

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket Nos. 50-424
50-425

GEORGIA POWER COMPANY

(Alvin W. Vogtle Nuclear
Plant, Unit Nos. 1 and 2)(10 CFR 2.206)
October 12, 1979

The Acting Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 that requested reconsideration of a prior 10 CFR 2.206 denial and reconsideration of the need for power from the Vogtle Nuclear Plant, Units 1 and 2.

NEPA: FINAL ENVIRONMENTAL STATEMENT

Modification of an FES by subsequent decisions of the Commission's adjudicatory tribunals is in accord with NEPA.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

The Appeal Board's standard for reopening a proceeding on the basis of new information is persuasive in considering requests under 10 CFR 2.206.

DIRECTOR'S DECISION UNDER
10 CFR 2.206

By petition dated May 1, 1979, Gary Flack on behalf of Georgians against Nuclear Energy requested that the Director of Nuclear Reactor Regulation (Director) reconsider his April 13, 1979, denial under 10 CFR 2.206 of GANE's earlier petition which requested suspension of the construction permits for the Alvin W. Vogtle Nuclear Power Plant, Units 1 and 2, and reconsideration of the need for power from the facility. DD-79-4, 9 NRC 582 (1979).¹ GANE's May 1st petition has also been treated as a request for action under 10 CFR 2.206. Notice of receipt of GANE's May 1st petition was published in the *Federal Register*, 44 Fed. Reg. 33985 (June 13, 1979).

¹ Mr. Flack submitted additional information in support of the petition in letters dated July 17 and August 2, 1979.

GANE asserts three bases for its renewed request to suspend construction of the Vogtle units pending additional hearings to determine the need for the plants:

1. The final Environmental Impact Statement violates the National Environmental Policy Act of 1969 (NEPA) in that it fails to consider conservation as an alternative to nuclear power;
2. The applicant made materially false statements to the Licensing Board regarding the need for power concerning participation in the project and implementation of load management techniques; and
3. Since issuance of the construction permit, circumstances and data have changed so as to mandate revocation of the construction permits.

For the reasons set forth in this decision, and my earlier decision of April 13, 1979, which is incorporated into and made part of this decision, I have determined that the construction permits should not be suspended and that no proceedings to reconsider the need for the Vogtle units will be instituted.

I

Under the Commission's regulations in proceedings in which a hearing is held, *e.g.*, for the issuance of a construction permit, the initial decision of the presiding officer may include findings and conclusions which affirm or modify the content of the final environmental impact statement prepared by the staff. To the extent that findings and conclusions differed from those in the final environmental statement prepared by the staff are reached, the statement will be deemed modified to that extent 10 CFR 51.52(b)(3).

In the proceeding on the construction permits for the Vogtle facility, the presiding Atomic Safety and Licensing Board requested on April 4, 1974, that the staff and Georgia Power Company, (the applicant) address, among other things, "the effect of conservation of energy on Applicant's need for power."² On April 16, 1974, the Board accepted as evidence in the proceeding documents containing the staff's and the applicant's testimony on the conservation issue.³ Upon consideration of the evidence before it, including the supplemental testimony on conservation, the Board concluded that the Final Environmental Statement (FES)

is an adequate and comprehensive review and evaluation Further, the Board finds that the FES, as so supplemented, sets forth an adequate evaluation of all alternatives to the proposed actions as to which evaluation may reasonably be required.⁴

The Board found that the applicant's testimony addressed changes in the rate structure, elimination of promotional advertising, elimination of

² Initial Decision (Partial Construction Permit Proceeding - Environmental Matters and Site Suitability Only), *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1-4), LBP-74-39, 7 AEC 895, 897 (1974).

³ *Id.* at 900.

⁴ *Id.* at 902.

allegedly wasteful uses of electricity, improved insulation and lighting requirements, and load staggering or load shedding which would contribute to conservation. 7 AEC at 910. The Board also found that the staff addressed changes in the rate structure, load shedding, energy efficiency labeling of appliances, lighting efficiencies, advertising and space conditioning as conservation methods. *Id.* at 911. Upon weighing the evidence, the Board concluded that the measures “would not necessarily reduce demand for electricity in Applicant’s service areas and would not obviate the need for all or part of the Alvin W. Vogtle Nuclear Plant.” *Id.* at 911.

In its Supplemental Initial Decision, the Board found that the environmental determinations made in its 1974 decision were still valid. LBP-77-2, 5 NRC 261, 299 (1977). The Appeal Board affirmed the Licensing Board’s decisions on these matters. ALAB-375, 5 NRC 423 (1977). Therefore, as the record in the proceeding on the construction permits for the Vogtle facility expressly shows, conservation was considered as an alternative to the Vogtle facility as part of the environmental review in the manner contemplated by the Commission’s regulations.⁵

II

GANE alleges that the applicant made material false statements to the NRC regarding the need for power in that the applicant misrepresented its intent to offer shares in the Vogtle facility to utilities outside of the State of Georgia and its intent to implement a load management program.

In the first instance, the NRC was aware the applicant was seeking other participants in the Vogtle facility and that adjustments were being made to the

⁵ GANE suggests in its July 17, 1979, letter that modification of the FES by subsequent decisions of the Commission’s adjudicatory tribunals, as provided in 10 CFR 51.52(b)(3), violates NEPA. Two courts of appeal have approved of the Commission’s rule. The District of Columbia Circuit has approved of the practice as departing from neither the letter nor the spirit of NEPA. *Citizens for Safe Power, Inc. v NRC*, 524 F.2d 1291, 1294, n.5 (D.C. Cir. 1975). In *Ecology Action v AEC*, 492 F.2d 998, 1001-2 (2d Cir. 1974), the court recognized that omissions from an FES can be cured by subsequent consideration of the issue in an agency hearing. *See also Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 372 (1975).

percentage participation in the project.⁶ More importantly, however, the need for power is not necessarily related to the issue of plant ownership. In a decision regarding the Marble Hill facility, the Appeal Board rejected the arguments of the intervenors that the change in ownership of a facility necessitated (1) reconsideration of the need for power from the plant and (2) redrafting of the environmental impact statement required by NEPA. In reaching its conclusion, the Appeal Board observed:

The proposed shift in ownership of the plant carries with it no modification of the size, location, character, output, or method of constructing the nuclear facility . . . [T]he nuclear facility described in the environmental impact statement remains the one that would be built. Intervenor's position thus boils down to the premise that, by itself, withdrawal of two utilities from the joint venture casts doubt on the benefit to be derived from the plant and requires redrafting and recirculating the impact statement. We think not. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 184 (1978).

Determination of the need for power in the Vogtle proceeding was essentially unrelated to plant ownership. The original analysis of the need for power and the staff's analysis attached to the April 13th Director's Decision indicated that the Vogtle facility would be needed to serve the applicant's power needs. The nature of plant ownership did not affect those analyses.

GANE also alleges that the applicant made material false statements regarding its intention to implement load management programs. Although Georgia Power Company had earlier intended to broadly implement load management programs, it has apparently decided not to pursue that program at the present time. Implementation of a load management program is neither

⁶ Supplemental Initial Decision (Construction Permit Proceeding) *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), LBP-77-2, 5 NRC 261, 264-265 (1977). In an evidentiary hearing held in February, 1976, the Licensing Board considered a change in ownership of Vogtle Units 1 and 2 from Georgia Power Company (GPC) to a group of applicants including GPC, Oglethorpe Electric Membership Corporation (OEMC), Municipal Electric Authority of Georgia (MEAG), and City of Dalton (Dalton). After the close of the hearing, the applicants notified the Licensing Board of a probable reduction in the ownership contemplated for MEAG and that a revised application for amendment of the Construction Permits would be submitted reflecting new proposed ownership arrangements. In September 1976, the applicants requested an amendment to reflect an anticipated ownership in the Vogtle facility by GPC, OEMC, MEAG, and Dalton in the following respective percentages: 50.7%, 30%, 17.7%, and 1.6%. This reflected a decrease in MEAG's share from 30% of Unit 1 and 25% of Unit 2 to a 17.7% share of both units, and a corresponding increase in GPC's share to 50.7% of both units. This amendment was approved by the Licensing Board. *Id.*

GANE's August 2, 1979, letter enclosed several inquiries from Georgia Power Company addressed to other utilities concerning the possibility of obtaining an interest in the Vogtle facility. A change in ownership would require amendment of the construction permits. Georgia Power has not applied for an amendment, and, absent any formal request from the applicant for further changes in ownership arrangements, the NRC is not in a position to evaluate any such arrangements for the Vogtle facility which Georgia Power may consider proposing at some time in the future.

a condition of the construction permits for the Vogtle facility nor was it a basis for finding that there was a need for the power from the Vogtle facility. The impact of load management programs, including the consequences of both successful and unsuccessful load management programs, was considered in the Licensing Board's Supplemental Initial Decision. 5 NRC at 297. Load management programs are designed to reduce peak loads. Thus, failure to implement a load management program would result in installation of additional peaking units and would not affect base load facilities. Moreover, as the Licensing Board found, "If the Applicant's load management plan does succeed, the resulting shifting of usage to off-peak times will increase the need for base-load generating units." 5 NRC at 297. Therefore, Georgia Power Company's current decision not to pursue a load management program, despite prior intentions to the contrary, does not alter the determination of need for power for the Vogtle facility.

In sum, the information presented by GANE in its recent petition regarding plant ownership and load management do not provide a basis for instituting a proceeding to suspend or revoke the construction permits for the Vogtle facility.

III

GANE alleges in its latest petition that "circumstances and data have so changed as to mandate the revocation" of the construction permits. Before considering the information presented by GANE in support of its allegation, it should be made clear, as stated in the April 13th decision on this matter, that NEPA does not require the Commission to reconsider decisions based on environmental impact statements whenever information developed subsequent to the action becomes available.⁷ Indeed, it is unnecessary for an agency to reopen the NEPA record unless the new information would clearly mandate a change in result. *Greene County Planning Board v. FPC*, 559 F.2d 1227, 1233 (2nd Cir. 1976), *cert. denied*. 434 U.S. 1086 (1978).⁸

As noted in my April 13th decision on this matter, the Atomic Safety and Licensing Appeal Board has specifically dealt with efforts to reopen the record on the issue of need for power on the basis of new evidence offered in

⁷ Director's Denial of 10 CFR 2.206 Request, *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582 (April 13, 1979), citing *Warm Springs Dam Task Force v. Gribble*, 431 F. Supp. 320, 323 (N.D. Cal. 1977), *stay pending appeal denied*, 565 F.2d 549 (9th Cir. 1977); *Ogunquit Village Corp. v. Davis*, 553 F.2d 242 (1st Cir. 1977).

⁸ The petitioner's citations in its July 17, 1979, letter to *Libby Rod & Gun Club v. Poteat*, 457 F.Supp. 1177 (D. Mont. 1978) and *Monarch Chem. Works v. Exon*, 452 F. Supp. 493 (D. Neb. 1978), are inapposite. *Exon* involved an EIS on a redevelopment program in an urban area. Subsequent to issuance of the EIS, the city made a major change in the project - a proposal to build a correctional facility - not contemplated in the original EIS. This, the court held, required the city to reevaluate the sufficiency of the original EIS. No such major change to the Vogtle facility is at issue in GANE's petition.

(Footnote continued on next page)

proceedings held prior to issuance of a construction permit. *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1&2), ALAB-443 6 NRC 741, 750-51 (1977). In its *Cleveland Electric* decision, the Appeal Board emphasized that dissatisfied litigants had a difficult burden to bear in seeking to reopen the record in light of the well-recognized need for finality at some point in the administrative process. See *ICC v. Jersey City*, 322 U.S. 503, 514 (1944). Thus, the Appeal Board has held that new information must identify a major change in facts material to the resolution of major environmental issues. Cf. *Commonwealth Edison Company* (LaSalle County Nuclear Station, Units 1&2), ALAB-153, 6 AEC 821, 824 (1973).⁹ Although the Director of NRR in considering a request for action under 10 CFR 2.206 is not bound by the Appeal Board's standard for reopening a proceeding on the basis of new information, the Appeal Board's standard is persuasive in considering requests under 10 CFR 2.206, because, as the Commission has indicated on another occasion. "[P]arties must be prevented from using 10 CFR 2.206 procedures as a vehicle for reconsideration of issues previously decided. . . ." *Consolidated Edison Company* (Indian Point, Units 1-3), CLI-75-8, 2 NRC 173, 177 (1975).¹⁰

The staff has analyzed the information presented in GANE's petitions and has found that this information does not identify a major change in facts which alter the need for power determination as originally analyzed in the construction permit proceedings for the Vogtle facility.

The staff's analysis appended to the April 13th decision took into account the applicant's revised demand predictions of August 1978. Using that data, the staff concluded that the capacity represented by Vogtle Units 1 and 2 will be needed to meet the power demands of the Georgia Power Company's system. GANE indicated in its latest petition that the applicant's forecasts of peak demand have been revised downward since 1976, but this fact alone does not change the staff's conclusion, based on *more recent data*, that there is a need for the Vogtle facility. GANE asserts that the April 13th decision based

(Footnote continued from previous page)

The *Poteat* decision, involving an EIS on a project in early stages of construction, required revision of the EIS in light of information unavailable to the agency at the time the EIS was originally prepared and in light of significant developments, *i.e.*, listing of an endangered species and new historic sites since issuance of the original EIS. Except as to an unsubstantiated claim as to new information on conservation, GANE has not provided any information which serves as a basis for reevaluation of the FES for Vogtle. As discussed in this decision, GANE has not presented information which would clearly mandate a change in result under the *Greene County* standard or which represent a major change in circumstances under the Appeal Board's standard (discussed in the main text *infra*), standards with which *Exon* and *Poteat* do not quarrel.

⁹ Of course, once a proceeding is completed, the Appeal Board has no jurisdiction to entertain motions to reopen the record. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-530, 9 NRC 261 (March 19, 1979).

¹⁰ Indeed, the Appeal Board's standard has been persuasive in other Director's Decisions on 10 CFR 2.206 petitions, including the April 13th decision on GANE's earlier petition and in *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-10, 10 NRC 129 (July 6, 1979).

on the staff's analysis of the applicant's August 1978 forecast is erroneous, because the applicant revised on March 5, 1979, its August 1978 forecast. GANE's assertion is without merit. The maximum decrease in estimated peak demand represents a difference of only 9 MW between the August 1978 and the March 1979 data.¹¹ This minor reduction in the demand estimates does not affect the staff's analysis.

GANE misrepresents the staff's analysis of solar energy and incorrectly interpolates this data to arrive at an estimate of solar energy in 1989. The staff analysis discussed *thermal* energy having the theoretical capability of *replacing* electrical energy for those periods of time when adequate solar energy was available. If the solar installations were to be used to generate electricity by means of photovoltaic cells, the low efficiency of conversion from solar energy to electric energy would result in significantly less available energy than the values of 124 MW in the year 1985 and 1500 MW in the year 2000 that the staff estimates to represent the theoretical maximum amount of replacement energy which could be provided. Moreover, GANE's estimate of 490 MW of equivalent electrical energy in 1989 is erroneously based on an arithmetic interpolation of the staff's values for 1985 and 2000, i.e., GANE assumes a constant addition of approximately 92 MW of equivalent electrical energy each year. However, annual growth of this nature is calculated on the basis of annual percentage increase. For the 15-year interval between 1985-2000, the calculated annual increase would be approximately 18% per year, and the equivalent electrical energy theoretically available in 1989 would be about 240 MW. Again, much less than this amount would be available if the solar installations were to be used for the generation of electricity.

With respect to other issues, such as the effects of national energy policy on conservation and of alternative energy sources on the need for power, GANE has not presented information, other than its speculation that these matters may have some additional impact on need for power, which would significantly alter the cost-benefit balance as originally analyzed in the construction permit proceedings for the Vogtle facility. GANE believes that there is an apparent inconsistency in Georgia Power Company's response to GANE's earlier petition in that a Table on page 3-2 of the response (which is appended) reflects a reduction of 68 MW in overall projected generating capacity for Georgia Power at the same time the 67 MW Goat Rock facility enters service. The reduction in projected generating capacity for 1989 is the result of scheduled capacity retirements for that year, which were not specifically listed in the Table. The applicant has informed the staff that four coal-fired plants, having a capacity of 135 MW, are scheduled for retirement in that year. These plants, Arkwright 3 and 4 and Mitchell 1 and 2, were

¹¹ For example, the August 1978 estimate of peak demand for 1981 is 12,107 MW, compared to 12,098 MW estimated in March 1979; for 1990, the August 1978 estimate is 17,614 MW as compared to 17,615 MW in the March 1979 forecast.

constructed in the 1940's. This retirement of 135 MW of capacity, when offset by the 67 MW Goat Rock addition, results in a net 68 MW reduction in capacity for 1989.

IV

Based on the foregoing discussion, I have found that GANE has not presented information which would significantly alter the need for power determination as originally analyzed in the construction permit proceedings for the Vogtle facility. Consequently, GANE's petition for suspension of the construction permits and for the institution of a proceeding to determine whether there is a need for the Vogtle Units 1 and 2 on the basis of this new information is *denied*.¹²

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D. C. 20555, and the local public document room for the Alvin W. Vogtle Nuclear Plant, Unit Nos. 1 and 2, located at Burke County Library, 4th Street, Waynesboro, Georgia. A copy of this decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

FOR THE NUCLEAR REGULATORY COMMISSION

Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland,
this 12th day of October 1979.

¹² As stated in the April 13th decision of GANE's earlier petition, this decision does not preclude GANE or any other person whose interest may be affected from raising this or other issues at the time the Commission proposes to issue the operating license for the Vogtle plant. Contrary to GANE's understanding, 10 CFR 51.21 contemplates, upon application for an operating license, the applicant's submission of an environmental report as a mechanism for updating the FES issued in connection with the construction permit. The staff will then prepare a draft EIS for the operating license as provided in 10 CFR 51.22.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket Nos. 50-280

50-281

VIRGINIA ELECTRIC AND
POWER COMPANY

(10 CFR 2.206)

(Surry Power Station, Units 1 and 2)

October 24, 1979

The Director of Nuclear Reactor Regulation denies petition under 10 CFR 2.206 requesting suspension of license amendments authorizing replacement of steam generators at the Surry Power Station, Units 1 and 2, pending preparation of environmental impact statement.

NEPA: FEDERAL AGENCY

The agency in charge of a proposed federal action is the party authorized to make the threshold determination whether an action is one that "significantly affects the human environment."

NEPA: SCOPE OF REVIEW

In determining whether a proposed action "significantly affects the human environment," the staff considered (1) the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area affected by it and (2) the absolute quantitative adverse environmental effects of the action itself, including the cumulative harm that results from its contribution to existing adverse conditions or uses in the affected area.

NEPA: SCOPE OF INTERESTS PROTECTED

NEPA was not intended primarily as a device for regulating the economic costs of government actions, thus the economic costs of an action do not themselves trigger the requirement to prepare an environmental impact statement.

NEPA: PROGRAMMATIC EIS

Unless separate proposals for similar actions will have a cumulative or synergistic environmental impact, a programmatic environmental impact statement is not required.

NEPA: PROGRAMMATIC EIS

The Council on Environmental Quality's (CEQ) guidelines promulgated prior to 1979 are merely advisory, and regardless of the binding effect on the NRC of the 1979 CEQ regulations, these regulations do not apply to the staff's actions prior to the effective date of the regulations.

NEPA: NEGATIVE DECLARATION

NRC regulations require that an environmental impact appraisal contain a description of the proposed action, a summary description of probable environmental impacts, and the staff's basis for concluding that an EIS is not necessary.

NEPA: CONSIDERATION OF ALTERNATIVES

In its environmental impact appraisal, the staff considered those options which were competitive with the proposed action and properly excluded options which were likely to be at least as harmful as the proposed action.

FWPCA: SECTION 401 CERTIFICATION

The staff does not interpret section 401 of the FWPCA so as to require the staff to obtain State certification under section 401 for an amendment to an operating license.

OPERATING LICENSES: AMENDMENTS

The only circumstances where the staff has required issuance of a construction permit prior to amendment of an operating license have involved changes in the type of major components of existing facilities to a different type of equipment. The changes introduced new, significant issues relating to the nature and function of the facilities and to public health and safety.

OPERATING LICENSES: AMENDMENTS

The necessity of issuing license amendments for the Surry steam generator repair program is attributable to the safety questions inherent in the repair program, not to the structural changes to be made to the facility.

REGULATIONS: INTERPRETATION

OPERATING LICENSES: AMENDMENTS

10 CFR 50.54(n) requires a construction permit for facility modifications requiring changes in technical specifications which also entail material alterations of the facility.

REGULATIONS: INTERPRETATION

Replacement of the steam generators at the Surry Power Station does not constitute a "dismantling" within the meaning of 10 CFR 50.82.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated April 21, 1979, Mr. James B. Dougherty on behalf of four citizen's groups: Potomac Alliance, Citizen's Energy Forum, Inc., the Virginia Sunshine Alliance, and Truth in Power, Inc. (Citizen's Groups), requested that:

1. The Commission shall suspend VEPCO's Operating License No. DPR-37 and order that the Surry steam generator replacement project be brought to an immediate halt.

2. The Commission shall direct the Director of Nuclear Reactor Regulation to serve upon VEPCO an Order to Show Cause at a public hearing why Operating License No. DPR-37 should not be suspended pending performance of the environmental studies and other relief described below.

3. The Commission shall direct the NRC staff to prepare an environmental impact statement addressing the Surry project.

4. The Commission shall direct the NRC staff to prepare a programmatic environmental impact statement addressing the cumulative environmental impacts and the long-range policy implications of current and future steam generator replacement and repair projects.

5. The Commission shall prohibit the NRC staff from reinstating Operating License No. DPR-37 or permitting further progress on the Surry steam generator replacement program until it has fully reviewed and satisfied its obligation under the following sections of the regulations, including the making available an opportunity for a public hearing:

(a) 10 CFR 20.302, requiring NRC approval of proposals to dispose of nuclear waste;

(b) 10 CFR 50.82, requiring NRC approval of proposals to dismantle nuclear power plants, and

(c) 10 CFR 20.1(c), requiring occupational radiation exposures to be maintained as low as is reasonably achievable.

6. The Commission shall prohibit VEPCO from making any modification to the Surry facility resulting in discharges into navigable waters until it has obtained from the Commonwealth of Virginia an NPDES permit or an amendment to its current NPDES permit for the Surry plant, as required under, e.g., Sections 301 and 402 of the Federal Water Pollution Control Act, 42 U.S.C. Sections 1311 and 1342.

7. The Commission shall prohibit the staff from approving any modification of the Surry facility resulting in discharges into navigable waters until it has received from the Commonwealth of Virginia the certification required under Section 401 of the Federal Water Pollution Control Act, 42 U.S.C. Section 1341.

8. The Commission shall notify all Atomic Safety and Licensing Boards, as appropriate, of the above actions and shall prohibit the issuance of any permit, license, or amendment thereto allowing the replacement or repair of steam generators pending the completion of the environmental impact statements and other studies described above.

The Secretary of the Commission directed the staff on May 22, 1979, to treat this petition under 10 CFR 2.206 of the Commission's regulations. Notice that the petition was being treated under 10 CFR 2.206 was published in the *Federal Register*. 44 Fed. Reg. 36522 (June 22, 1979). The Citizen's Group's petition is similar to petitions filed earlier by the North Anna Environmental Coalition and by the Environmental Policy Institute, both of which were denied by the Director of Nuclear Reactor Regulation. See *Virginia Electric and Power Company* (Surry Power Station, Units 1 and 2), DD-79-1, 9 NRC 199 (Feb. 1, 1979) and DD-79-3, 9 NRC 577 (Apr. 4, 1979).

The asserted bases for the request by the Citizens' Groups are as entitled by the petitioner.

1. The NRC Staff Violated the National Environmental Policy Act in Issuing Amendment Nos. 46 and 47 to VEPCO's Operating Licenses for the Surry Station;

2. The Staff Violated the Federal Water Pollution Control Act in Issuing Amendment Nos. 46 and 47 to VEPCO's Operating Licenses for the Surry Station;

3. The Issuance of the Operating License Amendments was Arbitrary and Capricious and Violated the Administrative Procedures Act and the Atomic Energy Act; and

4. The License Amendments were Issued Contrary to NRC Regulations.

BACKGROUND

In accordance with 10 CFR 50.59 of the Commission's regulations, a licensee seeking to make a change in the Technical Specifications or a change in the facility involving an unreviewed safety question must submit an

application for an amendment to the license. On August 17, 1977, VEPCO submitted a request for NRC review and approval required in order to repair the steam generators at the Surry Power Station, Units 1 and 2. It was determined in accordance with 10 CFR 50.59 that such a program would involve an unreviewed safety question and, therefore, would require an amendment of VEPCO's Facility Operating License Nos. DPR-32 and DPR-37 for the Surry plant. In accordance with 10 CFR 2.105, a Notice of the Proposed Issuance of Amendments to the licensees at issue was published in the *Federal Register* on October 27, 1977 (42 FR 56652). The Notice was also available for public inspection in the Commission's Public Document Room and at the local public document room at the Swem Library, College of William and Mary, Williamsburg, Virginia. This Notice provided an opportunity for interested persons to request a hearing by November 28, 1977. No requests for a hearing were received in response to that *Federal Register* notice.¹ The Citizen's Groups request does not purport to be filed pursuant to the October 27, 1977 notice of opportunity to request a hearing.

Prior to issuing the amendment to allow the repairs to be made to the steam generators, the Office of Nuclear Reactor Regulation (NRR or the staff) prepared the staff Safety Evaluation Report (SER) dated December 15, 1978. That evaluation, which expressly addressed the matter of radiation exposure to workers, concluded that there is reasonable assurance that the health and safety of the public (including the workers) will not be endangered by the proposed steam generator repair program and that the changes would be conducted in compliance with the Commission's regulations.

Similarly, it was determined after preparation of an environmental impact appraisal that a negative declaration rather than an environmental impact statement was appropriate. The declaration was issued on January 20, 1979.

I have reviewed the four asserted bases listed above which were given by the Citizen's Groups as bases for the requests made of the Commission and have evaluated them in the following pages.

1. The NRC Staff Abided by the National Environmental Policy Act in Issuing Amendment Nos. 46 and 47 to VEPCO's Operating License for the Surry Station.

A. The Issuance of the Operating License Amendments Did Not Constitute a Major Federal Action Significantly Affecting The Environment and Thus Did Not Require the Preparation of an Environmental Impact Statement.

Section 102(2)(c) of NEPA requires that an environmental impact statement (EIS) accompany "major Federal actions significantly affecting the

¹ The Atomic Safety and Licensing Board constituted to review requests for a hearing under the October 27, 1977 *Federal Register* Notice provided the Commonwealth of Virginia the opportunity to file a request for a hearing up to 10 days after issuance of the Staff's Safety Evaluation Report which was issued on December 15, 1978. On December 20, 1978, the Commonwealth stated it would not request a hearing.

quality of the human environment.” 42 U.S.C. Section 4332(2)(c) (1970). Pursuant to Part 51 of the NRC regulations, the Staff evaluated the environmental effects of the issuance of Amendments Nos. 46 and 47 to VEPCO’s operating license for the Surry station. 10 CFR 51.5(c)(1). The Staff has determined that the issuance of the amendments is not an action which significantly affects the environment. Therefore, the Staff did not prepare an environmental impact statement but rather the Staff prepared an environmental impact appraisal (EIA) and a negative declaration in accordance with the NRC regulations. 10 CFR 51.5(c)(1).

All human actions, including major Federal actions, impact on the environment. In recognition of this fact, Congress has instructed that environmental impact statements be prepared in conjunction only with those major Federal actions which significantly affect the environment. NEPA Section 102(2)(c) (1970), 42 U.S.C. Section 4332 (1970). The Surry steam generator repair project is not one of these actions. The steam generator repair effort involves insignificant health risks to individuals both on and off the site. Furthermore, the costs of the project have been spread so as to insure that no individual bears a significant portion of the financial burden. Finally, whether viewed in the long or short run, the project will not have a detrimental effect upon the energy-producing capability of our natural resources. It is on the basis of these facts that the Staff decided that the Surry steam generator repair project does not significantly affect the environment. Hence, an environmental impact statement was not required.

In assessing the Staff’s decision, it must be recognized that the agency in charge of a proposed Federal action (in this case the NRC) is the party authorized to make the threshold determination whether an action is one which “significantly affects the human environment.” S. Rep. 91-216, 91st Cong. 1st Sess. at 20. For purposes of this evaluation, the agencies have been instructed to review the proposed action in the light of two key factors:

- (1) The extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area affected by it and (2) the absolute quantitative adverse environmental effects of the action itself, including the cumulative harm that results from its contribution to existing adverse conditions or uses in the affected area.

Hanly v. Kleindienst, 471 F.2d 823, 830-31 (2d Cir. 1972), *cert denied* 412 U.S. 908; *see also First National Bank of Chicago v. Richardson*, 484 F.2d 1369, 1373 (7th Cir. 1973).

With respect to the first of these criteria, courts have stressed that the significance of an environmental effect is largely determined by the milieu in which it is projected to occur. Thus, “where conduct conforms to existing uses its adverse consequences will usually be less significant than when it represents a radical change.” *Sierra Club v. Cavanaugh*, 447 F. Supp. 427, 431 (D.S.D. 1978). Moreover, this principle is applied to situations in which existing environmental conditions are below an ideal standard. *Hanly v. Kleindienst*, *supra* at 831; *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402 (1971).

a. The action Did Not Create Any Increase In Adverse Environmental Effects Over Those Caused By Existing Uses.

The first test in *Harly v. Kleindienst, supra*, in seeing whether an environmental impact statement is needed, is to examine the extent to which the proposed action causes adverse environmental impacts in excess of those created by existing uses in the area. The teaching of *Aberdeen & Rockfish R. Co. v. SCRAP*, 422 U.S. 289, . . . (1975), is that in determining whether a proposed Federal approval will significantly affect the environment one looks to the environmental effects of the authority sought in contrast to the environmental effects of the present authorization, and not to some hypothetical condition.

In *SCRAP* it was held that the environmental effects of an across-the-board rate increase need *not* be compared to the effect of rates that would encourage the recycling of material, but only need be compared to the environmental effect of rates presently authorized. Thus one examines the environmental effects of what is proposed, against the environmental effects that could be incurred under present authorizations. See also *Kleppe v. Sierra Club*, 427 U.S. 390 (1976).

Here the environmental effects of what is authorized would exceed those that will be caused by the amendment allowing repair of the facility. Radiological exposure will be substantially reduced. Within three to four years of completion of the repair, even counting the radiological doses stemming from the repair, a saving will be incurred in the total radiological doses over that which would be incurred over operation without this repair and only the plugging of defective tubes.

Although NRC authorization would have been needed to allow operation after further reductions in the number of operating steam generator tubes if the amendments authorizing the repair of the facility had not been granted, the facility is authorized to operate for 30 years. In the *SCRAP* case the fact that the railroads needed the across the board rate increase to continue to operate did not change the rules of requiring only an examination of what is proposed against what is authorized so as to require consideration of the environmental effects of restructuring the rate system. Here the fact that some change in operation had to be approved for VEPCO to exercise its license does not alter the rule that one compares the environmental effects of the approval sought against the environmental effects of what is presently authorized. Not to replace the steam generators and just continue to remove deteriorated steam generator tubes from service by locating and plugging them, as has been done in the past, cause far larger radiological doses than will be incurred under the subject amendments which allow repair of the facility to avoid these conditions.

Solid waste to be caused by the repair is subsequently dealt with, as is the commitment of resources necessary for the repair.

There is no significant increase in the commitment of resources. The waste generated, as subsequently shown, is insignificant compared with that which

will be caused by the ultimate dismantling of the plant as a whole. That the resources to be used in the repair are very small is also demonstrated.

The petitioners seek to premise a major portion of their argument on the economic costs of the repair and the purchase of substitute power during the repair. Leaving aside the question of whether such economic effects require the preparation of an environmental impact statement, the repair will save money in the long run. The costs that would be incurred by society at large, and by the customers of VEPCO, by not doing the repair and operating the plant in a degraded condition would be greater than the costs of the repair, including the purchase of substitute power during the repair.

As will be shown below, the Staff has responded to this court-imposed test by devoting much of its analysis to the relationship between existing environmental conditions at and around the Surry plant and the projected changes thereto resulting from the steam generator renovation. The petitioners have characterized this portion of the analysis as a "highly transparent statistical sleight of hand." Petition at 23. This criticism is in direct conflict with the view adopted by the Federal courts, that data relating to a comparison between environmental conditions before and after the undertaking of a proposed project is highly pertinent to the discussion of whether a Federal action significantly affects the quality of the human environment.

In sum, the activities authorized by decreasing long-term radiological exposure over what would be incurred if the facilities were to operate without the projected repairs and by being more economical than not repairing the steam generators will *not* cause adverse environmental effects in excess of those created by existing uses in the area affected. Under the first test of *Hanly v. Kleindienst, supra*, there was no need for an impact statement.

b. The Absolute Adverse Environmental Effects Are Not So Great As To Require An Environmental Impact Statement.

The Staff, in its environmental impact assessment (EIA) concluded that the environmental consequences of the Surry renovation are "insignificant" as the term has been defined by the courts. Based on the following, I believe that the Staff's assessment was correct.

1. Occupational Radiation Exposure

First, the increase in health risk to the workers attributable to radiation exposure experienced during the repair operation is insignificant in relation to the spontaneous health risk confronting the workers prior to their participation in the repair operation.² The Staff calculates that the repair effort will

² The Staff has focused on the health risk effects associated with radiation exposure in conformance with the basic NEPA objective of assessing government actions for their tangible effect on the human environment. S. Rep. 91-216, 91st Cong., 1st Sess. at 20.

produce an increase in premature fatalities among the workers of approximately 0.6 event and an increase in genetic effects among the worker population of approximately 1 event.³

To put these figures into perspective, it should first be noted that according to present cancer mortality rates it can be projected that approximately 20% of the workers employed at Surry during the total repair operation will eventually die of cancer from causes other than the radiation exposure experienced at Surry during the repair operation.⁴ Thus, the 0.6 cancer-caused death estimate for the repair operation represents 0.15% of the estimate for the total incidence of cancer-caused deaths for the worker population.

Second with respect to genetic effects, it can be estimated that the worker population at Surry will experience 600 births with genetic effects over the next five generations from causes other than the exposure experienced at Surry.⁵ Hence, the 1 event projection for the repair program represents 0.3%

³ The increment in premature cancer mortality is calculated using the following formula: (*Final Generic Environmental Statement on the Use of Recycle Plutonium in Mixed Oxide Fuel in Light Water Cooled Reactors*, NUREG 002, Volume 3, Chapter IV, Section J, Appendix B, August 1976).

$$1.35 \times 10^{-4} \text{ cancer deaths} \times \text{total body man-rem dose} = \text{premature cancer fatality}$$

The increment in genetic effects is calculated using the formula: (*Final Generic Environmental Statement on the Use of Recycle Plutonium in Mixed Oxide Fuel in Light Water Cooled Reactors*, NUREG 002, Volume 3, Chapter IV, Section J, Appendix B, August 1976).

$$2.58 \times 10^{-4} \text{ genetic effects} \times \text{total body man-rem dose} = \text{genetic effects}$$

The Staff has accepted VEPCO's estimate of 4140 man-rem for the repair operation. See EIA, p. 6. Thus:

$$(1) \text{ Premature Cancer Fatalities for the repair operation} = 1.35 \times 10^{-4} (4140) = 0.56\% \text{ deaths}$$

$$(2) \text{ Genetic Effects for the repair operation} = 2.58 \times 10^{-4} (4140) = 1.07 \text{ genetic effects}$$

The Staff's focus on premature cancer fatality and genetic effects is justified by the fact that these two health effects stand as the two key indices for the measurement of health effects attributable to exposure to low-levels of radiation. (*The Effects on Populations of Exposure to Low Levels of Ionizing Radiation*, Advisory Committee on the Biological Effects of Ionizing Radiation, National Academy of Science, Nov. 1972).

⁴ This estimate is calculated by multiplying the number of workers by the cancer mortality rate as measured in 1976. (See Vital Statistics of the United States, 1976). As of July 31, 1979, 1,850 workers had been employed on the Unit 2 repair effort. Assume that 2,000 workers will be employed for the total Unit 1 and Unit 2 effort. Thus:

$$2,000 \times \frac{19.8 \text{ cancer-caused deaths}}{100 \text{ total deaths}} = 396 \text{ cancer-caused deaths}$$

⁵ This estimate is calculated by (1) applying the statistical model adopted in BEIR I and substantially retained in BEIR III according to which 6% of all children are born with some genetic effect and (2) that the workers at the plant will each produce 2 children during their lifetime, thus maintaining the population at a stable level. Thus:

$$1,000 \text{ workers} \times \frac{2 \text{ children}}{\text{worker}} \times \frac{.06 \text{ risk}}{\text{child}} = 120 \text{ genetic effects of}$$

spontaneous origin x 5 generations = 600 genetic effects over 5 generations.

of the prediction for the total incidence of genetic effects over the next five generations for the worker population.

These small percentage changes in health risk demonstrate that, in relation to pre-existing levels, the increments in health risk attributable to the repair operation are insignificant.

The occupational exposure resulting from the project is also insignificant when considered by itself. It must be emphasized that the "absolute component" of the *Hanly* test was not exclusively meant to analyze incremental changes in the abstract. Such analysis would eventually devolve into intuitive normative judgments, impervious to rational discussion. Rather, the courts have been mainly concerned with the cumulative effect of this increment on existing conditions:

Although the existing environment of the area which is the site of a major federal action constitutes one criterion to be considered, it must be recognized that even a slight increase in adverse conditions that form an existing environment milieu may sometimes threaten harm that is significant. One more factory polluting air and water in an area zoned for industrial use may represent the straw that breaks the back of the environmental camel. Hence, the absolute, as well as comparative, effects of a major federal action must be considered. *Hanly v. Kleindienst, supra* at 831.

Applying this principle to the Surry program, the crucial fact to be recognized is that the incremental changes in the health risk to the workers produced by radiation exposure are quite small. *Supra* p. 630, et seq. Furthermore, considering these changes in health risk purely in the abstract, the Staff reasonably concluded that the 0.6 event increase in cancer fatalities and the 1 event increase in genetic effects projected for the Surry operation are insignificant. EIA at 9.

In addition, the occupational exposure produced by the repair operations has an insignificant environmental impact in the long run. This conclusion is based on a comparison between the predicted dose-savings that will be produced by the generator repair and the dose-increases discussed above. (The dose saving is calculated by subtracting the estimated annual dose after repair from the observed dose before repair. The Staff estimates the dose saving at between 1200 to 1300 man-rem per year.) The Staff estimates that the dose-reductions resulting from the installment of "clean" generators will offset the 4140 man-rem cost of repair within three or four years after the completion of the project. Thus, both from the long-run and short-run perspectives, the occupational exposure produced by the Surry steam generator repair project will have an insignificant impact on the on-site environment.⁶

⁶ As of July 31, 1979, the repair program on Unit 2 was 80% complete. Since the high exposure work was largely in the early phase of the program, the exposure is more than 50% of the final total. As of July 31, 1979, this was 1515 man-rem.

2. Public Radiation Exposure

The public radiation exposure attributable to the repair effort also will produce insignificant increases in the health risk to the approximately 2 million people who live within 50 miles of the Surry plant. First, it is estimated that the public radiation exposure attributable to the repair effort will produce .0009 premature cancer fatalities to the surrounding population.⁷ Applying the same cancer-caused mortality rate employed in the discussion of occupational exposure, it can be projected that roughly 400,000 of the 2 million people living within 50 miles of the Surry plant will eventually die of cancer. Thus the increment in cancer fatalities projected for the surrounding population is $2 \times 10^{-7}\%$ of the expected spontaneous cancer-caused death rate.

Second, it is projected that the repair effort will produce approximately .0018 genetic effects over the ensuing five generations among the surrounding population. This same population would ordinarily be expected to experience 100,000 genetic effects over the ensuing five generations according to the model employed in the discussion of occupational exposure. Thus, the increment in genetic effects to the surrounding population produced by the repair operation will be less than $2 \times 10^{-6}\%$ of the expected spontaneous rate of genetic effects for the surrounding population.

The Staff maintains that, measured in both relative and absolute terms, the increase in health risk effects to the surrounding population produced by the public exposure resulting from the steam generator repair is insignificant.

3. Solid Waste

The petitioners also cite the Staff's exclusion of an analysis of the waste products attributable to the steam generator lower assemblies in its general discussion of solid waste as a defect in the EIA. The Staff did not include this analysis for the reason that the replaced lower assemblies are not, at this time, being disposed of. Rather, these generator lower assemblies are being stored⁸ until the Surry units are decommissioned at which time (approximately 30 years from now) they will be disposed of along with the other components of the plant. Moreover, the failure to consider the ultimate disposition of the generators in the EIA is insignificant. EIA at 13. The generators are expected to produce approximately 20,000 cubic meters of waste when they are removed from the storage facility. This quantity is a small fraction of the millions of cubic meters of waste that will have to be disposed of when the plant is decommissioned.

⁷ This figure is calculated thusly:

$$1.35 \times 10^{-4} (7 \text{ man-rems}) = .0009 \text{ premature cancer deaths}$$

For a discussion of the public radiation dose, see EIA at 12.

⁸ One steam generator lower assembly may be shipped to Hanford for examination and research. The environmental effects of the shipment of that assembly, upon which the repair effort is not dependent, are to be separately assessed by DOE/PNL.

More importantly, the Staff's omission of the six stored steam generator lower assemblies from the consideration of solid waste does not affect the Staff's conclusion with respect to radiation exposure. First, the on-site exposure resulting from the movement of these assemblies from the plant to the storage facility was included in the total occupational exposure estimates. The total occupational exposure limits were demonstrated above to be insignificant. *Supra* p. 631 et seq. Thus the aforementioned omission was reasonable in this context.

Second, the Staff did discuss the onsite and offsite exposure attributable to the assemblies while in storage. The Staff found that an individual spending an entire year at the site would receive less than 1 milli-rem of radiation exposure from the stored assemblies. EIA at 13. This dose equals one percent of the natural background dose to such an individual and thus is highly insignificant. EIA at 13.

4. Economic Cost

The petitioners also cite the financial costs of the repair project, which they assume will ultimately be reflected as rate increases to VEPCO's customers, as a significant environmental effect. First, it must be recognized that NEPA was not primarily intended to serve as a statutory device for regulating the economic costs of government actions.

The notion that economic costs alone could trigger the EIS requirement has been frequently rejected by the courts. *See, e.g., Image of Greater San Antonio v. Brown*, 570 F.2d 517 (5th Cir. 1978), *Breckinridge v. Rumsfeld*, 537 F.2d 864 (6th Cir. 1976), *cert. denied* 429 U.S. 1061, (1977), *National Association of Government Employees v. Brown*, 556 F.2d 76 (D.C. Cir. 1977). Each of these courts recognized that Congress intended that the NEPA EIS requirement serve primarily as a device to protect the natural, physical environment. The *Breckinridge* court found the remarks of Senator Henry Jackson to be quite instructive in this context: "The basic principle of the [environmental] policy is that we must strive in all that we do, to achieve a standard of excellence in man's relationship to his physical surroundings." *Breckinridge v. Rumsfeld, supra* at 866, quoting from 115 Cong. Rec. 40416 (1969). In light of the strong evidence of Congress' focus on the natural environment in its enactment of NEPA, courts have relegated socio-economic effects to a secondary status in the NEPA analysis. *Image of Greater San Antonio v. Brown, supra* at 527.

This hierarchy of concerns has in fact been recognized by the NRC. With respect to the question of whether the NRC must compare the costs of nuclear plants with the costs of alternative source facilities, the Appeal Board stated:

[N]EPA requires us to look for environmentally preferable alternatives, not cheaper ones. Put another way, once it has been shown that the power to be produced by a plant is needed and that no environmentally preferable way exists of obtaining it, the acceptability of the 'cost' of the plant in dollars is a question for the utility and the State regulatory

agencies, the true experts in this area." *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458 7 NRC 155, 168 (1978).

Nonetheless, even if these costs are considered in the NEPA analysis, they cannot be said to constitute an adverse economic effect, as the petitioner's theory is both lacking in support and is in direct conflict with the facts of this case.

Specifically, the petitioners assert that the public is adversely affected by the project because it is receiving no "tangible benefit to offset its pecuniary injury." *Petition* at 15, n. 1. On the contrary, the public will be benefited as a result of the repair project. As against the option of derating the reactor (maintaining it without major structural repair with operational restrictions), the Staff estimates that the repair project will produce a net saving in terms of power replacement costs. This calculation conservatively neglects costs which are ancillary to the derating option such as costs of (1) the inspection and plugging service, (2) the future modifications to control corrosion and (3) the costs resulting from frequent shutdowns during a derating program. EIA at 14. This cost-avoidance certainly constitutes a "tangible benefit" to the public. Moreover, these benefits would not accrue to the public if it were not for VEPCO's decision to undertake a repair program.

It must be emphasized that this discussion of the economic effect of the repair effort has focused upon the impact on the public. It has not dealt with the effect of the project upon the rate-payer. This orientation reflects the fact that the NRC is not involved in determining rates since concerns about rates are not within the scope of interests sought to be protected by the Atomic Energy Act. *Portland General Electric Company* (Pebble Springs, Units 1 and 2), CLI-76-27, 4 NRC 610, 614 (1976). Thus while the Staff analyzed the economic costs of the repair project in aggregate terms, the Staff avoided a discussion of the distribution of the costs between shareholders and rate-payers and the distribution within the universe of rate-payers.

Nevertheless, even if the petitioners' assumption that the residential rate-payers will bear the brunt of the project costs is conservatively adopted, the economic impact on these rate-payers is insignificant. This can be demonstrated by comparing the estimated *per resident* utility rate increase resulting from the repair operation with the *per capita* income in the Commonwealth of Virginia. Such a comparison yields the result that the rate increase equals .0037% of the Virginia median per family disposable income. This figure is derived from data supplied by the Tayloe-Murphy Institute, University of Virginia. This figure is quite conservative as it results from the acceptance of the petitioner's cost increase estimates of \$52 per residence as opposed to VEPCO's \$38 estimate. Thus, in relation to existing economic conditions the cost increase is not significant.

5. Commitments of Resources

The petitioners cite various factor inputs as constituting "irreversible and irretrievable commitment of resources" which entail significant environmental costs. 42 USC Sec. 4332(2)(c)v. Each of these inputs, when gauged against

aggregate supply figures, is insignificant. First, the petitioners cite the use of 1350 tons of carbon steel and 48 tons of stainless steel for the project as having a significant effect on the environment. Potomac Alliance Petition at 18. To place these figures into perspective, it is useful to note that in 1977 the United States produced 108.1 million tons of carbon steel and 17.2 million tons of stainless. *U.S. Statistical Abstract* 1978. Measured against these aggregates, the steel inputs for the replacement project are infinitesimal. Moreover, these inputs taken by themselves are highly unlikely to produce any significant effect upon steel supply.

Second, the petitioners claim that the use of 3,000 cubic yards of concrete for the containment structure constitutes a significant environmental effect. In light of the fact that over 276 million cubic yards of concrete were used in construction in the United States in 1978, this small input cannot be termed significant. Portland Cement Association, *Cement Industry Facts*, 1978.

Third, the petitioners claim that the use of coal and oil for the replacement power that is needed while the Surry units are off-line constitutes a significant environmental effect. The petitioners neglect to consider the fact that the result of the repair effort will be a reduction in VEPCO's need for oil and coal to generate power. If VEPCO had chosen to allow the corrosion process in the generators to continue unabated, further derating would have occurred and thus VEPCO would have been required to use coal and oil to generate the replacement power.⁹ EIA at 14. Thus, the environmental effects attributable to the use of oil and coal for replacement power during the repair effort are considerably mitigated by the effect that the repair project will have in reducing requirements in the future.

In addition, the effect of using coal and oil for replacement power is also counterbalanced in the short-run by the conservation of uranium during this period. Thus, the energy-producing capability of our resources will not be reduced during the repair project.

6. NRC Regulations Do Not Require An EIS Here

Finally, the petitioners cite two provisions in the NRC regulations which they claim demonstrate that the Staff should have submitted an EIS for the Surry steam generator repair effort. At the outset it must be emphasized that these provisions do not require that an EIS be submitted but state that the decision as to whether an EIS should be written must be based on the facts of the individual case. 10 CFR 51.5(b) (1979). Nevertheless, assuming arguendo that these regulations could theoretically mandate the submission of an EIA, they would not require an EIS to be written in this particular case. First,

⁹ While the Staff could not calculate the specific quantities of coal and oil that would be required for replacement power, the Staff was able to formulate a rough estimate that the cost of replacement power would be \$360 million over ten years. This estimate is based upon the assumptions that (1) derating would continue over this period at an annual rate of 3% and (2) coal and oil would be utilized in roughly equal quantities. This latter assumption is quite crude given the many variables which will ultimately determine the input mix for replacement power.

petitioners' claim as to the force of 10 CFR 51.5(b)(2) is largely based on the erroneous assumption that the effluents produced by the demineralizer will be significant.¹⁰ As is shown below, the effluents produced by the demineralizer are insignificant in relation to the effluents produced at Surry during normal operations and insignificant when considered by themselves in absolute terms. Similarly, the petitioners' reliance on 10 CFR 51.5(b)(7) is based on a mistaken view of the facts.¹¹ As is demonstrated below, the generator repair effort does not involve a dismantling or decommissioning of Surry Units 1 and 2. Hence, Section 51.5(b)(7) does not apply to the steam generator repair operation

B. The Cumulative Effects of the NRC Approvals of Steam Generator Repair Projects Do Not Require Preparation of a Programmatic Environmental Impact Statement

The petitioners assert that NRC breached its duties under NEPA by failing to analyze the proposed license amendments for the Surry plant in a programmatic environmental impact statement. This claim is without merit.

First, the language of Section 102(2)(c) requires an impact statement only in response to a proposed action. *Kleppe v. Sierra Club, supra*. For example, in the context of this question, such an action would take the form of a proposal for a program involving generator repairs at various plants with the individual components of the program having a combined purpose. No such program has been proposed or contemplated by the Staff. This results from the fact that repair operation proposals are initiated by the individual plant operators and thus NRC has no direct role in determining if and/or when such a proposal would be made.

It is conceded, however, that there are exceptions to this basic construction of Section 102(2)(c). First, courts have expressed concern over the cumulative impact of disparate federal actions. Thus, in a recent decision, the Supreme Court stated that when separate proposals for similar actions will have a cumulative or synergistic environmental impact upon a region, their environmental consequences must be considered together. *Kleppe v. Sierra Club, supra* at 410.

It should be noted that the Court restricted this principle to pending federal actions. Federal actions which are merely possible are to be considered only when they, in fact, become proposals at which time their effect upon existing environmental conditions (which presumably have been shaped by the previous federal projects) can be accurately measured. *Kleppe v. Sierra Club, supra* at 410, n. 20.

¹⁰ Section 51.5(b)(2) states that the preparation of an EIS *may* be required for: "[The] [i]ssuance of an amendment to a construction permit or full power or design capacity operating license for nuclear power reactor . . . that would authorize a significant change in the types or a significant increase in the amounts of effluents or a significant increase in the authorized power level."

¹¹ Section 51.5(b)(7) states that the preparation of an EIS *may* be required for "[I]icense amendments or orders authorizing the dismantling or decommissioning of nuclear power reactors. . . ."

At the time the Staff prepared the EIA for the Surry repair operation, the only other proposed repair projects were for the Turkey Point plant in Florida and the Palisades plant in Michigan, both several hundred miles away from Surry. In view of the extremely limited off-site effects to be produced by either of these operations, the Staff does not believe that the projects would have produced the radioactive synergy contemplated by the Court.¹²

There is also authority for the proposition that programmatic impact statements are required for actions whose completion will tend to compel the proposal of other similar actions. *Scientists' Institute for Public Information, Inc. (SIPI) v. AEC*, 481 F.2d 1979 at 1989 (1973), but cf. *Kleppe v. Sierra Club, supra*. This "bandwagon effect" was found to exist in the case of a project involving the development of a breeder reactor by the Atomic Energy Commission as it was felt that the commitment of resources to the development of a technology would tend to foreclose options as to that technology in the future. *SIPI v. AEC, supra* at 490. The Surry project, on the

¹² While the petitioner's discussion of cumulative impact is quite vague, the Staff has adopted the interpretation that "cumulative impact" refers to a supposed synergistic effect between the off-site environmental effect produced by the individual steam generator repair efforts. This was the definition employed by the Supreme Court in *Kleppe*. The Staff acknowledges, however, that there are other interpretations of "cumulative impact" which are arguably applicable to the environmental evaluation of the Surry steam generator repair effort. For example, it is possible to make the argument that the radiation exposure experienced at Surry during 1976 and 1977 when the generators were being inspected and plugged with the approval of the NRC should be included in a cumulative environmental evaluation of the repair project. Such an approach would be inappropriate, however, as the inspection and plugging decisions are past actions which are unrelated to the federal action being presently analyzed, the steam generator repair. Second, if one accepts the assumption that some of the workers participating at Surry will also be employed in other steam generator repair efforts, then it is possible to argue that individual NRC decisions on steam generator repair would produce a significant cumulative effect in relation to these workers. In response to such an argument, it should be noted that this assumption as to the future employment of these workers has not been verified. Moreover, even if this assumption turned out to be valid, it would be improper to term the cumulative impact on these workers significant as the changes in health risk would have to be measured against a much greater, nationwide background of health risk. *Hanly v. Kleindeinst, supra* at 831.

other hand, does not involve a decision with such wide ramifications. Rather, it results from an agency determination made on the basis of the facts of the particular case.¹³

The petitioners cite the Council on Environmental Quality's regulations as requiring a programmatic impact statement for the Surry operation. Such an interpretation as noted above neglects the facts that: (1) the guidelines promulgated prior to 1979 are merely recommendations and thus 40 CFR Section 1500 6(d) (1978) is not binding on the NRC; and (2) notwithstanding the dispute as to the binding effect on the NRC of the 1979 CEQ regulations, these regulations did not become effective until July 30, 1979, and thus do not apply retrospectively to the preparation of the EIA. 40 CFR 1506.12 (1979).

Nevertheless, even if the 1979 CEQ regulations were binding on the Staff at the time it prepared the Surry EIA, its decision not to prepare a programmatic environmental impact statement was not in violation of these regulations. First, as stated above, the Staff's decision to approve the Surry steam generator repair effort was a decision that was independent of all prior and future decisions with respect to generator repairs at other plants. Second, as emphasized above, the Surry plant is sufficiently distant from other plants for which steam generator repair projects have been proposed to guarantee that the limited environmental effects produced by such projects will not interact to create a significant cumulative environmental impact. Last, each steam generator repair operation is a distinct entity involving environmental effects varying greatly from site to site. For example, the occupational exposure estimates for the Surry and Turkey Point repair efforts differ by more than 700 man-rems per unit. This difference represents more than 50 percent of total occupational exposure at Turkey Point. EIA for Turkey Point Steam Generator Repair, Units 3 and 4, at 4-2; EIA for Surry Steam Generator Repair, Units 1 and 2, at 6. Individual, rather than programmatic, environmental evaluations are more appropriate for government actions with such distinguishable environmental effects. Thus, with respect to the 1979

¹³ While the NRC is not engaging in a steam generator repair program, it has been involved in research on the problem of steam generator deterioration. The Staff is compiling task action reports on the problem of steam generator denting. These reports deal with various facets of the steam generator problem including water chemistry control, corrosion and in-service testing. The discussion of steam generator repair is limited to a mention of the operations currently proceeding at Surry and Turkey Point. In compiling these reports, the Staff will include inputs supplied by the Electric Power Research Institute. This organization, funded by utility companies throughout the United States, has been conducting meetings on the steam generator problem. Two NRC staff members are participating on the Institute's Corrosion Committee. Neither of them has been involved in any way with the development of a steam generator repair program. In addition, neither of them is aware of any such program being considered by the Institute. Neither the Staff's compilation of Task Action reports nor the Staff's participation at the EPRI conferences involve an NRC effort to develop a steam generator repair technology that would effectively commit the NRC to a program of steam generator repair operations similar to those occurring or proposed for Surry and Turkey Point. Thus, these activities did not require the compilation of a programmatic environmental impact statement. The NRC is attempting to arrange through DOE for one steam generator lower assembly to be shipped to Hanford for examination and research. (Sec. n. 8, *supra*.)

CEQ regulations, the Staff correctly limited the scope of its evaluation of the environmental effects produced by the Surry steam generator repair effort. The programmatic EIS requirement is not triggered simply by a belief that at some time in the future, in some place, federal actions similar to one under consideration may occur. Rather, the programmatic EIS requirement is limited by consideration of the facts concerning (1) and the relationship between the environmental impacts of individual projects and (2) the probability that a single action will force the agency to undertake similar actions in the future. See *Kleppe v. Sierra Club, supra*. In this way, the programmatic statement serves to keep an agency aware of the environmental impacts produced by actions it is proposing to take or is committing itself to take.

The petitioners also raised the issue of the scope of the Staff's analysis with respect to the question of whether an EIS or an EIA should have been prepared for the Surry steam generator repair effort. The petitioners asserted that the significance of the environmental impact produced by the repair effort at Surry should be assessed by considering the cumulative impacts produced by all steam generator repair efforts. The petitioners cited 40 CFR 1508.27(b)(7) in support of this position.

In response to this argument, it should first be noted that the supportive regulation cited by the petitioners is another of the 1979 CEQ regulations which was not binding on the Staff at the time it prepared the EIA. 40 CFR 1506.12 (1979). Nonetheless, the Staff acted consistently with section 1508.27(b)(7) in limiting its analysis to the environmental impacts produced by the repair effort at Surry. As is the case with the analysis of the need for the preparation of a programmatic environmental impact statement, the key factor in determining the scope of the environmental analysis for the Surry repair effort is the existence of a significant *cumulative* (emphasis supplied) environmental effect resulting from separate federal actions. Such a significant cumulative impact does not exist, *supra* at 27. Thus, the Staff acted properly in restricting its analysis, as to the significance of the environmental effect of the Surry steam generator repair efforts, to the effects produced at Surry alone.

C. The Environmental Impact Appraisal Prepared by the Staff is Legally Adequate

The petitioners claim that the environmental impact appraisal (EIA) prepared by the NRC Staff is legally inadequate. They base their claim on various alleged shortcomings in the Staff's analysis. Each of their objections is either based on a misunderstanding of the principles of NEPA or is at variance with what is actually contained in the EIA.

1. The Failure To Discuss the Demineralizer System is Immaterial

First, the absence of a discussion of the effluents produced by the demineralizer system is not a material flaw in the EIA. Although approval of the steam generator repair could be interpreted to include approval of the demineralizer system, the environmental effects of that system are so small as to be insignificant. Thus the failure to discuss these effects is of no legal importance. See *NRDC v. Morton*, 458 F.2d 827, (D.C. Cir. 1972).

The principal contaminants in waste streams resulting from the periodic regeneration of resins in the demineralizers will be sodium sulfate and ammonium sulfate with other ions present in trace amounts (see Table 1). The total waste volume will be approximately 25,600 gallons per regeneration, with an estimated average of one regeneration per day for the station.¹⁴ Waste water treatment systems will control the pH and total suspended solids (TSS) so that releases to the station discharge canal will have a pH within the range of 6.0 to 9.0 and TSS concentrations of 30 ppm average and 100 ppm max. (These are the values recommended by EPA in their Effluent Guidelines.)¹⁵ The maximum anticipated flow rate during discharge from this source is 400 gpm.

The waste will be discharged to the discharge canal which has 1,680,000 gpm of circulating water flow. The circulating water flow will provide for an approximately 4,650-fold dilution prior to the entry of the discharge into the river. At the river, due to the high velocity discharge and river water flow, additional mixing will take place. Using the highest concentration expected during either normal polisher operation or during condenser inleakage operation and the dilution factor of 4,650, the maximum incremental increase to the James River (prior to further dilution in the river) due to operation of the demineralizer system is:

TABLE 1¹⁶
DEMINERALIZER EFFLUENTS

The following waste products can be expected to be discharged per regeneration of a vessel. Each unit can be expected to have 125-200 regenerations per year depending on the pH that the condensate system is run at and the amount of condenser inleakage. (Total of 250-400 regenerations for the station per year.)

Total waste volume is approximately 25,600 gallons per regeneration.

(1) During normal Polisher Operation (H-OH operation, to the ammonia break); the waste volume consists of:

¹⁴ Steam Generator Repair Program, Surry Power Station, Unit Nos. 1 and 2, VEPCO.

¹⁵ Effluent Guidelines and Standards for Steam Electric Power Generating Point Source Category, 40 CFR 423.

¹⁶ See n. 14, *supra*.

pH = 6.0 to 9.0
 $(\text{NH}_4)_2\text{SO}_4 = 1800 \text{ ppm}$
 $\text{Na}_2\text{SO}_4 = 2540 \text{ ppm}$
 30 ppm average 100 ppm max of
 Total Suspended Solids (TSS)

(2) During condenser inleakage operation, the waste volume consists of:

pH = 6.0 to 9.0
 $(\text{NH}_4)_2\text{SO}_4 = 900 \text{ ppm}$
 $\text{Na}_2\text{SO}_4 = 2530 \text{ ppm}$
 $\text{NaCl} = 800 \text{ ppm}$
 30 ppm avg - 100 ppm max of TSS

(3) In addition to items 1 and 2, the following chemicals may be evident:

10 ppm HCO_3^-
 75 ppm SO_4^-
 $<1 \text{ ppm NO}_3^-$
 2 ppm Br-
 $<1 \text{ ppm F}^-$
 $<10 \text{ ppm Ca}^+$
 40 ppm Mg^+
 15 ppm K^+

$$(\text{NH}_4)_2\text{SO}_4 = \frac{1800}{4650} = .39 \text{ ppm}$$

$$\text{Na}_2\text{SO}_4 = \frac{2540}{4650} = .55 \text{ ppm}$$

$$\text{NaCl} = \frac{100}{4650} = .17 \text{ ppm}$$

$$\text{TSS} = \frac{100}{4650} = .02 \text{ ppm}$$

Comparison of the above values with reported values of toxicity concentration for those compounds demonstrates the insignificance of the discharge concentrations. For a number of fish species, the acute toxicity concentrations of $(\text{NH}_4)_2\text{SO}_4$ ranges from 260 to 500 ppm and, for various aquatic organisms (fish, worms and crustaceans), the acute toxicity concentrations range from 1900 to 16,000 ppm.^{17,18,19} According to the FES, organisms in the vicinity of the plant are exposed to NaCl concentrations in excess of 6900 ppm. Also, according to the FES, the TSS range from 15 to 20 Jackson Candle Units (JCU) which roughly correlates to 700 to 1200 ppm.

¹⁷ McKee, J. E. and H. W. Wolf. 1963. *Water Quality Criteria*, 2nd Ed. Publication No. 3-A, The Resources Agency of California, State Water Resources Control Board, p. 548.

¹⁸ *Quality Criteria for Water*. EPA-440/9-76-073. U.S. Environmental Protection Agency, Washington, D.C.

¹⁹ *Toxicity of Power Plant Chemicals to Aquatic Life*, WASH-1249, June 1973, USAEC.

Thus, it is seen that the discharge concentrations are insignificant even prior to dilution in the James River.

The incremental increase in concentration of other ions present in the waste water in trace amounts will be undetectable after mixing with the circulating water in the discharge canal. Since the pH will be maintained within the 6.0 to 9.0 range (which is the river ambient pH) before release to the discharge canal, operation of the new demineralizer system will have no effect on the pH of the river. Because of the turbidity in the James River estuary near Surry, addition of an incremental .02 ppm TSS will likewise have no effect.

Although the Virginia State Water Pollution Control Board has not issued an amendment to the NPDES permit, it is my understanding that, based on the Staff's discussion with the Board, the Board will require the licensee to monitor and limit pH to the 6.0 to 9.0 range and TSS to 30 ppm, average, 100 ppm, maximum, prior to release to the discharge canal.

Ambient river concentrations of ionic species discharged in the demineralizer wastes are not near threshold levels of toxicity for aquatic biota. Examination of the Final Environmental Statement (FES) issued for the Surry Station in June 1972 and the most recent monitoring data from surveys conducted in the vicinity of the plant do not indicate the presence of water quality related stresses. The concentrations discussed above are not significantly different from those described in the FES and would not be expected to result in any adverse impacts to receiving water biota.

On the basis of the above finding I conclude that omission of the analysis is not a material flaw in the EIA.

The petitioners' claim that no discussion of the economic impact of the project is contained in the EIA is also puzzling as section 4.2 of the report is devoted specifically to that issue. EIA at 14, 15. Moreover, the Staff paid particular attention to the question of economic cost in its discussion of the alternatives to the proposed repair operation. In fact, this analysis demonstrated that the proposed program was the least costly of the options available to VEPCO. EIA at 16, 17.

2. The Staff Considered and Discussed Alternatives

It is difficult to understand the petitioners' claim that the Staff has failed to consider the environmental impacts of the various alternatives to the replacement operation. The Staff presented considerable discussion on the question of the relative environmental impacts of the various options in its EIA. EIA at 17, 18. First, it compared the environmental effects of the basic options of inspection and plugging, whole unit replacement, and repair through partial generator replacement. Second, within the chosen option of repair, the Staff analyzed the environmental effects of such suboptions as decontamination and replacement of the entire generator and shutdown the replacement. Finally, the Staff also considered the relative environmental impacts of the various alternatives for storage or disposal of the steam generator assemblies that are to be replaced. EIA at 19. In light of the extensive discussion of the relative environmental impacts of the alternatives

to the repair operation, it cannot be maintained that the Staff neglected this issue.

The petitioners claim that the Staff should have specified which energy sources VEPCO would draw upon to generate the replacement power required during the shutdown of the Surry units but this is not required by NEPA. See: *Carolina Environmental Study Group v. U.S.*, 510 F.2d 796 (D.C. Cir. 1975). First, as was shown above, the net environmental effects resulting from the use of auxiliary power sources are insignificant and thus consideration of them was not crucial. *Supra* p. 635, et seq. Further, such an analysis is impossible. The information required for a discussion was neither available to NRC at the time the EIA was compiled nor could it have been. The specific energy sources and the quantities required from each for the replacement power were and are still contingent upon several variables including the status of the auxiliary power plants and the availability and cost of sources themselves. Any projection as to these specifics would have been a mere guess. It must be recalled that the NEPA was not designed to require agencies to indulge in crystal ball inquiries. *NRDC v. Morton, supra* at 837. Such exercises are hardly conducive to informed decisionmaking, but rather leave the agency wallowing in a sea of uncertainty. Such a result was not contemplated by NEPA.

3. The Staff Considered Non-Radiological Impacts

Finally, the petitioners assert that the Staff's discussion of non-radiological impacts was too brief. Courts have established the principle that brevity, in and of itself, is not a fatal defect when evaluating an EIA. *Life of the Land v. Brinegar*, 485 F.2d 460 (9th Cir. 1973). An agency may make findings in conclusionary terms so long as there exists documentation to support its judgment. *Trout Unlimited v. Morton*, 509 F.2d 1276 (9th Cir. 1974). Such a justificatory document is found in the form of the original FES prepared for the construction of the Surry plant. It was from the data and findings made in the FES that the Staff was able to extrapolate and evaluate the dimensions of the non-radiological effects of the repair project. More importantly, this document provides a means by which the Staff's judgment may be evaluated. This is all that is required under NEPA.

The petitioners correctly state that in reviewing the adequacy of an EIA, the Court's main concern has been that the agency has taken a "hard look" at the situation while identifying all relevant environmental concerns. *Hiatt Grain and Feed v. Bergland*, 446 F. Supp. 457 (1978). Moreover, the examination of an EIA is subject to a "rule of reason." *NRDC v. Morton, supra* at 834. The EIA prepared by the Staff on the Surry steam generator repair project meets these standards. It contains a discussion of all of the reasonably foreseeable environmental effects produced by the project. Moreover, the appraisal contains a detailed analysis of the key environmental concerns linked to the project, the on and off-site radiation exposure. In addition, it includes references to the more detailed literature on which the Staff based its position. Most importantly, the EIA clearly complies with the

NRC regulation relating to environmental impact appraisals, as it contains a description of the proposed action, a summary description of probable impacts on the environment, and the Staff's basis for concluding that an EIS is not necessary. 10 CFR 51.7(b)(1979).

In reality, the EIA prepared by the Staff is neither the latticework which the petitioners claim it to be nor the great stone edifice which they wish it to be. Rather, it is a highly functional document which clearly identifies numerous environmental ramifications of the repair project and which presents, in reasonable detail, the Staff's argument for determining that an impact statement was not required for the project. In addition, the EIA contained a consideration of alternatives as required by NEPA. Such a report is clearly adequate as an environmental impact appraisal.

D. The Staff Approved the Surry Steam Generator Repair With the Full Consideration of Alternatives Required by NEPA.

The Staff takes issue with the petitioners' position that sections 102(2)(E) and 102(2)(C) of NEPA are to be regarded as equivalent in their respective dictates with respect to the consideration of alternatives. Section 102(2)(E) in calling for a consideration of alternatives for all Federal actions calls for a less intensive and less thorough consideration of alternatives than must be performed under section 102(2)(C) for "major Federal actions significantly affecting the human environment." See *Trinity Episcopal School Corp. v. Harris*, 445 F. Supp. 204 (S.D.N.Y. 1978); reversed on other grounds, 590 F.2d 204 (2nd Cir. 1970). [It should be noted that this case was decided before section 102(2)(D) was changed to 102(2)(E).]

Petitioners' seem to say that the same analysis is required for proposed Federal actions which are minor or which have insignificant environmental effect as for major actions with significant effect. Thus, the distinction between actions in the 102(2)(C) category and other actions, for all practical purposes, leaves clause (C) as an appendage rather than, as it is more commonly regarded, the most crucial element of section 102(2). This reading is contrary to the plain structure and intent of section 102 and it should be rejected. *Trinity Episcopal School Corp. v. Harris supra* at 218. Rather, as indicated in *NRDC v. Morton, supra*, there exists a direct relationship between the magnitude of the environmental effects produced by an action and the intensiveness with which an agency must examine alternatives to that act under section 102(2).²⁰

²⁰ It should be noted that the Appeal Board has at least implicitly given section 102(2)(E) a far more literal reading in a recent decision. *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531 (March 21, 1979). It appears that the Appeal Board interprets section 102(2)(E) to refer, exclusively, to conflicts over available resources as inputs for government projects. The Second Circuit has adopted a broader interpretation according to which a "conflict over available resources" exists when there are planning options available to an agency which involve different impacts upon the environment. *Trinity Episcopal School Corp. v. Rommey*, 523 F.2d 88 (2d. Cir. 1975).

This is not to say that the Staff does not have a statutory duty to consider alternatives to the proposed repair project. NEPA, section 102(2)(E), 42 U.S.C. 4332(2)(E) (1978). The Staff, in fact, devoted a section of the report to a discussion of alternatives to the repair operation and their respective environmental and economic costs. The Staff's discussion does contain a reasonably detailed, quantified comparison of the costs and benefits of the relevant options confronting VEPCO and the Staff. When considered against the backdrop of an agency decision of limited environmental significance the EIA's consideration of alternatives is more than adequate as it evidences that the Staff has considered alternatives to the repair project and informed outsiders as to how it chose among them. *Calvert Cliffs Coordinating Council v. AEC*. *Supra* at 1123. Indeed, the NRC Staff's discussion of alternatives, under this test, would have been sufficient even if an EIS had been required.

The petitioners, in fact, do not dispute the fact that the Staff included serious discussion of alternatives in its EIA. Rather, the petitioners claim that the Staff's failure to consider two particular alternatives, "retubing" and "short-term delay," render the EIA inadequate. The Staff acted in accordance with the principles of NEPA in not considering these alternatives. An EIA is evaluated with reference to the situation at the time the report is submitted. The requirements of NEPA are not applied retroactively. *EDF v. Corps of Engineers*, 492 F.2d 1123, 1129 (5th Cir. 1974). At the time the EIA was submitted (January 1979) retubing was not a serious alternative. The Westinghouse report on new retubing technology had not been published. The Staff could not make a real assessment of the costs and benefits of retubing and in fact expressly refrained from attempting one. It consciously neither adopted nor rejected the assessment of retubing promulgated by VEPCO. Due to the dearth of information on the retubing technique, it was not at the time of decision a meaningful alternative. To have considered this unestablished technique at the time would have been to indulge in the crystal ball predictions so inimical to the orderly decision making envisioned in NEPA. See *NRDC v. Morton*, *supra* at 837.

Thus, realistically speaking, the only option available to the NRC in relation to retubing was to refrain from any action and continue to have the facility operate in a degraded condition until Westinghouse released its report on the new retubing technique. As discussed below, the Staff was justified in omitting the option of this delay from the EIA as it offered no advantages to the immediate undertaking of the repair operation. Alternatives which would result in similar or greater harm need not be discussed. *Sierra Club v. Morton*, 510 F.2d 813, 825 (5th Cir., 1978).

Applying this principle of looking at realistic alternatives to the option of short-term delay, the Staff had to take note of two possible contingencies. First, it was possible that after waiting for the issuance of the report and making its evaluation, the Staff would reject the new retubing technique and allow the proposed operation to proceed. Since it is projected that the Staff will not complete its review of the Westinghouse report until sometime next year, it can be estimated that this contingency would have involved, at a

minimum, a one-year delay in the repair operation-measuring from the time at which the EIA was issued. During this period workers at the plant would have experienced approximately 1000 to 1500 man-rem of radiation exposure from the inspection and plugging operations alone.²¹ In addition, VEPCO would have had to spend \$11 million for replacement power, assuming derating at an annual rate of 3% plus an added about \$25 million for replacement power, assuming 1 month downtime per plant per year. These costs would be *additional* to the calculated costs related to the repair operation which would proceed after the rejection of the Westinghouse plan. Thus, the option of a short-term delay followed by the repair operation would be at least as, if not more harmful than, the option of going ahead with the repair operation straightaway.

The second possible contingency consists of a scenario in which the Staff would approve the retubing technique. In such a situation, the new technology would not be instantly implemented. Rather, VEPCO would have to formulate a plan which adapted the new technique to the Surry plant and the Staff, in turn, would have to approve the VEPCO plan. It has been estimated that this process would be completed in a *minimum* of two years. EIA for Turkey Point Plant, Units 3 and 4 (1979), at 5-3. During this time period, workers at the plant would experience a radiation dose of between 2000 and 3000 man-rem while working in the inspection and plugging operation. The costs of replacement power during this period would be about \$30 million, assuming an annual derating rate of 3%, and about an additional \$50 million for replacement power assuming a 1-month downtime per plant per year. Moreover, as retubing remains an untried technology, there were and still are doubts as to how successful its implementation will be. [This uncertainty is very important to an appraisal of this option, as VEPCO would have to respond to a problem during the retubing process with a manual operation involving high occupational exposure.] This cost, discounted by a probability ratio, had to be considered in evaluating this option. Finally, the advantages posed by retubing are uncertain. First, the retubing operation and the steam generator repair contemplated for Surry would involve basically the same procedures and, hence, approximately the same radiation exposure for post-shutdown preparation and post-installation start-up. (These two phases entail approximately 800 to 1000 man-rem exposure per unit or roughly one half the exposure projected for the total repair effort.) The major operational differences between the two techniques are found in the generator disassembly and generator reassembly phases of the operation. It is difficult to predict, however, how these differences affect net occupational exposure as the contrasting elements of these techniques involve both relative increases and decreases in exposure. For example, while the reactor coolant piping to the steam generator would not be cut and thus would result in less exposure to the workers in this aspect of the retubing operation than in the repair effort, the

²¹ This estimate is based on recorded exposures at Surry which were attributed to inspection and plugging. See EIA at 7.

retubing operation would entail exposures due to cutting of all tubes prior to their removal operation. That exposure would not be experienced in the repair effort. In light of the certain economic and environmental costs attributable to delay, and the uncertainties involved in assessing the costs and benefits, in radiological terms, of the retubing technique, the Staff reasonably concluded that "short-term delay" was a sub-optimal, if not impractical, alternative and thus deemed it inappropriate to consider the delay option in detail.

The third flaw cited by the petitioners in the consideration of alternatives is the discrepancy between the estimates of the cost of on-site storage as estimated by VEPCO and the Staff. The discrepancy arises from the Staff's failure to include in its estimate the cost of removing the generator lower assemblies (approximately \$9,000,000). This error, however, was made in the estimate for each disposal method. Thus, the Staff's conclusion that on-site storage is the least costly disposal alternative is not affected—the error is harmless.

Section 102(2)(E) of NEPA requires that agencies consider numerous options to insure that they choose the most socially beneficial. The Staff followed this dictate by considering those options which were competitive with the proposed plan and comparing them with respect to the environmental and economic costs they were expected to produce. In this exercise, it properly excluded options which were likely to be at least harmful as the proposed plan. Thus, its decision not to consider retubing was motivated by a concern that the delays and uncertainties related to retubing rendered that option unacceptable in the context of the deteriorating situation at Surry and not by a desire to rush the project through. This good faith decision is in accord with the basic objectives of NEPA. *Calvert Cliffs Coordinating Council v. AEC, supra* at 1123.

2. The Staff Acted Consistently With the Federal Water Pollution Control Act In Issuing Amendment Nos. 46 and 47 to VEPCO's Operating Licenses for the Surry Station

The petitioners assert that the Staff violated section 401 of the Federal Water Pollution Control Act, 33 U.S.C. Section 1341 (1978), by issuing license amendments nos. 46 and 47 to VEPCO's operating licenses for the Surry station without first obtaining certification from the Commonwealth of Virginia that effluent discharges from the new demineralizer system will not exceed applicable state limitations. The Staff contends that this allegation is groundless.

First, section 401²² does not require the Staff to obtain certification from

²² Section 401 (A)(1) provides that:

"[a]ny applicant for a federal license or permit to conduct any activity, including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates. . . . No license or permit shall be granted until the certification required by this subsection has been obtained."

the Commonwealth of Virginia for an *amendment* to an operating license. Section 401 is construed by the staff to refer exclusively to operating licenses and construction permits. The Staff believes that this interpretation of section 401 should be accepted as it is the agency's operational interpretation of a statute. Such interpretations have been afforded great weight by reviewing bodies. See *PRDC v. Electrical Workers*, 367 U.S. 396, 408 (1961).

The effluent discharges from the new demineralizer system have been evaluated by the Staff and determined to be insignificant. *Supra* at pp.639-640.

Moreover, although not required to do so under the Staff's interpretation of section 401,²³ the Staff did notify the Commonwealth of Virginia of the Staff's consideration of license amendments for Surry. The Commonwealth has not registered any objection with the Staff to the effect that the effluents produced by the demineralizer system are a violation of water pollution laws. Thus, I believe that the staff acted consistently with the Federal Water Pollution Control Act in its issuance of the license amendments authorizing the Surry steam generator repair.

3. The Issuance of the Operating License Amendments Was Not Arbitrary and Capricious and Did Not Violate the Administrative Procedure Act Nor the Atomic Energy Act

A. The Statutory Standards

The petitioners imply that by rejecting or failing to investigate alternatives to steam generator repair and by failing to collect facts needed to support its decision the Commission has violated statutory standards for exercising its discretion. I believe that such a claim is groundless. The Staff's consideration of alternatives has been discussed above. *Supra* at 640- 641 and 642-645. Moreover, the Staff did not merely accept VEPCO's representations. Where necessary the Staff made independent evaluations. For example, the Staff evaluated and compared estimates of worker doses made by both VEPCO and Battelle Pacific Northwest Laboratories and made an independent judgment. See discussion *infra* at 649. The Staff also made an independent estimate of the cost of on-site storage of the generator lower assemblies. See discussion *supra* at 645.

²³ Section 401(A)(3) states:

"The certification obtained pursuant to paragraph (1) of this subsection with respect to the construction of any facility shall fulfill the requirements of this subsection with respect to certification in connection with any other Federal license or permit required for the operation of such facility unless, after notice to the certifying State, agency, or Administrator, as the case may be, which shall be given by the Federal agency to whom application is made for such operating license or permit, the State, or if appropriate, the interstate agency or the Administrator, notifies such agency within sixty days after receipt of such notice that there is no longer reasonable assurance that there will be compliance with the applicable provisions of sections 301, 302, 303, 306, and 307 of this Act [33 USCS Sections 1311, 1312, 1313, 1316, 1317] because of changes since the construction license or permit certification was issued in (A) the construction or operation of the facility, (B) the characteristics of the waters into which such discharge is made, (C) the water quality criteria applicable to such waters or (D) applicable effluent limitations or other requirements. . . ."

B. The Decision to Approve the Surry Project and the Choice of the Repair Alternative Over the Retubing Alternative Was Not Based on Invalid Analysis of Occupational Radiation Exposures.

The petitioners claim that the Staff's reliance on the licensee's prediction of 4140 man-rem of total occupational exposure is extremely unconservative, and that the Battelle²⁴ study which examined steam generator repair "generically," was rejected. These claims are not true.

The Battelle study was a basis used by the Staff to reach an independent conclusion regarding occupational radiation exposure. The work done by Battelle was not rejected but was considered to be an upper bound estimate. Both the SER and EIA contain an explanation of why the Battelle doses are considered "upper bound estimates." Exposure rates were based on information from several sources including data from measurements made at several operating PWRs including the Surry Units. Battelle usually selected exposure rate values on the high end of the range of values measured at the several plants. The estimates of occupational exposures were intended to be conservative and represent upper bound values. The estimates were presented as a range of values. The upper value was estimated assuming credit for shielding by raising the steam-generator water level, remote tooling and distance where applicable. It is the lower value which is used to compare with the licensee's estimates. The licensee's estimates are generally lower than Battelle's because VEPCO used actual plant data and took credit for temporary shielding (such as lead blankets) and local decontamination in addition to the measures taken by Battelle. SER at 10 and EIA at 5, 6, and 7.

The Battelle doses were not summarily rejected. These doses provided a basis for the Staff judgment that VEPCO was in conformance with ALARA objectives. In addition, experience at Surry as reported in its Progress Reports (May 8, 1979, July 2, 1979 and August 31, 1979) support the Staff's position. Dose reduction techniques have provided significant dose savings over what would be expected without them.

The temporary shielding used by Battelle was that provided by the steam generator water level. Battelle did not take credit for additional shielding as did VEPCO. Local decontamination has been used by VEPCO and consist of washing areas of the containment to remove loose contamination. Both the EIA at 6 and SER at 10 state that steam generator water level control and remote tooling is considered in the Battelle lower estimate. The Staff considered all factors considered by Battelle and VEPCO and based its conclusion on these factors. The experience (radiation exposure 9% below estimate) at Surry has further supported the Staff's conclusions that VEPCO provided a more reasonable estimate based on its specific plant data and the dose reduction techniques it would use (VEPCO Progress Report dated August 31, 1979).

²⁴ Battelle Pacific Northwest Laboratories, *Radiological Assessment of Steam Generator Removal and Replacement*, (September 1978).

The dose rates used by Battelle were based on measurements provided in NUREG-0395 "Technology, Safety, and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station": (Draft Working Paper) and presented in Table 2 of NUREG/CR-0199. Table 2 of NUREG/CR-0199 shows the exposure rates varying by as much as a factor of 20 at some points. Thus, the use of lower dose rates as measured at Surry provides a good estimate of the actual man-rem expected.

The reasons for disparities in the four "sub-activities" questioned by the petitioners have been elaborated in the SER at 11, 12, 13, 14, and 15 and are: (1) the use of local decontamination and temporary shielding by VEPCO greatly reduces dose rates in the area in question, (2) the use of remote tooling, (3) the steam generator wrapper cut from outside the steam generator, not inside as was assumed by Battelle and (4) reactor coolant pipe will be decontaminated prior to reinstallation. All of these serve to reduce the dose rates to the workers and, thus, the total exposure.

The estimates presented in the repair program by VEPCO assumed an average field reduction of a factor of 5 compared to only a factor of 2 used by Battelle. However, the dose rates assumed for the activity vary by a factor of 25. This is due to (1) the lower initial dose levels, (2) the effect of temporary shielding and (3) the assumed effectiveness of the decontamination. The actual decontamination of reactor coolant pipe has resulted in a significant reduction in dose rates from the removed coolant pipes. VEPCO (Progress Report 2, July 2, 1979) has found that an average dose reduction on contact of 1000 has been achieved by the decontamination process.

The Staff did consider the Battelle estimates and compared them to VEPCO's. Battelle provided a generic estimate as an upper bound value. It was recognized by the Staff that VEPCO is more knowledgeable of its own plant than would be an independent contractor. The SER and EIA were prepared after careful scrutiny of both VEPCO's and Battelle's estimates. The decision to use the licensee's estimate was made after careful consideration was given to all aspects. The experience to date at Surry has proven the Staff correct in its decision.

The retubing option was not reviewed in detail for Surry and was not considered as an alternative. *Supra* at 645.

Based on the reasons discussed on page 39, it was determined that retubing was not a clearly acceptable alternative at the time of the EIA. Even if the retubing option was an alternative it is not clear that it would be a preferable alternative. Therefore, the staff's approval of a clearly acceptable solution (repair) to the tube degradation problem is justified.

C. The Staff's Calculation of the Economic Cost of the Project Was Not Misleading and Invalid

The petitioners cite a discrepancy between the estimates of the cost of on-site storage as estimated by VEPCO and the Staff. As discussed previously, *supra* at 645, the discrepancy between \$1 million and \$10 million arises from the Staff's failure to include in its estimate the cost of removing the lower

assemblies. However, this error does not change the Staff's conclusions in the EIA.

The petitioners question the Staff's omission of the costs estimates for the construction of the two new demineralizer systems which were projected to cost \$27 million. This \$27 million, however, includes \$10 million for the condenser tubes.

It is true that the cost of the demineralizer systems was not included in the Staff's estimates because the Staff did not consider them to be part of the steam generator repair project. The licensee could have installed the demineralizers without the Staff's review by performing a safety review in accordance with 10 CFR 50.59 and finding that the installation involved neither a change in the Technical Specifications for the facility nor an unreview safety question. (See discussion *infra* at 651). The Staff believes that the installation involved neither.

VEPCO had estimated a net savings of \$125 million and, if the cost of the demineralizer systems were included, a savings of \$100 million would remain. The Staff estimated, over 10 years, a cost of \$360 million in differential fuel costs if the repair were not made. The additional cost of the demineralizer systems would not have changed the Staff's conclusions.

The Petitioners also assert that the Staff's calculations were based on a cost-benefit analysis over a 10-year period. This is true. The 10-year period was selected as an example only to show the reasonableness of VEPCO's estimated net savings over the life of the plant. Based on this example, the Staff showed that VEPCO's estimate was conservative.

Based on the above, I conclude that the issuance of the amendments was not arbitrary and capricious nor did it violate the Administrative Procedure Act nor the Atomic Energy Act.

4. The Issuance of the Amendment Was Consistent With NRC Regulations

A. The Issuance of a Construction Permit Was Not Required Under NRC Regulations

The petitioners assert that according to 10 CFR Section 50.91, the Staff was required to issue construction permits prior to the issuance of the operating license amendments for the Surry repair project. This allegation is based on an erroneous conception of the function of a construction permit in situations involving plant modifications.

Any proper analysis of section 50.91 requires that the regulation be considered within the set of laws and regulations governing NRC response to changes to existing facilities. Under Commission regulations there are many changes which the licensee may undertake without seeking approval of the Commission. These are modifications which involve neither a change in technical specifications nor an unreviewed safety question. 10 CFR

50.59(a)(1) (1979).²⁵ Second there are changes to a licensed facility which require that the licensee obtain prior Commission approval and an amendment to the operating license. At the very least, these modifications involve changes of technical specifications or the introduction of unresolved safety questions. 10 CFR 50.59(a)(1) (1979). This second category of modification is further subdivided into two groups: those license amendments which involve a significant hazards consideration and those which do not. The importance of this distinction lies in the requirement that the NRC must give notice of its proposed action thirty days before issuing such an amendment. This "pre-notice" requirement insures that those individuals affected by the amendment have an opportunity to be heard, if they so desire. The "pre-notice" requirement is dispensed with for those amendments which do not involve significant hazards considerations. Atomic Energy Act of 1954, section 189, 42 U.S.C. Section 2239.²⁶

Finally, there are those modifications to a license which require issuance of a construction permit prior to the issuance of the amendment to the operating license. Under section 50.23 of the Commission's regulations whether a

²⁵ Section 50.59(a)(1) reads:

"The holder of a license authorizing operation of a production facility may (i) make changes in the facility as described in the safety analysis report, (ii) make changes in the procedures as described in the safety analysis report and (iii) conduct tests or experiments not described in the safety analysis report without prior Commission approval, unless the proposed change, test or experiment involves a change in the technical specifications incorporated in the license or an unreviewed safety question."

²⁶ "Sec. 189. Hearings and Judicial Review—

a. In any proceeding under this Act, for the granting, suspending, revoking, or amending of any license or construction permit, or application to transfer control, and in any proceeding for the issuance of modification of rules and regulations dealing with the activities of licensees, and in any proceeding for the payment of compensation, an award, or royalties under sections 153, 157, 186 c., or 188, the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding, and shall admit any such person as a party to such proceeding. The Commission shall hold a hearing after thirty days' notice and publication once in the Federal Register, on each application under section 103 or 104b. for a construction permit for a facility, and on any application under section 104 c. for a construction permit for a testing facility. In cases where such a construction permit has been issued following the holding of such a hearing, the Commission may, in the absence of a request therefor by any person whose interest may be affected, issue an operating license or an amendment to a construction permit or an amendment to an operating license without a hearing, but upon thirty days' notice and publication once in the Federal Register of its intent to do so. The Commission may dispense with such thirty days' notice and publication with respect to any application for an amendment to a construction permit or an amendment to an operating license upon a determination by the Commission that the amendment involves no significant hazards consideration."

construction permit is required for the alteration of a facility is governed by section 50.91.²⁷ Section 50.91 states that a construction permit must be issued for those changes which involve a *material alteration* of a licensed facility.²⁸ (emphasis supplied). The Atomic Energy Act requires that a hearing be held for all issuances of construction permits whether or not it has been requested. Atomic Energy Act of 1954, Section 189, 42 U.S.C. 2239.

The above description sets out a continuum of changes to licensed facilities with the agency responses required for each. The motivating principle underlying this structure is that agency and, more importantly, public participation in the regulatory process should increase in direct relation to the degree to which the contemplated facility alteration involves a change in the nature and function of the facility. These regulations and laws protect the public's due process rights by the strengthening of the hearing requirement according to the extent to which the proposed agency action involves issues within the agency's jurisdiction which were not considered when the public was last afforded an opportunity to be heard on the construction of the facility or its operation. These laws and regulations do not, as the petitioners contend, require public participation according to the size of a proposed repair operation.

In order to meaningfully apply this analytic framework to the Surry steam generator repair effort, it is necessary to refer back to past Commission practice in implementing these regulations. This analysis is essential to the definition of otherwise empty terms such as material alteration. Such a discussion is in accord with the principle that great weight should be given to a practical administrative construction of a disputed provision. *PRDC v. Electrical Workers*, *supra* at 408.

First, there has been only one instance in which a construction permit was issued prior to an amendment of an operating license. This action related to an amendment issued on March 2, 1971 to the University of Maryland research reactor license (Docket No. 50-106). The facility alteration involved the complete removal of existing control rods, rod drive mechanisms, core instrumentation and control room equipment supplied by the Allis-Chalmers Corporation and replacement of these components with new components of the Triga design. The change rendered major portions of the original safety analysis for the facility inapplicable to the modified facility.

The only other instance involving a Staff decision to require a construction permit for an alteration of a licensed facility occurred when Nuclear Fuel

²⁷ Section 50.23 reads in part:

"A construction permit for the alteration of a production or utilization facility will be issued prior to the issuance of an amendment of a license, if the application for amendment is otherwise acceptable as provided in section 50.91."

²⁸ Section 50.91 reads in part:

"If the application involves a material alteration of a licensed facility, a construction permit will be issued prior to the issuance of the amendment to the license."

Services applied for an amendment to its provisional operating license for the West Valley fuel reprocessing facility in New York. The proposed changes involved the construction of a new gas building, a new cask unloading pool, a new water treatment facility, the extension to the plutonium extraction facility and the crane room and other changes that would make the facility substantially different after the modifications from that initially licensed. Most important was the fact that these modifications would have increased the facility's production capacity by a factor of three. In view of these facts, the Staff advised the licensee that the proposed changes appeared to be material alterations within the meaning of 10 CFR section 50.91 and that a construction permit would be required prior to the issuance of the license amendment. No permit was ever issued since Nuclear Fuel Services advised the agency, in September 1976, that it was withdrawing from the fuel reprocessing business and the proceeding has been inactive since that time.

The characteristic shared by these cases is that the changes proposed by the licensees involved substantial changes in the type of major components of existing facilities to a different type of equipment. Thus, the changes introduced new significant issues relating to the nature and function of the facilities and to the public's health and safety. The public participation on the original license was rendered meaningless as a drastically different set of facts and questions had to be considered by the NRC in relation to the different equipment. Hence, these changes required that construction permits be issued prior to the issuance of a license amendment under section 50.91.

No material alterations are being contemplated for the Surry plant. The steam generator repair effort includes three changes to the facility, but none materially departs from the design of the plant originally approved. First, and most prominently, is the actual repair of the generators. This facet of the project consists of several elements including:²⁹

1. The installation of new lower steam generator assemblies consisting of the tube sheet, tube bundle assembly, reactor coolant inlet and outlet channel head with nozzles, and the outer shell.
2. The new lower assemblies will have a flow distribution baffle plate designed to assist and direct the lateral flow across the tubesheet surface, thus minimizing the number of tubes exposed to sludge and causing the sludge to deposit near the center of the tube bundle at the blowdown intake.
3. The incorporation of an improved blowdown system having a blowdown intake location coordinated with the baffle plate design so that the maximum flow is located where the greatest amount of sludge is expected to deposit.
4. The tubes in the new lower assemblies will be expanded to the full depth of the tubesheet to eliminate the potential for contaminant concentration at

²⁹ *Safety Evaluation for Surry Power Plant, Units 1 and 2*, (December 15, 1978) at 4-6.

these interfaces on the steam side. Recessing the tubes into tube sheet holes and welding them to the tubesheet cladding is expected to reduce entry pressure losses and eliminate crud buildup on the reactor coolant side.

5. The change of the tube support plate material from carbon steel to SA-240 Type 405 ferritic stainless steel in the new lower assemblies—a material that is expected to be much more corrosion resistant than the carbon steel now in use.
6. The placement of “quatrefoil” design holes in the new tube support plates to provide higher average flow velocities along the tube surfaces passing through the support plates, thus preventing most sludge depositions and eliminating the denting.
7. Modifications to the existing moisture separator equipment which will serve to minimize moisture and soluble corrodent species carryover into the turbines.
8. The installation of a 2-inch nozzle to the existing upper shell to facilitate wet lay-up of the steam generators during periods of inactivity. This nozzle can be used for addition of chemicals to maintain water quality.
9. The inclusion of a 3/8 inch primary shell drain in the new channel head to improve drainage of the channel head.
10. The welding of closure rings inside the new channel head at the base of each reactor coolant nozzle so that closure plates can be bolted in place during reactor coolant side maintenance.
11. The thermal treatment of the new Inconel-600 tubing used in the repaired steam generators. This treatment will produce a microstructure with improved resistance to stress corrosion cracking by reactor coolant. In addition, the tubes in the innermost eight rows of the bundle will be stress relieved after bending to minimize residual stresses.

The second modification of the Surry plant included in the generator repair effort is the installation of a full-flow condensate polishing demineralizer system for each unit. Each unit will have an independent chemical regenerator system consisting of a cation regeneration tank, a resin mix and storage tank and an acid and caustic recovery system. A building to house the condensate polishing systems, auxiliary systems, motor control centers and controls panel will be constructed adjacent to the east end of the Unit No. 2 turbine building. This system is being installed to aid in controlling water chemistry in the secondary system in order to reduce the corrosion to be experienced in the generators in the future. “Steam Generator Repair Program, Surry Power Station, Unit Nos. 1 and 2,” pp. 5.3-3 and 5.3-4.

Last, a concrete storage facility will be constructed on the site to house the replaced generator parts. It will be an above ground concrete structure on a poured structural slab. Its internal space will be divided into two cells (each

capable of storing three assemblies)²⁹, with a 2-foot thick separation wall between the cells. The exterior walls will be approximately 3 feet thick. A sealing system will be used to prevent water intrusion and to promote runoff, and an internal sump will be provided to collect any water inside the building. Steam Generator Repair Program at 5.3-1.

The facility modifications described above do not constitute a material alteration of the Surry plant. On the contrary, the steam generator repair is in reality a major maintenance operation consisting of plant modifications which are being implemented so that the plant may function as was originally intended. More specifically, the steam generator repair will restore the heat transfer capacities of the units to their original design levels. Safety Evaluation Report for Surry Units 1 and 2 (Docket Nos. 50-280 and 50-281), p. 4. In addition, the storage structure will not in any way affect the nature or function of the plant. The structure will merely serve as a temporary repository for the replaced generator parts. Moreover, it is projected that the radioactivity levels outside the building will be low enough to designate the structure as an unrestricted area. *Infra* p. 661.

The Staff did find it necessary to issue license amendments for the steam generator repair effort to have the plant function as it was originally intended to function. The decision, however, did not stem from the structural changes that will be made to the facility, but rather is attributable to the safety questions inherent in the repair process itself. The repair operation involves extensive work with radioactive components including the cutting, welding and transporting of portions of the steam generators and related water and steam lines. In view of the potential exposure hazards of such work, the licensee and its subcontractors have had to develop elaborate procedures to protect the workers from radiation exposure. The Staff properly determined that such procedures and operations contained unreviewed safety questions and pursuant to section 50.59, the Staff required the licensee to apply for a license amendment for the repair effort. *Supra*, p. 624. Furthermore, the repair operation raised safety questions serious enough to prompt the staff to designate the license amendments as involving significant hazards considerations. Atomic Energy Act of 1954, Section 189 42 U.S.C. 2239. These safety issues, however, relate to the process of steam generator repair and not to material alterations in the nature and function of the Surry plant. In fact there are no such alterations being contemplated for the Surry plant. Thus, under section 50.91, the Surry steam generator repair effort did not require a construction permit prior to the issuance of the licensing amendments.

The petitioners also cite section 50.54(n) in support of their claim that the Staff was required to issue a construction permit prior to the issuance of the operating license amendments for the Surry steam generator repair effort. The Staff concedes that if section 50.54(n) were to be read literally without regard

²⁹ One of the six Surry steam generator lower assemblies is now being considered for research work at Hanford. Therefore, the facility may contain only five of the six assemblies during the remaining life of the station. Also see notes 8 and 13, *supra*.

to other related regulations or the Atomic Energy Act of 1954, it would appear to require that a construction permit be issued for every modification of a licensed facility which involves the change of a technical specification.³⁰ Such a reading has to be rejected as it wreaks havoc with both the procedural framework created by section 189 of the Atomic Energy Act and the regulations promulgated by the NRC in accordance with that section. See *Train v. Colorado Public Interest Research Group, Inc.* 420 U.S. 1(1976).

As was noted above, the regulatory scheme promulgated under the Atomic Energy Act sets out a continuum of modifications to existing facilities and varying agency responses to each of these changes. The most significant of these modifications, a material alteration, requires a construction permit. A construction permit can only be granted after a *mandatory* public hearing. The literalist interpretation of section 50.54(n) offered by the petitioners would impose the same procedural requirements on a modification involving a change in technical specifications even if the actual change in the facility represented a minor, immaterial modification of the facility. This interpretation would thus create the absurd situation in which a minor change in the facility that happened to involve a change in technical specifications but, simultaneously, no significant hazards consideration, would require a mandatory hearing. A facility modification involving a license amendment with a significant hazards consideration but no change in technical specifications would only require a hearing if it were requested after the appropriate "pre-noticing" procedures were followed.

Furthermore, this literal interpretation of 50.54(n) would add considerable confusion to the meaning of several NRC regulations. It will be recalled that, together, sections 50.23 and 50.91 require construction permits only for modifications which entail a material alteration to the facility. Such material alterations involve changes much more substantial than a modification involving the change in a technical specification. *Supra* et seq p. 651-52. In addition, this literal reading of section 50.54(n) would cloud the meaning of section 50.59. Section 50.59 states that one criterion for determining whether a *license amendment* is required for a facility modification is whether the alteration entails a change in technical specifications. The literal interpretation of section 50.54(n) would thus leave the Staff in a position of using the same criterion, a change in technical specifications, for making two very different decisions: (1) whether a construction permit and license amendment or merely a license amendment should be required for a facility modification, and (2) whether a license amendment or no agency action at all is appropriate for a facility modification.

The better reading of section 50.54(n) is that it requires a construction permit for those facility modifications which require changes in technical

³⁰ Section 50.54(n) reads:

(n) The licensee shall not, except as authorized pursuant to a construction permit, make any alteration in the facility constituting a change from the technical specifications previously incorporated in a license or construction permit pursuant to 50.36.

specifications which also entail material alterations of the facility as stated by section 50.91. This was in fact the interpretation adopted by the Atomic Safety and Licensing Board:

However when sections 50.23, 50.45, 50.55, 50.56, 50.90, 50.54(n) [emphasis supplied] and 50.91 are read as a whole, it is clear that only if an application for an operating license involves a material alteration of a licensed facility must a construction permit be issued prior to the issuance of the amendment.

In the Matter of Portland General Electric Company, et al. (Trojan Nuclear Plant), LBP-77-69, 6 NRC 1179, 1182 (1977). As was demonstrated above, the modifications contemplated for the Surry plant are not material under section 50.91³¹ Thus, neither section 50.91 nor section 50.54(n) requires that a construction permit be issued prior to the issuance of license amendments authorizing repair of the steam generators at Surry.

B. The Steam Generator Repair Effort Does Not Involve A Disposal of Nuclear Waste and Thus Did Not Require Commission Approval Under Section 20.301

³¹ In addition to the facility modifications described in the discussion of section 50.91, the steam generator repair effort involves the following license conditions which functionally operate as changes in technical specifications:

- a. All fuel shall be removed from the reactor pressure vessel and stored in the spent fuel pool.
 - b. The temporary containment and ventilation systems shall be operating for all cutting and grinding operations involving components with removable radioactive contamination greater than 2200 DPM per 100 cm².
 - c. The health physics program and procedures which have been established for the steam generator repair program shall be implemented.
 - d. Progress reports shall be provided at 60-day intervals from the start of the repair program and due 30 days after close of the interval with a final report provided within 60 days after completion of the repair. These reports will include:
 - i. A summary of the occupational exposure expended to date using the format and detail of Table 5.3-1 of the report entitled "Steam Generator Repair Program."
 - ii. An evaluation of the effectiveness of dose reduction techniques as specified in Chapter 6 of the report entitled "Steam Generator Repair Programs" in reducing occupational exposures.
 - iii. An estimate of radioactivity released in both liquid and gaseous effluents.
 - iv. An estimate of the solid radioactive waste generated during the repair effort including volume and radioactive content.
- (3) Sixty days prior to fuel loading, the program for preoperational testing and startup shall be submitted for NRC review.

In addition, the steam generator repair will allow for the deletion of technical specifications relating to the inspection and plugging of the formerly deteriorating steam generators.

The petitioners assert that VEPCO was required to procure the Staff's approval for the disposal of the steam generators. This contention is entirely based on the invalid assumption that the steam generators are being disposed of. Portions of the steam generators are being stored at the site until a suitable plan is developed for their disposal and most probably will not be disposed of until the plant is decommissioned. EIA at 2. In this respect, the removed portions of the steam generators are not unlike other radioactive components at some facilities which have been removed from service during maintenance and repair and which will remain at the sites until they are disposed of upon decommissioning.

Furthermore, until the removed portions of the steam generators are disposed of, the licensee will store them in accordance with the relevant portions of Part 20. The Staff believes that the radiation levels outside the concrete storage facility walls will be low enough to treat the storage facility as an unrestricted area under 10 CFR 20.105 and 10 CFR 20.207. If, however, upon completion of the transfer of the sealed steam generator lower assemblies to the storage facility, the licensee finds radiation levels in excess of the threshold levels described in section 20.105, the licensee will be required to provide adequate control and posting pursuant to 10 CFR 20.203. Safety Evaluation Report for Surry Units 1 and 2 (Docket Nos. 50-280 and 50-281), p. 25.

C. The Steam Generator Repair Project Is Being Performed Consistent With NRC Regulations Requiring Occupational Radiation Exposures To Be Kept As Low As Reasonably Achievable

The petitioners assert that VEPCO and the NRC are ignoring the ALARA principle³² in their planning and regulating of the steam generator repair project. The petitioners offer no evidence to substantiate this claim save for remark made by a VEPCO spokesperson, which the Staff believes that the petitioners misinterpret. An examination of the facts, on the other hand, reveals that the petitioners' accusation is groundless. The Staff has, in fact, reviewed the licensee's submittal regarding occupational exposures and had concluded that efforts being made to maintain occupational exposures ALARA are acceptable because the licensee is doing everything reasonable to reduce occupational exposure. Safety Evaluation Report at 17.

First, the petitioners cite a statement regarding the applicability of Regulatory Guide 8.8³³ made by a VEPCO spokesperson as evidence of the utility's disregard for the ALARA principle. *Petition* at 55. (The spokesperson asserted that much of Regulatory Guide 8.8 did not apply to the replacement operation.) The petitioners' allegation fails to take into account the broad scope of Regulatory Guide 8.8. The guide discusses the application of ALARA to all stages of a plant's existence from planning through

³² See 10 CFR 20.1(C)

³³ Regulatory Guide 8.8 *Information Relevant to Maintaining Occupational Radiation Exposure as Low as Reasonably Achievable. (Nuclear Power Reactors)*

decommissioning. Regulatory Guide 8.8, Revision 3 (June 1978) at 4. Obviously, portions of Regulatory Guide 8.8 will not be applicable to the steam generator repair operation.

The Staff's interpretation of the spokesperson's statement is supported by VEPCO's implementation of a multi-faceted program to reduce occupational radiation exposure at the site during the replacement operation. The salient features of this plan include:

1. The placement of temporary shielding on piping and components located in the lower steam generator cubicles. It has been estimated that this measure has produced a dose reduction factor of 7 or 240 man-rem. Progress Report No. 2 at 9.
2. The maintenance of water levels in the steam generators above the tube bundle until just prior to removing the lower assemblies. This procedure has resulted in an estimated dose reduction factor of 10 which translates to 576 man-rem. Progress Report No. 2 at 10.
3. The decontamination of the removed reactor coolant pipes through the use of an electropolishing process. Although the calculations for the dose-savings attributable to this measure are quite rough, it has been estimated that the electropolishing process has produced a dose reduction of approximately 400 to 1,000 man-rem.
4. The utilization of other, more general procedures:
 - a. general work area clean-up and debris removal,
 - b. decontamination of tools, equipment and components,
 - c. the use of tools and gloves for special cutting and grinding operations,
 - d. the establishment of low exposure rest areas inside the containment to accommodate workers during idle periods, and
 - e. various miscellaneous measures including health physics and training programs, the "work package" concept for task preplanning and review, special tool and equipment design for exposure reduction, and the project photographic documentation. Progress Report No. 2 at 12, 13, and 14.

Section 20.1(c) of the Commission's Regulations defines the term ALARA to mean "as low as reasonably achievable taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the utilization of atomic energy in the public interest." 10 CFR Section 20.1 (1979). In other words, under ALARA licensees must employ cost-effective methods which reduce radiation exposure. The program described above has been judged by the Staff to satisfy this requirement. Safety Evaluation Report at 17.

D. The Surry Steam Generator Repair Project Does Not Constitute A Dismantling Operation and Thus Does Not Require The Commission's Approval Under 10 CFR 50.82

The petitioners claim that the steam generator repair project constitutes a partial dismantling of Units 1 and 2 and thus requires Commission approval under 10 CFR 50.82.

First, the very language of section 50.82 belies petitioners claims. The first sentence of section 50.82 reads:

Any licensee may apply to the Commission for authority to *surrender* a license voluntarily and to dismantle the facility and dispose of its component parts. [emphasis supplied]

10 CFR 50.82 (1979). This language clearly indicates that the term "dismantling" as used in section 50.82 refers to an act which occurs once the licensee has decided to relinquish its operating license.

Second, petitioners can reach this conclusion only after taking section 50.82 out of its regulatory context. See *Train v. Colorado PIRG*, *supra*. An analysis which places section 50.82 in its proper place within the regulatory framework discloses that section 50.82 simply does not apply to operations such as the steam generator repair project at Surry. Each license to operate a production and utilization facility is issued for a certain duration. 10 CFR 50.51. Once that period has expired, the licensee can either apply for (1) a renewal of its operating license, (2) an amendment to the license which would restrict the licensee to possess but not operate the facility, or (3) NRC approval to decommission the plant. Regulatory Guide 1.86 (1974, p. 1. If the licensee chooses one of the two latter options, it may, in addition, opt to dismantle all or part of the equipment at the plant. It is at this juncture that the licensee must receive the Commission's approval under section 50.82. Regulatory Guide 1.86 (1974), p. 1.

Further support for the Staff's interpretation of section 50.82 is provided by the agency's past practice in implementing the regulation.³⁴ It is instructive to note that the most prominent dismantling approved under section 50.82 to date occurred at the Elk River reactor. The reactor was decommissioned and dismantled and the facility was transformed into a coal-fired power plant. All the nuclear-relate structures and equipment were disassembled and disposed of. Most significantly, the dismantling of the facility was one element in a plan

³⁴ As was noted in the analysis of section 50.91, reference to an agency's practical interpretation of a regulation is a valid method of establishing its meaning, *supra* p. 646 et seq.

to cease operations at a nuclear power facility.³⁵ It is this essential characteristic which has marked the approximately 30 total and partial dismantlings to date.

Moreover, viewing the issue in practical terms, the Staff has in fact examined the same questions in granting the license amendment authorizing repair of the Surry steam generators, that they would have analyzed in determining whether to approve a dismantling 50.82. Most prominently, the actual operation procedures, the storage plan and the security measures for the repair effort have all been analyzed in detail by the Staff. Thus, in reality, the decision to analyze the repair effort as a maintenance measure calling for a license amendment rather than as a dismantling has not affected the Staff's review of VEPCO's action.

Based on the foregoing discussion and the provisions of 10 CFR Section 2.206, I have determined that there exists no adequate basis for taking the action proposed by the Citizen's Groups. The request of the Citizen's Groups is hereby denied.

³⁵ The following summary of the dismantling operation at Elk River demonstrates that further operation of the nuclear facility after the dismantling was completed was out of the question.

The work required to achieve the end product of the dismantling program will consist of:

- a. Removal of the reactor pressure vessel and internals, reactor pressure vessel biological shielding, reactor building and all equipment, concrete, materials and structures located within the space enclosed by the reactor building.
- b. Removal of the superheater, superheater building, and the superheater building foundation down to approximately one foot below existing ground level and all material, piping, equipment and structures from within the superheater's building.
- c. Removal of all piping, conduits, cables, conductors and equipment located in the passageway between the reactor building and the superheater building, the metal superstructure of the passageway and the concrete walls of the structure to approximately one foot below existing ground level.
- d. Removal of all valves, piping, cables, switches, air lines, wiring or components within the turbo-generator facility if they contain reactor-originated radioactivity, or if the AEC wishes to remove them for programmatic or economic reasons.
- e. The east wall of the RCPA steam electric generation building, which is the west wall of the superheater building, will be returned to weather-proof condition by sealing and finishing in an appropriate manner all openings, except the rear entrance door at grade level.
- f. All cavities remaining after the removal of the structures and equipment will be filled with clean rubble and/or earth to approximately grade level.

All items which contain reactor-generated radioactivity will be packaged and transported to an approved burial ground. All non-radioactive material will be used as land fill at the reactor site or disposed of at a local land fill area.

After completion of all dismantling operations and prior to backfill, a thorough radiation survey of the plant site will be performed to verify that all reactor-originated radioactivity has been removed from the site. AEC Elk River Reactor Dismantling Plan (Docket No. 115-47) (1971), p. 47.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and the local public document room for the Surry Nuclear Power Station located at the Swem Library, College of William and Mary, Williamsburg, Virginia 23185. A copy of this decision will also be filed with the Office of the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's Rules of Practice, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 24th day of October, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Joseph M. Hendrie, Chairman
Victor Gillinsky
Richard T. Kennedy
Peter A. Bradford
John F. Ahearn

In the Matter of

Docket No. PRM-71-7

**NONDESTRUCTIVE TESTING
MANAGEMENT ASSOCIATION**

October 24, 1979

The Commission's Executive Director for Operations denies petition for rulemaking requesting the Commission to: (1) remove Appendix E - Quality Assurance Criteria for Shipping Packages for Radioactive Material - from 10 CFR Part 71; and (2) delay the effective date of implementation of Appendix E to 10 CFR Part 71 until a proper hearing can be conducted and possibly total removal of the requirement.

RULEMAKING: NOTIFICATION OF INTERESTED PERSONS

The QA requirements were published in the Federal Register as a proposed rule and as an effective rule with both inviting public comments, and the Commission did attempt to notify affected persons.

RULEMAKING: NOTIFICATION OF INTERESTED PERSONS

In 1973, noticing a proposed rule in the Federal Register was considered adequate notification of affected persons although, in this case, the Commission also issued a public announcement.

RULEMAKING: NOTIFICATION OF INTERESTED PERSONS

The NRC has adopted a policy that in addition to the Federal Register notice, proposed rules are distributed directly to affected licensees and other known interested persons.

RULEMAKING: DELAY OF DATE TO FILE DESCRIPTIONS OF QA PROGRAMS

In response to several requests, including the petition, the Commission extended the date by which licensees had to file descriptions of their QA programs from July 1, 1978, to January 1, 1979.

RULEMAKING: HEARING ON PETITION

The Commission does not find it necessary or advisable to hold a hearing on the QA requirements at this time.

TECHNICAL ISSUES: IMPORTANCE OF QA PROGRAM TO SAFETY

The Commission has determined that application of an effective QA program is important to safety in the packaging and transportation of fissile material and type B and large quantities of other radioactive materials.

TECHNICAL ISSUES: CORRECTION OF NONCOMPLIANCE

Errors in packaging, faults in packaging designs, and some items of noncompliance have contributed to the radiation exposure in a few of the incidents that have occurred in transport. An effective QA program will identify and allow correction to be made of such conditions where they affect safety.

RECIPROCITY: APPLICATION TO AGREEMENT STATEMENT LICENSEES

The QA requirements of 10 CFR Part 71 apply, under the reciprocity provisions of 10 CFR 150.20, to Agreement State licensees when such licensees carry on licensed activities in non-Agreement States. The reciprocity provisions subject any Agreement State licensee who is operating in a non-Agreement State to a number of specified NRC regulations, one of which is 10 CFR Part 71.

VALUE/IMPACT: COSTS OF IMPLEMENTING QA REQUIREMENTS

The Commission has considered costs, both to industry and to the Commission staff, of implementing the QA requirements. Consideration of more than 300 descriptions of QA programs already submitted to NRC to satisfy the requirements by a variety of licensees, including industrial

radiographers, indicates that the paperwork is not overly expensive or insurmountable.

VALUE/IMPACT: COSTS OF QA PROGRAMS

The Commission has found no evidence of large costs or expensive paperwork for the QA programs that are required for industrial radiographers.

TECHNICAL ISSUES: APPLICATION OF QA CRITERIA IN A GRADED APPROACH

In recognition of the varying complexity of QA programs for different types of activities, the Commission encourages the use of a graded approach in establishing QA programs; i.e., the applicable criteria of Appendix E should be applied to an extent consistent with their importance to safety.

TECHNICAL ISSUES: APPLICATION OF QA CRITERIA IN A GRADED APPROACH

A two-page description of the QA program for industrial radiographers has been found to be acceptable to the NRC in most cases, and the specific provisions of the program are limited in number.

TRANSPORTATION: APPLICATION OF DEPARTMENT OF TRANSPORTATION REGULATIONS

Agreement State licensees are generally subject to DOT regulations for the shipment of radioactive materials.

TRANSPORTATION: DIFFERENCES IN QA REQUIREMENTS

Agreement State licensees using one of the small number of DOT specification containers, and those who use designs approved before the QA requirements were adopted, may not have QA programs similar to those required by 10 CFR Part 71.

TRANSPORTATION: REQUEST TO UPGRADE QA REQUIREMENTS OF DOT

The NRC staff has met with DOT officials to discuss quality assurance requirements, and the NRC is formally requesting DOT to upgrade its quality assurance requirements for radioactive material packages to apply to shippers

subject to DOT rules. This will lend a greater degree of uniformity to the QA requirements, especially as they apply to Agreement State licensees.

TRANSPORTATION: NONUNIFORMITY IN QA REQUIREMENTS

Although there is some nonuniformity in the QA requirements for packaging and transportation imposed on NRC and Agreement State licensees, the differences are not large and are being eliminated by requesting DOT to upgrade its quality assurance requirements.

DENIAL OF PETITION FOR RULEMAKING

By letter dated May 10, 1978, Mr. Walter P. Peeples, Jr. on behalf of the Nondestructive Testing Management Association, seven undesignated radiographic camera manufacturers and six undesignated source manufacturers, filed with the Nuclear Regulatory Commission a petition for rulemaking (PRM 71-7).

THE PETITION

The petitioner requested the Commission to: (1) remove Appendix E - Quality Assurance Criteria for Shipping Packages for Radioactive Material - from 10 CFR Part 71, and (2) delay, "the effective date of implementation of Part 71 Appendix E until a proper hearing can be conducted and possibly total removal of the requirement."

BASIS FOR REQUEST

As the basis for the request, the petitioner stated: "... the rule was forced on the industry and not discussed nor did the Commission attempt to notify two-thirds of the manufacturers in this specific area of its attempt to create an almost insurmountable and expensive paperwork program." The petitioner further noted that the lack of uniformity in quality assurance (QA) requirements between Agreement State licensees and NRC licensees is prejudicial and effects an unfair competitive position for manufacturers in Agreement States.

REQUEST FOR COMMENTS ON PETITION

A notice of filing of the petition, Docket No. PRM 71-7, was published in the FEDERAL REGISTER on June 14, 1978 (43 FR 25749). Interested persons were invited to submit written comments or suggestions concerning the petition by August 14, 1978. Thirty-nine comments were submitted, including one from the Air Transport Association of America attaching

separate comment letters from six airline companies, and including one from Gulf Nuclear Incorporated as a protest under which the description of their quality assurance program was being filed.

Of the thirty-nine comments, thirty-two either indicated support for the petitioners request for removal of Appendix E or separately asked for its removal; twenty-eight thought that there was a lack of justification for Appendix E or that the requirements in Appendix E duplicated other requirements; twenty-seven cited large costs and expensive paperwork with these QA requirements; and fifteen believed the requirements had been forced on the industry without consultation.

Six of the commenters were well-logging licensees who normally ship type A quantities of radioactive material and, thus, are not subject to the QA requirements of 10 CFR Part 71. One of these persons suggested that, "... this requirement could, on occasion, delay the transportation, handling and manufacture of such sources to final end users" The Commission is not aware of any delays that could occur unless they were due to safety-related aspects of the transportation and, as such, the QA program would be functioning as intended. The rest of the commenters (33) were involved in industrial radiography. Responses to most of the comments are given in the discussion of grounds for denial below.

NRC RULEMAKING ACTION

Appendix E, "Quality Assurance Criteria for Shipping Packages for Radioactive Material," was part of revised quality assurance (QA) requirements for 10 CFR Part 71 that were published in the Federal Register as proposed regulations on December 28, 1973 (38 FR 35490). At that time, comments were received from ten persons who manufacture or use shipping packages and from one State regulatory agency. As a result of these comments, a number of specific provisions in the proposed regulations were deleted. No broad objections to the Appendix E criteria were raised.

The QA requirements, including Appendix E, were published in the Federal Register on August 4, 1977 (42 FR 39364) to be effective October 18, 1977 but allowing almost 11 months (until July 1, 1978) before QA program descriptions had to be filed with NRC. This Federal Register Notice again invited public comments. Two draft regulatory guides were sent to users of NRC-approved package designs in May 1978 which provided specific guidance on development of QA programs for packagings.

In response to several requests, including the petition, the Commission extended the date by which licensees had to file descriptions of their QA programs from July 1, 1978 to January 1, 1979.

DISCUSSION OF GROUNDS FOR DENIAL

1. The QA requirements were published in the Federal Register as a proposed rule and as an effective rule with both inviting public comments, and the Commission did attempt to notify affected persons.

As indicated above, the proposed rule was published in the Federal Register in 1973, ten persons submitted comments, and the rule was revised in response to those comments. At that time, noticing a proposed rule in the Federal Register was considered adequate notification of affected persons, although, in this case, the Commission also issued a public announcement. More recently the NRC has adopted a policy that in addition to the Federal Register notice, proposed rules are to be distributed directly to affected licensees and other known interested persons.

The effective rule was published in the Federal Register in August 1977, and no public comments were received at that time. The effective rule was discussed in a public meeting in April 1978 (43 FR 12718, March 27, 1978, "Advance Notice of Proposed Rulemaking on Design of Radiographic Exposure Devices"). Specific guidance on the content of the description of the QA program¹ to be submitted to NRC to satisfy the provisions in the rule were distributed to users of NRC approved packages, including some Agreement State licensees, in May 1978. In addition, a paper that described the QA regulations of 1977 in detail was presented in May 1978 at the Fifth International Symposium on Packaging and Transportation of Radioactive Materials.

2. The Commission has determined that application of an effective QA program is important to safety in the packaging and transportation of fissile material and type B and large quantities of other radioactive materials.

The purpose of the revised QA requirements issued in 1977 was to upgrade existing requirements for QA in packaging and transportation to assure a continued high degree of safety in view of the ever expanding operational and shipping activities involving radioactive materials, to improve the assurance compliance with the regulations in those activities and to make the QA requirements more explicit and more nearly uniform for licensees. These requirements apply to persons who are subject to 10 CFR Part 71; thus they apply to shippers of fissile material, type B and large quantities of other

¹ Draft Regulatory Guide 7.XX, Content of the Description of a Quality Assurance Program for the Use, Maintenance, and Repair of Shipping Packages for Certain Special Form Radioactive Material, (applicable to industrial radiography sources) May 1, 1978 and Draft Regulatory Guide 7.XX, Establishment of a Quality Assurance Program for Shipping Packages for Irradiated Fuel, High Level Waste and Plutonium, May 15, 1978. Single copies are available from the Transportation Branch, Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission, Washington, D.C. 20555.

radioactive material, and generally do not apply to shippers of type A quantities (i.e., smaller quantities) of radioactive material. The categories of type A, type B and large quantities of radioactive material, as defined in 10 CFR Part 71, provide distinctions in the significance to health and safety for the wide range of quantities of radioactive material in transportation. Quantities of radioactive material in transport up to type A quantity limits present a limited potential hazard but greater than type A quantities may present significant potential hazards.

Inspection surveys show a sizable percentage of packages in transport are not in full compliance with DOT requirements. Errors in packaging, faults in packaging designs, and some items of noncompliance have contributed to the radiation exposure in a few of the incidents that have occurred in transport. An effective QA program will identify and allow correction to be made of such conditions where they affect safety.

3. The Commission has considered costs, both to industry and to the Commission staff, of implementing these QA requirements. Also, consideration of more than 300 descriptions of QA programs already submitted to NRC to satisfy the requirements by a variety of licensees, including industrial radiographers, indicates that the paperwork is not overly expensive or insurmountable.

QA programs, based on criteria similar to Appendix E, have been required for shippers of fissile material, high level waste, and plutonium packages since 1972 and, therefore, no additional costs were encountered by these licensees when the QA regulations were promulgated in 1977. Shippers of type A quantities of radioactive material are usually exempt from the requirements of 10 CFR Part 71 and, therefore, encounter no costs due to the QA requirements. Type A quantities include small quantities of radioactive material for medical uses, for calibration of instruments, and for other purposes. The QA requirements apply to fissile and type B or greater quantities of other radioactive material. This covers a large range of quantities of radioactive material. In recognition of the varying complexity of QA programs for different types of activities, the Commission encourages the use of a graded approach in establishing QA programs; i.e., the applicable criteria of Appendix E should be applied to an extent consistent with their importance to safety. This factor was overlooked initially by some affected persons who estimated high program costs due to the QA requirements.

Although many radiography shipments involve type B quantities of radioactive material, they are limited quantities, much smaller than many other shipments, and they are always in special form (encapsulated solid material form). Therefore, the QA programs required for industrial radiography are correspondingly less complex than those required for many other packaging and transportation activities; for example, those required for irradiated fuel, high level waste, plutonium, or the larger type B quantities of normal form materials. A two-page description of the QA program for

industrial radiographers has been shown to be acceptable to the NRC, in most cases, and the specific provisions of the program are limited in number. Many industrial organizations already have established specific procedures with respect to quality-related controls for their packaging and transportation activities and, in these cases, the Part 71 QA program requires only a little, if any, increase in effort for recordkeeping and audit procedures. The Commission has found no evidence of large costs or expensive paperwork for the QA programs that are required for industrial radiographers.

In any case, following the 'graded approach' discussed above, the required QA programs for fissile materials or type B or large quantities of other radioactive materials are dependent on the complexity of the package *and* the health and safety significance of the quantity, type and form of radioactive material shipped in the packaging.

4. The petitioner also noted that there was a lack of uniformity in QA requirements between Agreement State licensees and NRC licensees. The reciprocity provisions of 10 CFR Part 150, "Exemptions and Continued Regulatory Authority in Agreement States under Section 274," permit Agreement State licensees to conduct the same activity in non-Agreement States pursuant to a general license granted by the NRC. The QA requirements of Part 71 apply directly to NRC licensees and, under the reciprocity provisions of Part 150 (K150.20), to Agreement State licensees when such licensees carry on licensed activities in non-Agreement States. The reciprocity provisions subject any Agreement State licensee who is operating in a non-Agreement State to a number of specified NRC regulations, one of which is Part 71.

Agreement State licensees are generally subject to DOT regulations for the shipment of radioactive materials. Under DOT rules, Agreement State licensees may use DOT specification or NRC-approved packaging, or may apply to NRC for approval of package designs for shipping fissile materials and type B and large quantities of other radioactive materials. In issuing those approvals, NRC imposes the QA program requirements of Part 71. Therefore, Agreement State licensees using one of the small number of DOT specification containers, and those who use designs approved before the QA requirements were adopted, may not have QA programs similar to those required by Part 71. The NRC staff has met with DOT officials to discuss quality assurance requirements, and the NRC is formally requesting DOT to upgrade its quality assurance requirements for radioactive material packages to apply to shippers subject to DOT rules. This will lend a greater degree of uniformity to the QA requirements, especially as they apply to Agreement State licensees.

SUMMARY OF GROUNDS FOR DENIAL

The Commission has given careful consideration to the petitioner's arguments in PRM 71-7 and the comments received on the petition and has decided to deny the petition on the following grounds:

1. The record shows that both the proposed rule and the effective rule were published in the Federal Register inviting public comments, and the Commission did attempt to notify affected persons.

2. Requiring that licensees have an effective QA program for packaging and transportation will improve safety.

3. The paperwork associated with the QA requirements for packaging and transportation is not overly expensive or insurmountable.

4. Although there is some nonuniformity in the QA requirements for packaging and transportation imposed on NRC and Agreement State licensees, the differences are not large and are being eliminated by requesting DOT to upgrade its quality assurance requirements.

Further, the Commission does not find it necessary or advisable to hold a hearing on the QA requirements at this time.

Copies of the petition for rulemaking, the comments thereon, a value impact statement on the denial, and the NRC's letter of denial are available for public inspection and copying in the NRC's public Document Room at 1717 H Street, N.W., Washington, D.C.

Dated at Bethesda, Md. this 2nd day of Oct. 1979.

For the Nuclear Regulatory Commission.

Lee V. Gossick
Executive Director for Operations

[NOTICE PUBLISHED IN THE FEDERAL REGISTER ON OCTOBER 24, 1979, 44 FR 61274]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Joseph M. Hendrie, Chairman
Victor Gilinsky
Richard T. Kennedy
Peter A. Bradford
John F. Ahearne

In the Matter of

**CAROLINA POWER AND
LIGHT COMPANY**

**Docket Nos. 50-400
50-401
50-402
50-403
November 5, 1979**

**(Shearon Harris Nuclear Power Plant,
Units 1, 2, 3, and 4)**

The Commission denies intervenors' motions to reopen and remand this proceeding to the Licensing Board for the purpose of litigating unspecified contentions relating to the effects of the "Lewis Report" on the Licensing Board's 1978 decision to permit construction of the Shearon Harris facility.

ORDER

Intervenors Conservation Council of North Carolina and Wake Environment, Inc., have moved the Commission to reopen and remand one aspect of this proceeding to the Licensing Board. In their brief motion, Intervenors argue that the Licensing Board decision in 1978 to permit construction of the Shearon Harris plants is implicitly, if not explicitly, premised on the soundness of the Reactor Safety Study (WASH-1400), otherwise known as the Rasmussen Report. Intervenors point out that the Commission withdrew its support for certain aspects of WASH-1400 by the adoption of a report by the NRC Risk Assessment Review Group in 1979, known as the Lewis Report. Based on this decision, the Intervenors seek the opportunity to litigate unspecified contentions "relating to the effects of the Lewis Report upon the Shearon Harris proceeding." Both the NRC staff and the applicant have filed oppositions to this motion. As the Commission decided in response to another request for a remand, "the Shearon Harris proceeding is now concluded except for the radon question pending before the Appeal Board and the management qualification issue which we remanded to the Licensing Board." *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), CLI79-5, 9 NRC 608,610 (May 2, 1979). Consequently

the appropriate remedy in this case is for intervenors to request action under 10 CFR 2.206. However, since that opinion was issued after this motion was filed, we will address the motion for remand on the merits.

We understand the Intervenor's argument to be that adoption of the Lewis Report has somehow altered, in a manner not identified in the motion, the basis for the Harris Initial Decision. Even assuming this connection to have been squarely presented, it is not supported by the record in this case. No reference is made to the Rasmussen Report in the Initial Decision. *See* LBP-78-4, 7 NRC 92 (1978). Similarly, no such reference appears in the Appeal Board affirmation. ALAB-490, 8 NRC 234 (1978). In fact, our attention is called to only two instances where the Rasmussen Report is mentioned: in the Final Environmental Statement (by reference to the fact that the study leading to the Report was in progress) and in prepared staff testimony about the comparative health effects of the nuclear vs. the coal fuel cycle. In the latter instance, the staff testimony noted the uncertainties in the Rasmussen Report. Most significantly, the staff noted this prepared testimony (which became draft NUREG-0332) in its review of regulatory actions referencing the Rasmussen Report after the adoption of the Lewis Report; the staff found that no reconsideration of the individual licensing actions was necessary. The Commission agreed.

In the instant proceeding, Intervenor's have failed to make a showing that the Harris Initial Decision was in any way dependent upon the Rasmussen Report and that adoption of the Lewis Report represented a change in material fact so as to warrant litigation anew. *See ICC v. Jersey City*, 322 U.S. 503, 514 (1944). Consequently, we deny the Intervenor's motion on the merits.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, DC,
this 28th day of November, 1979.

ATTACHMENT

SEPARATE COMMENTS OF COMMISSIONER BRADFORD

I concur with the result in this decision. However, I would have addressed the standard to be applied to motions to reopen licensing proceedings. The Commission's most recent pronouncement in this regard requires the proponent of such a motion to establish "that 'a different result would have been reached initially had [the material submitted in support of the motion]

been considered.' (citations omitted)." *Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1)*, ALAB-462, 7 NRC 320, 328 (1978).

This inordinately strict standard has masqueraded as being similar to that applied by the Federal courts. See *Northern Indiana Public Service Company (Bailly Generating Station, Nuclear-1)*, ALAB-227, 8 AEC 416 (1974), citing *Unarco Industries, Inc. v. Evans Products Company*, 403 F.2d 638 (7th Cir. 1968) and *Knight v. Hersh*, 313 F.2d 879 (D.C. Cir. 1963). However, it is clear that *Wolf Creek* in fact exaggerates this standard. As applied to NRC, *Unarco* indicates that the proponent of a motion to reopen and remand a licensing proceeding should not be required to make more than a *prima facie* showing that a different result would have been reached had the new evidence been available. The result in *Knights* is consistent with this approach.

The Commission has agreed that a generic review of this issue is appropriate, and, accordingly, has so directed the staff. However, until that review is completed, litigants and hearing boards must interpret an unduly burdensome and possibly transitory standard, a result which would have been avoided had the Commission decided to address this issue directly in this case.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matter of

**METROPOLITAN EDISON
COMPANY, et al.**

Docket No. 50-320

**(Three Mile Island Nuclear
Station, Unit 2)**

November 2, 1979

The Appeal Board synchronizes the schedule for the postponed hearing on the probability of a heavy aircraft crashing into the facility with the hearing on the generic question of the environmental effect of radon releases associated with the mining and milling of uranium earlier scheduled to begin on February 25, 1980, at a location in the Harrisburg, Pennsylvania, area.

Mr. George F. Trowbridge, Washington, D.C., for the applicants, Metropolitan Edison Company, *et al.*

Dr. Chauncey R. Kepford, State College, Pennsylvania, for the intervenors, Citizens for a Safe Environment and York Committee for a Safe Environment.

Mr. Lawrence J. Chandler for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

A. Last December, we conducted our own evidentiary hearing on the question of the degree of probability that a heavy aircraft (*i.e.*, one weighing in excess of 200,000 pounds) might crash into Unit 2 of the Three Mile Island facility (TMI-2) in the course of landing at or taking off from the nearby Harrisburg International Airport.¹ Although this question had been previous-

¹ The reactor's vital structures, power supplies and cooling water sources were designed to withstand the aircraft impact and fire effects stemming from the crash of a 200,000-pound plane traveling at a speed of 200 knots. The applicants and the NRC staff had reached the conclusion upon analysis that the probability of the crash of an aircraft heavier than 200,000 pounds into TMI-2 was so low that the plant need not be designed to withstand its effects. See ALAB-486, 8 NRC 9, 25-27 (1978).

ly explored in the hearings before the Licensing Board on the operating license application for TMI-2, we had concluded the prior July that further evidence was required. More specifically, we had determined that (1) the record developed below permitted a finding that, *at present levels of air traffic at the Harrisburg Airport*, the probability of a crash of a heavy airplane which would affect public health and safety was less than the guideline value of 1×10^{-7} per year (*i.e.*, less than one chance in ten million); *but* (2) the evidence at hand did not likewise allow a finding with respect to the crash probabilities which would obtain should there be a significant increase in air traffic levels during the lifetime of the reactor. See ALAB-486, *supra* fn. 1, 8 NRC at 27-49. On the latter score, we said, "the record [was] sufficiently marred by inadequacies, inconsistencies, and ambiguities as to be unsatisfactory for ascertaining the increased level of traffic at which the 10^{-7} probability would be exceeded." *Id.* at 43.²

At the December hearing, the NRC staff presented, *inter alia*, the testimony of employees of the Federal Aviation Administration with respect to operations at the Harrisburg Airport. In the course of this testimony, the witnesses discussed the extent to which large aircraft might fly directly over the TMI facility when approaching the airport under visual flight rules (VFR). Although opining that it was unlikely that there would be an intentional overflight, the witnesses acknowledged that such action was not legally precluded and that, not being pilots themselves, they were unable to state categorically that overflights did not occur.

Subsequent to the conclusion of the December hearing, and with our leave, the intervenors³ moved to reopen the record to enable them to adduce evidence of their own on the overflight question. On February 1, 1979, we granted the motion and also accepted the offer of the staff to furnish the testimony of commercial airline pilots who might possess direct knowledge relating to the landing patterns actually employed by heavy aircraft approaching the Harrisburg Airport. ALAB-525, 9 NRC 111, 113-14. Beyond that, we invited the applicants and the staff to take advantage of the further hearing on landing patterns to address certain concerns which our preliminary review of the transcript of the December hearing had surfaced with regard to both (1) the models developed by those parties to predict spatially dependent crash rates; and (2) their assessments of the precision of those models. *Id.* at 115-18.

On March 5, 1979, a conference was held with the parties by telephone, which produced agreement that the further hearing would be held on April 4, 1979 in Harrisburg and that it would embrace both the overflight matter and the questions raised in ALAB-525 regarding the predictive models. Thereafter, in accordance with an established schedule, the parties served and

² In the course of denying a petition filed with it for review of ALAB-486, the Commission broadened the scope of the evidence which we had indicated in our decision was to be adduced at the hearing. CLI-78-19, 8 NRC 295 (1978).

³ Citizens for a Safe Environment and York Committee for a Safe Environment.

filed written testimony (in full or in summary form) and the staff caused the issuance of subpoenas to the prospective commercial pilot witnesses.

B. Exactly one week before the further hearing was to commence, the accident involving TMI-2 occurred. Because of this development, the hearing was postponed indefinitely. A month later, on May 2, we issued a memorandum (unpublished) in which we indicated our belief that “no useful purpose would be served by rescheduling the hearing at this time or in the near future” and stated that the situation would be reassessed in October.

On September 10, to assist us in that reassessment, we invited the parties to furnish their views on “(1) whether it is appropriate now to reschedule the hearing”; and (2) if not, “at what point should the rescheduling next be considered.” The intervenors, applicants and staff all responded to that invitation.⁴

For their part, the intervenors explicitly eschewed taking a position on either of the questions we had posed. Rather, they confined themselves to “certain observations” which they believed we should consider in reaching our decision on whether to proceed with the aircraft crash probability issue. Among other things, we were reminded that that issue is not unique to TMI-2 but, to the contrary, “applies equally” to Unit No. 1 of the facility which is located on the same site. Further, according to the intervenors, the TMI-2 accident “may have . . . greatly complicated” the aircraft crash issue. In this connection, they suggested the enhanced possibility of “a release to the environment of potentially large quantities of highly contaminated water in the event of the crash into TMI-2 of *any* size aircraft”

In the applicants’ view, there exists good reason to proceed with the further hearing just as soon as the staff is able to arrange anew for the appearance of their pilot witnesses. Although recognizing that the resumption of TMI-2 operation “may be some time off,” the applicants recorded their expectation that, following the completion of recovery operations, they will seek authority to resume such operation—and the resultant importance to them of having the heavy aircraft crash probability issue laid to rest expeditiously. Additionally, they took note of the continuing availability of the technical witnesses and counsel familiar with the “complicated” evidence already adduced on the issue and expressed the fear that “the situation with respect to the familiarity and availability of witnesses and counsel is likely to deteriorate if the hearing is postponed for a protracted period of time.” Finally, the applicants suggested that there are generic aspects to the issue and that our decision will provide “important regulatory guidance” for other licensing proceedings.

The staff’s response (filed on October 17) called upon us to defer consideration of rescheduling the hearing for a period of 30 days. Our

⁴ The Commonwealth of Pennsylvania has been following the course of this proceeding in the capacity of an “interested state” intervenor under 10 CFR 2.715(c). The Commonwealth did not, however, take an active role in the hearing last December (although its counsel was present) or in connection with any matter related to the additional hearing.

attention was directed to the fact that, by reason of an order entered by the Commission on October 16, 1979, there may be a hearing in the near future on the question of the use of the EPICOR-II system to decontaminate intermediate-level waste water currently in the TMI-2 auxiliary and fuel handling buildings as a consequence of the March 28 accident. If such a hearing were to be held, it would likely involve the same counsel as represent the parties in the proceeding at bar. Moreover, the staff maintained, in mid-November it would be better able "to evaluate the factors identified" in our *Douglas Point* decision⁵ which the staff thought "to have a bearing on whether going forward at this time is warranted."

C. We can readily agree with the staff that the decision on whether now to reschedule the hearing may involve consideration of a number of factors. We are unpersuaded, however, that any useful purpose would be served by deferring the decision for the period suggested by the staff. All of the information of possible relevance to identifying and balancing those factors appears to be now in hand—and we perceive no substantial likelihood of any influential new development in the course of the next several weeks. To be sure, the deadline prescribed by the Commission's October 16 order for the filing of requests for hearing on the EPICOR-II matter does not expire until next week.⁶ But we have never contemplated proceeding with our hearing at a pace which might engender a conflict with the preparation for or conduct of any hearing which might be sought in that matter.

1. In *Douglas Point*, ALAB-277, *supra*, we were confronted with a referred licensing board ruling to the effect that, in circumstances where an applicant for a construction permit announces its intent to postpone building and operating the nuclear facility in question for several years, it is perforce inappropriate to proceed with an evidentiary hearing on any of the issues presented by the application. We disagreed with that ruling, finding no basis to ascribe to either Congress or the Commission the unarticulated purpose of requiring, as a matter of law, the deferral of all evidentiary hearings if it should turn out that the applicant will not require the sought permit or license for several more years. Rather, the absence of any rigid scheduling criteria established by statute or regulation suggests that the adjudicatory boards were to decide for themselves in such circumstances when hearings should be held on specific issues. It seems to us that a variety of factors appropriately should be taken into account in reaching that decision. Principal among them are: (1) the degree of likelihood that any early findings on the issue(s) would retain their validity; (2) the advantage, if any, to the public interest and to the litigants in having an early, if not necessarily conclusive, resolution of the issue(s); and (3) the extent to

⁵ *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-277, 1 NRC 539, 547 (1975). We discuss those factors later in this opinion, pp. 682-684, *infra*.

⁶ Insofar as we are aware, to date no such requests have been received.

which the hearing of the issue(s) at an early stage would, particularly if the issue(s) were later reopened because of supervening developments, occasion prejudice to one or more of the litigants.

1 NRC at 547.

In short, the *Douglas Point* criteria were evolved in a markedly different context from that in which the scheduling question now before us has arisen. Here, we are not called upon to decide whether to embark upon the adjudication of one or more issues not previously explored at all insofar as the reactor at bar is concerned. To the contrary, the aircraft crash probability issue has already been examined in substantial depth in this very proceeding; what remains is to bring that examination to a conclusion. Beyond that, the clear possibility existed in *Douglas Point* that the applicant eventually would elect to abandon its proposal;⁷ in contrast, a built reactor is here involved and no current reason exists for acting on the basis either (1) that it cannot be restored to operable condition or (2) that, if so restored, the applicants will not then promptly follow through on their stated intention to seek authorization to resume operation.

For present purposes, however, we shall assume (without definitively ruling on the point) that the *Douglas Point* criteria should be deemed instructive in situations of this kind. We examine them *seriatim*.

2. a. We are satisfied that there is relatively little chance that any findings which we might make on the aircraft crash probability issue would lose their validity with the passage of time. To be sure, two or three years from now there may be increased use of the Harrisburg Airport by heavy aircraft. But what we are called upon to decide does *not* necessitate the making of any subsidiary findings regarding the actual levels of air traffic which will obtain at that airport at any particular time in the future. Rather, to repeat (see p. 680, *supra*), our task is to ascertain the level of traffic at which the 10^7 probability would be exceeded. Should that level be reached *at any point* during the lifetime of the reactor, further protective measures may have to be taken.

The staff alludes, however, to the possibility that there also may be a change in the crash rates applicable to heavy aircraft and that any such change might influence the outcome of the probability analysis. Although this possibility cannot be entirely discounted, it seems most improbable that there will be a drastic enough alteration to invalidate any conclusions which might be now drawn employing the crash rate data currently at hand. In this regard, it should be noted that neither the staff nor the applicants have based their analysis on crash data for a single year; rather they have employed data covering an extended period (twenty-two years in the case of the staff). During that period, there were several ebbs and flows in the number of crashes per annum; but the trend was in the direction of a reduction in the crash rate.

b. Despite the existing uncertainty regarding the future of TMI-2, we see a clear advantage to both the public interest and that of the litigants in not

⁷ More than four years after the issuance of ALAB-277, the *Douglas Point* applicant still has not indicated an intention to go forward with plant construction if authorized to do so.

awaiting the resolution of that uncertainty before going ahead with the hearing. To begin with, the applicants are fully justified in their concern that an appreciable further scheduling delay might threaten the continued availability (or dim the recollection) of the witnesses and counsel who have been actively involved in the exploration of the aircraft crash probability issue. Moreover, they are also correct in their suggestion that, although that exploration is being conducted in the context of a particular reactor site, some generic implications may well attend upon our decision. This is because, in reaching that decision, we necessarily must pass upon the validity of the methodology employed by the staff and applicants in performing their probabilistic analyses—methodology which, to a large extent at least, is apt to be utilized in connection with probability assessments made for the purposes of other reactors located at different sites.

Beyond those considerations, we cannot overlook the observation of the intervenors that the precise issue at hand is equally applicable to the adjacent Unit No. 1. It is true, of course, that we have only Unit No. 2 before us; therefore, any conclusions which we might reach in this proceeding would not directly govern future licensing action taken in regard to Unit No. 1. Nonetheless, without pausing to canvass the intricacies of the doctrine of collateral estoppel, we can note the possibility that those conclusions (and the evidence on which they are based) might have some usefulness should the aircraft crash probability issue be later litigated with respect to Unit No. 1—either in the now-commenced adjudicatory proceeding addressed to the restart of that unit or in some other proceeding.

c. So long as a conflict with either the EPICOR-II hearing (if one is held) or the *TMI-1* restart hearing is avoided, we see no overriding prejudice to the litigants which might stem from now rescheduling our hearing. The affirmative evidence of the parties is on file and it seems unlikely that it will have to be up-dated or altered to an appreciable (if any) extent.⁸ Nor does it appear that an inordinate amount of time will be required to prepare for the hearing itself—which should not consume more than one day. In short, we think that, on balance, the benefits which might inure from going forward with the hearing in the relatively near future clearly prevail.

d. In addition to the aircraft crash probability issue, we have pending in this proceeding (and a number of others as well) the generic question of the environmental effect of radon releases associated with the mining and milling of uranium. Several weeks ago, we announced that the radon issue would be heard in four consolidated proceedings (including this one) beginning on February 25, 1980. See *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-566, 10 NRC 527 (October 11,

⁸ In this connection, the hearing will, as it must, be confined to the question of *heavy* aircraft crash probability. At this juncture at least, this Board lacks jurisdiction to act upon the intervenors' suggestion that the issue be broadened to encompass lighter aircraft as well. See *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2); ALAB-551, 9 NRC 704 (June 26, 1979).

1979). The location was left undetermined; we did indicate, however, that (notwithstanding the preference of the intervenors for either Harrisburg or central New York State⁹) we were then inclined to hold the hearing in Bethesda, Maryland. *Id.* at pp. 530-531.

All things considered, we perceive no good reason why we should not synchronize the scheduling of the hearing on the remainder of the aircraft crash probability issue with the hearing on the radon issue. It is a virtual certainty that no conflict with any EPICOR-II hearing would arise; if that matter is heard, it assuredly will be considerably earlier than the end of February. And, on the basis of informal consultation with the Chairman of the Licensing Board assigned to preside over the special *TMI-1* restart proceeding, we are equally persuaded that there is little chance of a conflict with that proceeding. On the other hand, hearing the two issues together (one after the other) should reduce the inconvenience that those individuals representing the *TMI-2* parties might experience were the issues to be heard at different times and places. Additionally, the interval between now and February 25 should provide the parties with a sufficient opportunity to arrange for the appearance of their witnesses on the crash probability issue and to decide whether to supplement their affirmative evidence now on file.¹⁰

The hearing will be conducted somewhere in the Harrisburg area. While, as previously noted, any hearing confined to the radon issue likely would have been held in Bethesda, there is manifest cause why we should bring to an end—just as we commenced—the taking of evidence on the aircraft crash probability issue at a location in the vicinity of the TMI site.¹¹

⁹ One of the four proceedings involves a proposed reactor (Sterling) which would be sited near Oswego, New York. The other three proceedings all involve facilities in either Pennsylvania or New Jersey.

¹⁰ We do not mean to imply that such supplementation is necessary. Any additional affirmative evidence which a party deems warranted should be filed and served by no later than February 4, 1980.

¹¹ In ALAB-566, *supra*, we stressed that the principal factors underlying the policy of holding most evidentiary hearings close to reactor site were absent in the case of the hearing on the radon issue:

This hearing encompasses four distinct, geographically separated, facilities and no relationship exists between the highly technical questions to be heard and the particular features of any of those facilities or its site. Indeed, generic matters of this stripe customarily would be considered in a rule-making proceeding, more likely than not convened without reference to the sites of one or another of the reactors which might be affected by the outcome of the proceeding. By contrast, the usual adjudicatory proceeding involves one facility alone and calls for the resolution of at least some plant-specific issues which are likely to be of substantial interest to persons residing in the area.

10 NRC at 531. But those factors are present insofar as the aircraft crash probability issue is concerned. For that reason, the hearing last December was held in Harrisburg and, as earlier noted, the further hearing would likewise have taken place in that city had it not been postponed.

This leaves remaining only the question of the order in which the issues will be considered. Although seemingly not a matter of great consequence, we have decided to hear the remainder of the aircraft crash probability issue first. Once again, it is our expectation that this issue will be completed in one day. Accordingly, the parties should insure the availability of their witnesses on the radon issue on the following morning, February 26.¹²

For the foregoing reasons, the postponed further hearing on the aircraft crash probability issue is hereby rescheduled for 9:00 a.m., on *Monday, February 25, 1980*. The precise location in the Harrisburg, Pennsylvania, area will be announced in a later order.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹² A separate order will be entered shortly in the several consolidated radon proceedings memorializing the fact that the hearing on the radon issue will commence on February 26 rather than on the 25th and be held in the vicinity of Harrisburg.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman

In the Matter of

**WASHINGTON PUBLIC POWER
SUPPLY SYSTEM**

Docket No. 50-397 OL

(WPPSS Nuclear Project No. 2)

November 14, 1979

The Appeal Panel Chairman issues a memorandum explaining the applicable standard for deciding whether to convene an Appeal Board in a particular proceeding.

APPEAL BOARD: SCOPE OF REVIEW

Under settled practice, the Appeal Board does not review on its own initiative orders granting or denying intervention.

APPEAL BOARD: SCOPE OF REVIEW

An Appeal Board's review *sua sponte* of Licensing Board action is normally confined to substantive issues of public health and safety or environmental impact.

APPEAL BOARD: SCOPE OF REVIEW

Appeal Board review will be routinely undertaken of any final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues.

MEMORANDUM

On July 11, 1978, the Commission issued a notice of opportunity for hearing on the application of the Washington Public Power Supply System for a license to operate its WPPSS Nuclear Project No. 2, a boiling water reactor located on the Hanford Reservation in Benton County, Washington. 43 *Fed. Reg.* 32338 (July 26, 1978). Within the time specified by the notice for doing so, a petition for leave to intervene was filed by Susan M. Garrett and Helen Vozenilek, on their own behalf and as representatives of the Hanford Conversion Project. Subsequently, an amended petition was filed on the same basis by Ms. Garrett and Creg Darby. Still later, amendments to that petition were tendered.

On March 6, 1979, following a prehearing conference convened to consider the petition, the Licensing Board entered an order denying intervention. LBP-79-7, 9 NRC 330. No appeal was taken from that order¹ and accordingly, on October 9, 1979, the Board issued a notice dismissing the proceeding.

A. It is readily apparent that there is no occasion to establish an appeal board to scrutinize the action taken by the Licensing Board. The petitioners might have prosecuted an appeal from the denial of intervention but elected not to do so. Under settled practice, we do not review on our own initiative orders granting or denying intervention. If those affected do not deem themselves sufficiently aggrieved to appeal, there is no reason why we should concern ourselves with the matter.² And, when the only intervention petition filed was denied, there was no need or authority to commence an adjudication of the merits of the operating license application.³

In short, in the absence of an appeal from the denial of intervention, the Licensing Board's course was mandated: the termination of the proceeding without passing any judgment on the WPPSS application. Whether that application should be granted, and if so on what terms or conditions, has now become a matter for determination—outside of the adjudicatory process—by the Director of Nuclear Reactor Regulation, applying the standards set forth in 10 CFR 50.57(a).⁴

B. The matter well might be left at that were it not for recent developments in the proceeding instituted some years ago with respect to the Monticello facility.⁵ In an order entered on October 25, 1979, the Licensing Board dismissed that proceeding with the consent of all of the still remaining parties to it. On October 29, an Appeal Board was established for the proceeding. That Board promptly issued an order in which it announced its intention to review the dismissal *sua sponte*. In the circumstances, there is warrant for

¹ As an exception to the general proscription against interlocutory appeals (see 10 CFR 2.730(f)), 10 CFR 2.714a authorizes an immediate appeal from, *inter alia*, “[a]n order wholly denying a petition for leave to intervene and/or request for a hearing.” The notice of appeal and supporting brief must be filed within ten days after service of the order.

² By the same token, we will not normally review, in the absence of an appeal, alleged procedural irregularities (*Boston Edison Company* (Pilgrim Nuclear Power Station, Unit 1), ALAB-231, 8 AEC 633, 634 (1974)); a licensing board holding that certain contentions in an intervention petition are not to be admitted to the proceeding (*Louisiana Power and Light Company* (Waterford Steam Electric Station, Unit 3), ALAB-242, 8 AEC 847, 848 (1974)); or the resolution of purely economic issues posed in an antitrust proceeding (*id.*, ALAB-258, 1 NRC 45, 48 fn. 6 (1975)). In other words, an appeal board's review *sua sponte* of licensing board action is confined to substantive issues of public health and safety or environmental impact.

³ In contrast, where a construction permit application is involved, adjudication is required whether or not there are successful petitions for intervention.

⁴ *Section 50.57(a)* requires a number of findings to be made prior to the issuance of an operating license; e.g., that there is “reasonable assurance” that “the activities authorized by the operating license can be conducted without endangering the health and safety of the public.”

⁵ *Northern States Power Company* (Monticello Nuclear Generating Station, Unit 1), Docket No. 50-263.

some explanation of the divergent treatment given the two dismissal orders. That explanation is to be found in the disparate history of the *WPPSS* and *Monticello* proceedings, as well as in the marked difference in the circumstances of the dismissal orders entered below.

1. As has been seen, the *WPPSS* proceeding never got beyond the stage of a petition for intervention; that that petition turned out to be unsuccessful provided all the justification required (or assigned) for the dismissal. Not so in the case of *Monticello*.

Since 1971, the Monticello facility has possessed a provisional license allowing full-power operation. See 4 AEC 496. In May 1972, the Commission⁶ entered an order in which it (1) granted a request⁷ that a hearing be conducted under then Section E of Appendix D to 10 CFR Part 50 for the purpose of determining whether the license should be suspended, in whole or in part, pending completion of the NEPA environmental review required by Section B of the Appendix⁸; and (2) directed the consolidation of that hearing with any hearing which might be held with regard to the issuance of a full-term operating license. 4 AEC 830. In December of that year, the Commission granted several intervention petitions filed in response to a notice of opportunity for hearing in connection with the full-term operating license application CLI-72-31, 5 AEC 25.⁹ Simultaneously, it issued a notice of hearing. As later modified, the notice stated that the hearing would consider "(1) whether, considering those matters covered by Appendix D to 10 CFR Part 50, the provisional operating license should be continued, modified, terminated or appropriately conditioned to protect environmental values, and (2) whether, in accordance with . . . the Commission's [environmental and safety] regulations . . . , a full-term operating license should issue." See 37 *Fed. Reg.* 28554 (December 7, 1972); 38 *Fed. Reg.* 2489 (January 26, 1973).¹⁰

⁶ As applied to the period prior to January 19, 1975, the term "Commission" refers to our predecessor, the Atomic Energy Commission.

⁷ Filed by the Minnesota Environmental Control Citizen's Association (MECCA).

⁸ As revised in September 1971 to take into account *Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109 (1971), Appendix D constituted the Commission's "interim statement of general policy and procedure" in the implementation of NEPA. See 36 *Fed. Reg.* 18071 (September 9, 1971). Section B was specifically concerned with the environmental review of nuclear power facilities, such as Monticello, which has been issued construction permits or operating licenses between January 1, 1970 and September 9, 1971.

Since 1974, the "Licensing and Regulatory Policy and Procedures for Environmental Protection" have been set forth in 10 CFR Part 51. See 39 *Fed. Reg.* 26279 (July 18, 1974).

⁹ As recited in the Commission's order, those intervention petitions had been filed by MECCA (see fn. 7, *supra*), two members of that organization in their individual capacity, another individual, a state agency and a municipality.

¹⁰ The notice referred specifically both to the Commission's environmental regulations and to 10 CFR 50.57. As previously noted (fn. 4, *supra*), Section 50.57 is addressed to, *inter alia*, the health and safety aspects of reactor operation. Thus, under the terms of the notice, the hearing was to embrace both environmental and safety matters.

During the ensuing years, the *Monticello* proceeding moved forward at a rather leisurely pace—with evidentiary hearing sessions being conducted only twice (in November 1974 and May 1975). In March 1978, the applicant, the staff, and the intervenor state agency filed a joint motion to terminate the proceeding, grounded upon that intervenor's withdrawal of its remaining contentions. The remaining intervenors¹¹ departed the scene three months later, leaving the proceeding uncontested. And, because a hearing had been ordered in the first instance only because one had been requested,¹² the Licensing Board became free to terminate the proceeding unless it determined that "a serious safety, environmental, or common defense and security matter" existed. 10 CFR 2.760a.

On October 13, 1978, the Board issued a memorandum and order in which it stated that its review of the record had surfaced only "one item of possible concern"; viz., the safety of continued operation of the facility pending full resolution of the problem of anticipated transients without scram (ATWS). The parties were requested to respond in writing to certain questions posed by the Board with regard to that issue.

Both the staff and the applicant submitted responses, following which the former filed a renewed motion to terminate the proceeding. After considering the responses, the Board entered the October 25, 1979 order which, as earlier noted, an appeal board will now review *sua sponte*. In that order, the Board granted the joint motion to terminate, and then dismissed the proceeding. In doing so, the Board made a number of substantive determinations on the ATWS issue—culminating in its ultimate conclusion that "the Monticello plant can continue to operate with acceptably low risks from an ATWS pending implementation of whatever modifications eventually are required by Commission rule."

2. In a nutshell, then, the dismissal of the *Monticello* proceeding (unlike that of the *WPPSS* proceeding) was preceded not merely by the development of an evidentiary record on some matters but, more importantly, by the *Licensing Board's rendition of affirmative findings and conclusions on a specific issue relating to the safety of reactor operation which it thought worthy of its consideration*. And, it is equally manifest that the Board's ultimate decision to bring *Monticello* to a close rested upon those findings and

¹¹ The intervenor municipality withdrew in 1976.

¹² With regard to facilities subject to the provisions of Section B of Appendix D to 10 CFR Part 50, a hearing in connection with the environmental review called for by that Section was mandatory only where a construction permit was involved. In circumstances where the facility had received an operating license between January 1, 1970, and September 9, 1971 (see fn. 8, *supra*), a hearing was held only if requested. Absent such a request, the AEC Director of Regulation was free to give effect to his own conclusions regarding whether the license should be continued, modified, terminated, or appropriately conditioned to protect environmental values. See Section B.3 of Appendix D. Needless to say, a hearing on the health and safety aspects of the application for a full-term operating license was likewise not mandatory but, rather, depended upon a successful petition for intervention and request for hearing being filed.

conclusions. Put another way, despite the fact that the withdrawal of the contentions of all of the intervenors had left the proceeding uncontested in mid-1978, the Board had declined to act upon the joint motion to terminate pending its receipt of responses to the questions posed by it to the staff and applicant. Specifically, it withheld its grant of the motion until after it had satisfied itself on the basis of those responses that, for the time being at least, the reactor "can continue to operate safely with acceptable low risks from an ATWS" In light of the express terms of 10 CFR 2.760a, it can be scarcely doubted that, given its obvious belief that the ATWS issue constituted "a serious safety . . . matter," the Board was not merely authorized, but obligated, to pursue the course which it did.¹³

Thus, whether the *Monticello* dismissal was right or wrong hinges upon the correctness or incorrectness of determinations made by the Board on a substantial issue thought by it to be important—rather than (as the case in *WPPSS*) upon a mandatory application of the settled principle that, absent a successful petition for intervention and request for hearing, there is *no* adjudicatory consideration of *any* issue pertaining to the issuance of a facility operating license. As such, that dismissal called for the same examination by an appeal board as would be extended to any other final action by a licensing board similarly rooted in the consideration and disposition of safety or environmental questions.

The most cursory analysis suffices to dispel all residual doubt in that regard. Had the ATWS issue been pressed before the *Monticello* Licensing Board by an intervenor, the Board would have been obliged to determine it. And, no matter whether reflected in an initial decision or in an order granting summary disposition under 10 CFR 2.749, that determination then would have been routinely reviewed by an appeal board—on its own initiative were

¹³ An analogous approach by another licensing board recently received our approval. See *Carolina Power and Light Company* (H.B. Robinson, Unit No. 2), ALAB-569, 10 NRC 557, 559 (October 31, 1979). In this regard, it is worthy of mention that the fact that here the submissions of the staff and the applicant were sufficient to alleviate the Board's concern does not mean that the resort to its Section 2.760a authority was improvident. Whether a safety matter is "serious" within the meaning of that Section manifestly is not controlled by whatever ultimate decision may be reached after it receives full exploration.

no appeal taken. As it turned out, of course, it was the Board itself (and not an intervenor) which wished to pursue the issue. But that did not perforce make it—or its resolution—any the less significant.¹⁴ Nor could its importance be said to have been diminished by the additional happenstance that, all of the intervenors having withdrawn from the proceeding, the Board was no longer required to render an initial decision but, instead, could embody its conclusions in a document entitled “Order Dismissing Proceeding.” Indeed, any other conclusion would exalt form over substance.

C. What all of this comes down to is that the decision on whether to convene an appeal board to consider final action by a licensing board in a particular proceeding turns neither on the Board’s label nor on the parties’ agreement. Appeal board review will be routinely undertaken of *any* final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues. It was the application of this standard that led to the establishment of an appeal board for the *Monticello* proceeding but not for WPPSS.

FOR THE APPEAL PANEL CHAIRMAN*

C. Jean Bishop
Secretary to the Appeal Panel

¹⁴ In fact, it might be thought that special significance should attach to issues which a licensing board deems serious enough to justify being examined notwithstanding the absence of any controversy among the parties.

* Because this memorandum is in explanation of action taken by him under his delegated authority to establish appeal boards for particular proceedings (see 10 CFR 2.787(a)), the Appeal Panel Chairman is issuing it on his own. *Cf. Eastern States Petroleum Corp. v. Rogers*, 265 F.2d 593 (D.C. Cir.), *mandamus denied sub nom. Eastern States Petroleum Corp. v. Prettyman*, 361 U.S. 805 (1959). In light of the fact that the memorandum does refer to the October 29, 1979 order entered by the *Monticello* Appeal Board (see p. 689, *supra*) he has, however, consulted with the other members of that Board. Both Dr. Buck and Mr. Farrar have authorized him to note their agreement with the views expressed above and to state that those views underlay their participation in issuing the October 29 order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

**PUGET SOUND POWER AND
LIGHT COMPANY, et al.**

**Docket Nos. STN 50-522
STN 50-523**

**(Skagit Nuclear Power Project,
Units 1 and 2)**

November 20, 1979

The Appeal Board denies intervenor's request for directed certification (and related stay request) of four Licensing Board rulings concerning the conduct of further evidentiary hearings in this construction permit proceeding.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Appeal Board generally will undertake discretionary interlocutory review of a licensing board ruling only where it either (1) threatens the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, cannot be alleviated by a later appeal or (2) affects the basic structure of the proceeding in a pervasive or unusual manner. *Public Service Company of Indiana* (Marble Hill Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

Messrs. F. Theodore Thomsen and Douglas S. Little,
Seattle, Washington, for the applicants, Puget Sound
Power and Light Company, *et al.*

Messrs. Roger M. Leed and Michael W. Gendler,
Seattle, Washington, for the intervenor Skagitonians
Concerned About Nuclear Plants, movants.

Mr. Richard L. Black for the Nuclear Regulatory
Commission staff.

MEMORANDUM AND ORDER

Evidentiary hearings in this construction permit proceeding began some time ago but have not been concluded. The intervenor Skagitonians Concerned About Nuclear Plants (SCANP) has come to us seeking interlocutory review (by way of directed certification¹) of four rulings made by the Licensing Board in setting up further hearings. Collaterally, SCANP is seeking a stay of further Licensing Board proceedings pending our consideration of the grievances it has brought before us.

One of the complaints reflected in SCANP's motion papers is that a Licensing Board scheduling order had allowed SCANP insufficient time to prepare for the geology and seismology portion of the hearing.² Just after we received SCANP's motion, however, supervening developments (see p.696, *infra*) led the Board below to postpone that portion of the hearing.³ SCANP thereupon withdrew its "inadequate preparation time" complaint. The applicants and NRC staff oppose the remainder.⁴

The standard which we apply to requests for discretionary interlocutory review of Licensing Board rulings is a simple one. As we said two and a half years ago,

Almost without exception in recent times, we have undertaken discretionary interlocutory review only where the ruling below either (1) threatened the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by a later appeal or (2) affected the basic structure of the proceeding in a pervasive or unusual manner.

¹ See 10 CFR 2.718(i) and *Public Service Company of New Hampshire* (Seabrook Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

² The Licensing Board's scheduling order, issued on October 1, 1979, had set the hearing to begin on October 25th.

³ See the Board's October 19, 1979 "Reschedule of Hearings" order. Later, and for other reasons, the entire hearing was postponed indefinitely. See the Board's October 23, 1979 "Cancellation of Hearings . . ." order.

⁴ The applicants' and staff's responses were dated November 8th and 13th, respectively.

Public Service Co. of Indiana (Marble Hill Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) (footnote omitted).⁵ Applying that standard here, we find that none of SCANP's three remaining complaints warrants our intercession.

1. Exclusion of Radon Issue

The Licensing Board's October 1st scheduling order indicated that one of the subjects of the late-October hearing would be "Alternate Sources: Coal v. Nuclear (health effects, excluding radon 222)." SCANP read that as eliminating entirely from consideration in the proceeding the question of the releases of radon attributable to the mining and milling of uranium to fuel the Skagit reactors.⁶ But the Board has since spoken further on the matter and in effect confirmed the other parties' understanding that its earlier order was intended to exclude the radon issue only from the particular session of the hearing that was the subject of that order; in other words, that issue was to be taken up later.⁷ That being so, SCANP has no grievance on this score.

2. Seismology Standard

In setting matters related to geology and seismology for hearing, the Board below identified for the parties particular issues on which it wished them to

⁵ In *Marble Hill*, we cited the few then-recent instances in which we had granted requests for discretionary interlocutory review (5 NRC at 1192, fn. 7; see also 5 NRC at 1191, fn. 3, giving a few examples of occasions in which such review was denied). Since then, we have continued to grant such review only sparingly. Thus, while we have denied certification or dismissed interlocutory appeals on fifteen or more occasions, we have conducted discretionary interlocutory review in only the following instances: *Exxon Nuclear Company* (Nuclear Fuel Recovery and Recycling Center), ALAB-425, 6 NRC 199 (1977) (Licensing Board suspension of proceedings); *Consumers Power Company* (Midland Units 1 and 2), ALAB-468, 7 NRC 465 (1978) (misinterpretation of Appeal Board mandate as precluding settlement efforts); *Offshore Power Systems* (Floating Nuclear Plants), ALAB-489, 8 NRC 194 (1978) (appropriateness of setting deadline for staff preparation of Final Environmental Statement; consideration of "Class 9 accidents"), *on reconsideration*, ALAB-500, 8 NRC 323 (1978); *Pacific Gas and Electric Company* (Diablo Canyon Units 1 and 2), ALAB-519, 9 NRC 42 (1979) (subpoena of ACRS consultants). See also *Houston Lighting and Power Company* (Allens Creek Unit 1), ALAB-565, 10 NRC 521 (October 1, 1979) (*sua sponte* review of a matter "central to charting the future course of the proceeding and affect[ing] whether all, or nearly all, of the large number of prospective intervenors and their contentions are dealt with fairly"); *cf. Pacific Gas and Electric Company* (Diablo Canyon Units 1 and 2), ALAB-504, 8 NRC 406 and ALAB-514, 8 NRC 697 (1978) (certification granted after Licensing Board failed to give adequate reasons for finding proffered expert not qualified as such; certification denied after explanation given).

⁶ This subject is, of course, receiving attention from us in a number of pending proceedings and is a fit one for Licensing Board consideration in others. See 43 *Fed. Reg.* 15613, 15615-16 (April 14, 1978); 44 *Fed. Reg.* 45362, 45371, fn. 36 (August 2, 1979) and *Philadelphia Electric Company* (Peach Bottom Units 2 and 3), ALAB-480, 7 NRC 796 (1978); ALAB-509, 8 NRC 679 (1978); ALAB-540, 9 NRC 428 (1979), *reconsideration denied*, ALAB-546, 9 NRC 636 (1979); ALAB-562, 10 NRC 437 (September 10, 1979); and ALAB-566, 10 NRC 527 (October 11, 1979).

⁷ "Ruling on Radon," November 9, 1979; see also the Board's October 19th rescheduling order, para. 4.

focus. October 1, 1979 Order, p. 2, para. 5. SCANP reads the Board's statement of one of the issues as reflecting that the Board is wedded to an incorrect substantive standard which, SCANP fears, will infect the handling and ultimate resolution of these issues.

It is not clear to us that that much should be read into the Board's order. That being so, SCANP's complaint is premature. Geological and seismological issues have proven in other cases to be among the most complicated and difficult that come before us.⁸ Accordingly, we are not of a mind to plunge into them on the basis of the terminology a board uses in setting such issues for hearing, particularly where—as here—that terminology is not necessarily irreconcilable with the governing regulations. Time enough, after all the evidence is in and the Board has written its decision on the merits, to see whether it has applied the correct standard to the facts presented. We certainly cannot predict from its mere statement of issues that the Board will err in this respect; in any event, any error that may occur can be "alleviated by a later appeal." See *Marble Hill, supra*. SCANP's complaint thus does not now warrant our attention.

3. Limitations on Discovery

The final complaint at hand relates to the Board's refusal to sanction certain discovery measures SCANP sought to employ.⁹ That attempted discovery (dealing again with the geological and seismological phase of the hearing) was held to have come too late in terms of a schedule the Board had earlier adopted.

The timing and extent of discovery is an area we are most reluctant to step into on an interlocutory basis.¹⁰ Even had there been some justification for our involvement here—a point we do not reach—it would have been eliminated by recent developments. The Board's schedule governing the timing of discovery was originally geared to matters to be heard at an evidentiary session set for July.¹¹ The seismology portion of that hearing was later set for hearing in October;¹² owing to the disclosure by the United States Geological

⁸ See *Public Service Company of New Hampshire* (Seabrook Units 1 and 2), ALAB-422, 6 NRC 33, 54-65, 111-13 (1977); *Consolidated Edison Company of New York* (Indian Point Units 1, 2 and 3), ALAB-436, 6 NRC 547 (1977); and the dissenting and supplemental majority opinions in both cases, ALAB-561, 10 NRC 410 (September 6, 1979).

⁹ See the Board's order of October 4, 1979, entitled "Objection to SCANP's Discovery Undertaking Sustained."

¹⁰ See *Consumers Power Company* (Midland Units 1 and 2), ALAB-438, 6 NRC 638 (1977); *Pennsylvania Power and Light Company* (Susquehanna Units 1 and 2), ALAB-563, 10 NRC 449 (September 19, 1979).

¹¹ See June 29, 1979 "Order for Evidentiary Hearing and Related Matters," p. 5.

¹² Whether it was ever contemplated that this subject would be heard in July—and thus was to be governed by the discovery schedule—is not clear to us. Compare para. II.C on p. 4 of the Board's June 29th order with pp. 5-6 of that same order; see also Staff Response, p. 15, fn. 6.

Survey of new data (see p. 694, *supra*), it eventually had to be postponed indefinitely—the status in which it still remains. To the extent, then, that the Board’s ruling was premised upon a perceived need to avoid departing from the original discovery schedule lest the October hearing not proceed in timely fashion, there now appears to be room for reconsideration.¹³ In this regard, the staff tells us that it intends to initiate discussions with the Board and the other parties concerning a new discovery schedule.¹⁴ On that basis, we agree with the staff that “this is a matter that can be resolved between the [Licensing] Board and the parties without Appeal Board intervention,”¹⁵ at least at this stage.

For the foregoing reasons, SCANP’s request for directed certification and related relief is *denied*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board.

¹³ The Board based its ruling entirely on the untimeliness ground, stating expressly that it was therefore “refrain[ing] from ruling on the propriety or materiality of individual parts of SCANP’s discovery undertaking.” October 4th order, para. 6.

¹⁴ See Staff Response, p. 15, fn. 6 and accompanying text.

¹⁵ *Ibid.*

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Marshall E. Miller, Esq., Chairman
Dr. Kenneth A. McCollom
Dr. Hugh C. Paxton

In the Matter of

Docket No. 50-344

**PORTLAND GENERAL ELECTRIC
COMPANY, et al.**

(Control Building)

(Trojan Nuclear Plant)

November 30, 1979

Amending its order contained in LBP-78-40 (8 NRC 717, 747-48) allowing interim operation of the plant to commence subject to certain conditions, the Licensing Board bars resumption of operation pending its further order and directs the parties to file certain information with the Board.

**MODIFICATION OF ORDER PERMITTING INTERIM OPERATION
OF TROJAN NUCLEAR PLANT**

By an Order contained in our Partial Initial Decision following evidentiary hearings in Phase I of this proceeding, interim operation of the Trojan Nuclear Plant was permitted subject to certain specified conditions and modifications of Facility Operating License No. NPF-1 (8 NRC 717, at 747-48). Thereafter the Board attempted to establish a schedule for the completion of discovery and other matters leading to the expeditious commencement of an evidentiary hearing on Phase II, dealing with the scope and timeliness of modifications required to bring the Control Building and the facility into substantial compliance with the license, from a safety standpoint.¹

The Board's persistent efforts to conduct an evidentiary hearing on Phase II have been frustrated by the failure of the Staff to complete its Safety Evaluation Report (SER). The Staff, in turn, has attributed its failure to file an SER to the failure of the Licensee to supply in full all information requested by the Staff regarding the proposed modifications to the Control Building (Orders dated September 18, October 11 and October 17, 1979).

¹ See the Board's Orders dated January 30, March 8, April 12, June 5, July 26, August 2, September 18, October 11, and October 17, 1979.

The Board is concerned that there were safety related pipes and corresponding supports and restraints in the Trojan Building complex that were not analyzed to determine whether they were adequate to meet design basis conditions during interim operation. The Board's Partial Initial Decision allowing interim operation assumed that all safety related equipment had been checked to assure its ability to withstand a Safe Shutdown Earthquake (SSE). It is now apparent that this had not been done.

This, in turn, has caused the Board to reevaluate the extended length of time it has taken the Staff to complete the SER on modifications to strengthen the walls in the Control Building. From the weekly reports to the Board, it is very difficult to tell what progress is being made toward completing the SER. Essentially, no quantitative information is being given in these weekly reports.

Although the Board was not directly and clearly so informed by the Licensee or the Staff, it appears that the Trojan facility is presently shut down and is not operating. In response to a telephone call placed by the secretary of the Board chairman to Staff counsel on November 28, 1979, we were informed orally that the Trojan facility has not gone back into operation, that operation would not resume until the Licensee had resolved a problem regarding the ability of certain thin block walls to resist earthquake-generated reaction forces, and that the NRC Division of Inspection and Enforcement will not allow operation until this problem is resolved.

This problem of the adequacy of certain thin block walls (non-shear walls) to resist the earthquake-generated reaction forces from equipment or piping attached to such walls, was first mentioned in a rather limited way in the Staff's weekly report to the Board dated October 26, 1979. The matter was briefly alluded to in Staff reports dated November 9 and 16. However, a Summary of Meeting held on October 26, 1979, prepared on November 8, 1979 by Mr. C. M. Trammell, Project Manager, was received by the Board on November 16, 1979. This summary indicates among other things that on October 12, 1979, the Trojan facility was shut down to repair primary-to-secondary leakage in the A and D steam generators, and to conduct an inspection of piping supports in inaccessible areas as required by IE Bulletin 79-14. There was also some discussion of the problem with certain walls.

A detailed report dated November 13, 1979, entitled Newly Discovered Problems With Reaction Forces On Certain Concrete Block (Non-Shear) Walls at Trojan, was furnished to the Board and parties. At page 4, it was stated:

"In any event, as indicated in the NRC's immediate action letter of October 22, 1979, any necessary investigations and corrective actions must be completed prior to any resumption of operation."

It appears that personnel of the NRC Office of Inspection and Enforcement are performing their responsibilities regarding investigation of the wall problem and corrective action required to resolve it. However, that is not the end of the matter as far as the Licensee is concerned. We regard this Board as having continuing jurisdiction and responsibilities over the Trojan

control building design errors and resulting seismic capability and safety margins. The bifurcation of Phase I and Phase II evidentiary hearings was a matter of convenience in handling different types of issues expeditiously but there was no loss of jurisdiction by the Board between these two phases of evidentiary hearings. Moreover, it was never contemplated that interim operation of the plant would be unduly prolonged before modification plans were completed and submitted to the Staff for safety evaluation, and to the Board for an adjudication of their adequacy from a safety standpoint. Accordingly, it is hereby Ordered as follows:

1. Operation of the Trojan nuclear facility shall not be resumed pending further order of this Licensing Board.
2. The Staff shall immediately inform the Board, explicitly and clearly, what unresolved problems remain which might have a bearing upon the seismic and other issues in this proceeding. This information shall be kept current upon a regular basis.
3. The Licensee shall immediately render a full written report to the Board as to the status of all information requested of it by the Staff and not fully supplied to the Staff's satisfaction. Current and updated information as to the wall problem and any other matters which might affect the issues in this proceeding shall also be furnished upon a regular basis.
4. The Staff shall furnish a date reasonably anticipated for the completion and filing of its SER, and a full justification and explanation for any further slippage in that regard.
5. All parties shall state and document their views as to how long interim operation of the Trojan facility should be permitted, in the absence of the submission of firm plans for control room modifications, adequate from a safety standpoint to bring the facility into substantial compliance with the license.

It is so ordered.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

Marshall E. Miller, Chairman.

Dated at Bethesda, Maryland
this 30th day of November 1979.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al**

**Docket Nos. 50-443
50-444**

**(Seabrook Station, Units
1 and 2)**

10 CFR 2.206

November 16, 1979

The Director of Nuclear Reactor Regulation denies petitions under 10 CFR 2.206 requesting issuance of an order to show cause on the basis of an alleged lack of financial qualifications of the lead applicant and lack of financial qualifications review of potential participants in the Seabrook project.

**TECHNICAL ISSUES DISCUSSED: FINANCIAL
QUALIFICATIONS**

To be financially qualified, the applicant or licensee must show a reasonable assurance of obtaining the necessary funds to pursue the activity for which approval is sought.

**TECHNICAL ISSUES DISCUSSED: FINANCIAL
QUALIFICATIONS**

An applicant or licensee can show a reasonable assurance of obtaining necessary funds by demonstrating a reasonable financing plan in light of relevant circumstances.

**TECHNICAL ISSUES DISCUSSED: FINANCIAL
QUALIFICATIONS**

Anticipated difficulties in raising funds are relevant to the "reasonable assurance" determination, but the showing of some actual or potential difficulty does not necessarily preclude that determination, all other relevant circumstances being taken into account.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated March 12, 1979, the Seacoast Anti-Pollution League (SAPL) requested that the Director of Nuclear Reactor Regulation (NRR) issue an order to show cause why construction permit Nos. CPPR-135 and CPPR-136 for the Seabrook Station should not be suspended or revoked. SAPL bases its request on its assertions that:

- (1) There is a conceded lack of financial qualifications on the part of the lead applicant, Public Service Company of New Hampshire (PSNH or the Company); and
- (2) There is a lack of financial qualifications review of other companies whose participation is being sought by PSNH at this time.

Notice of receipt of SAPL's petition was published in the *Federal Register* 44 Fed. Reg. 20827 (April 6, 1979). On July 30, 1979, the New England Coalition on Nuclear Pollution (NECNP) filed a memorandum joining in support of SAPL's petition. NECNP also alleged that, in light of changed circumstances, "there is no basis for the Commission's finding that it has 'reasonable assurance' that PSNH is financially qualified." SAPL's petition and NECNP's supporting memorandum have been considered under 10 CFR 2.206 of the Commission's regulations.¹

In order to evaluate SAPL's petition and as part of its own review of PSNH's financial qualifications, the NRR Staff on March 21, 1979 requested pursuant to 10 CFR 50.54(f) and Section IV of Appendix C to 10 CFR Part 50 that PSNH provide the staff additional information concerning the ability of PSNH to finance its share of the construction of Seabrook. PSNH answered this request on April 19, 1979. Since making its original request, the NRR Staff has sought additional information from PSNH.²

Under the authority of Section 182(a) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2232(a), the Commission promulgated 10 CFR 50.33(f) and Appendix C to Part 50, its regulations covering financial qualifications requirements for production and utilization facility applicants and licensees. As SAPL and NECNP correctly note, the criteria for a determination as to an applicant's or licensee's financial qualifications to undertake or continue a licensed activity are found in the Commission's decision in *Public Service Company of New Hampshire, et al. (Seabrook Station, Units 1 and 2)*, 7 NRC

¹ In letters dated May 4, 1979 and October 2, 1979, SAPL provided additional argument and information in support of its request to suspend the construction permits. In a letter dated March 26, 1979, the Commonwealth of Massachusetts Attorney General's Office urged the Staff to reinvestigate the financial qualifications of PSNH to build Seabrook.

² The Staff requested additional information from PSNH in letters dated May 23, July 17 and September 25, 1979. PSNH responded to the Staff's requests in letters dated April 27, June 22, August 6, 8, 13, 15, 16, and 20, September 6, 12, 17, and 27, and October 10 and 16, 1979.

I (1978) (hereinafter cited as *Seabrook*).³ The United States Court of Appeals for the First Circuit affirmed the Commission's decision in *New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). The Commission's decision essentially upheld the Staff's application⁴ of the substantive standards contained in 10 CFR 50.33(f) and Appendix C to 10 CFR Part 50⁵ in the Seabrook construction permit proceeding. The Commission had interpreted the reasonable assurance requirements of 10 CFR 50.33(f) to be a demonstration of a reasonable financing plan in light of relevant circumstances.⁶

In applying the Commission's decision in *Seabrook* to the requests of SAPL and NECNP that I issue an order to the licensees and thereby initiate a show cause proceeding to suspend or revoke the construction permits, much of the language in that prior decision in this docket was found directly applicable to the present facts underlying this matter. The controlling standards are discussed, *infra*, as the relevant facts are explored.

This current review of PSNH represents an encore to the most searching analysis ever performed of an applicant's financial qualifications in the history of commercial power reactor licensing.⁷ Now that the former applicants are licensees holding construction permits for Seabrook, I have the task of determining whether PSNH remains financially qualified to proceed with its construction. The lengthy trail of requests, correspondence and other records submitted by SAPL, NECNP, PSNH, and the NRC Staff has served to create a substantial and comprehensive basis upon which to make a determination in this equally complex sequel. In determining whether PSNH has the requisite financial qualifications in accord with the mandate of *Seabrook*, thorough inquiry has been made by the NRC Staff of the relevant financial picture and outlook of PSNH.

³ The Staff acknowledges the Commission's request in *Seabrook*, at 23, that the Staff and the licensee report to the Commission regarding (1) rate orders of the New Hampshire Public Utilities Commission and any resultant changes in PSNH's financial planning, and (2) disposition of the Seabrook ownership interests of Connecticut Light and Power Company (CLP) and United Illuminating Company (UI). PSNH's submittals to the Staff and this decision respond to the Commission's request. As noted in footnote 9, *infra*, the Staff approved the transfer of CLP's ownership interest to other utilities in Amendment No. 1 to Construction Permit Nos. CPPR-135 and 136 (December 27, 1978). The Safety Evaluation Report attached to that amendment addressed the transferees' financial qualifications. In addition, the Staff is currently reviewing the licensee's application for amendments to the construction permits that would authorize a transfer of portions of PSNH's and UI's ownership interests to other utilities. Upon completion of its review, the Staff will issue a Safety Evaluation Report addressing the financial qualifications of the proposed transferees. Any transfer of ownership interest requires a demonstration that a transferee is financially qualified to assume the interest.

⁴ See *Seabrook*, at 17.

⁵ The evolution of the present regulations is discussed in *Seabrook*, at 9-11.

⁶ *Seabrook*, at 18.

⁷ *Seabrook*, at 12.

Key distinctions exist between the current review and its predecessor which led to the Commission's decision. In the earlier review, the primary focus (as to the construction expenditures of Seabrook and its concomitant financing plan) was on future projections in light of relevant circumstances. As the Commission noted,

"[A] 'reasonable assurance' does not mean a demonstration of near certainty that an applicant will never be pressed for funds in the course of construction. It does mean that the applicant must have a reasonable financing plan in the light of relevant circumstances."

• • •

"[A] utility cannot provide more than a reasonable assurance that funds will be available through the course of a multiyear construction project. The number of variables—such as interest rates, the state of the stock and bond markets, the regulatory climate and the cost of fuel—that operate over the period required to construct a nuclear power plant make financial forecasting over a ten-year period uncertain." *Seabrook*, at 18 and 19.

In this respect, the financial qualifications review of an applicant for a construction permit is predominantly forward looking in nature. Even after consideration of the fundamental underlying assumptions to a financial plan—a viable capital market, and for regulated utilities, the continuation of a rational regulatory environment—one can only view a financial plan to be one possible way by which a company's projected capital requirements, including those resulting from the construction of a facility, might reasonably be obtained. The inherent dynamics of both a company's individual finances and the state of the economy as a whole (and particularly its effect upon the electric utility industry) lead one to reasonably expect that a company's financial plans will change over time to accommodate required adjustments. These changes include revisions to the sources of funds, type of security issues (both publicly issued and privately placed), and the timing and amounts of its financing. This is where "relevant circumstances" (as discussed by the Commission in *Seabrook*) come into play, in that they allow the company to depart from the proposed financial plan when reasonable, to conform to changing conditions.

In contrast to the situation prevailing at the time of the former Seabrook review, the licensees are now actively involved in the construction of the facility. Since construction cannot take place without its requisite funding, the licensees have concurrently been engaged in the process of the facility's financing. Since we are here dealing with present conditions, there is very little difficulty in assessing the state of the stock and bond markets, both generally for the electric utility industry, and for PSNH in particular, and in determining the present status of a company's regulatory environment with reasonable confidence.

These factors all directly impact on a licensee's ability to finance the construction of a nuclear facility. Accordingly, even though the dynamics of

finance prevail at any point in time and must therefore be given due consideration, the thrust of this review is oriented towards the Company's present financial resources. In addressing the reasonableness of its financing plan, we must first determine what the relevant circumstances are. The relevant circumstances here are the relationship of the financial plan's underlying assumptions to the combined effect of external conditions and the company's internal financial limitations. The Staff recognizes that these factors and not the Commission's previous determination are the appropriate bases upon which to make a finding on financial qualifications. The Staff believes that this approach satisfies the dictum of the First Circuit of the United States Court of Appeals that "the NRC is not bound by this [the NRC's previous] decision should circumstances change in the future or should predictions not be borne out." *NECNP vs. NRC*, 582 F.2d 87, 93 n.9 (1978). It is in this context that the asserted lack of financial qualifications of PSNH to construct Seabrook as stated in the requests for an order to show cause has been reviewed.

The crucial concern at this time is the ability of PSNH to obtain sufficient funds to meet its share of the construction expenditures of Seabrook. While PSNH has filed a request dated May 16, 1979 for an amendment to its construction permit to allow the transfer of up to 22 percentage points of its ownership to other utilities, review of both that application and the present record shows that PSNH intends to carry its existing 50 percent interest in Seabrook until such time as all requisite regulatory approvals are obtained. At that time, its financing requirements are proposed to be reduced through a deferred payment arrangement from the proposed transferees.

Since no transfer of ownership interest in a licensed facility can take place until the financial qualifications of the transferees are evaluated and found acceptable by the Commission,⁸ this decision focuses on the ability of PSNH to finance its present 50 percent ownership share of Seabrook. All of the minority co-licensees have been approved to own their present respective levels of interest in Seabrook on the basis of their previous affirmative demonstration of financial qualifications.⁹ The Staff is not aware of any material adverse change in any of the minority licensees' financing of their respective shares of the Seabrook construction costs. Moreover, neither SAPL nor NECNP suggest that any one of the existing minority co-licensees

⁸ *Seabrook*, at 22, citing Section 184 of the Atomic Energy Act, as amended, 42 U.S.C. 2234; 10 CFR 50.80.

⁹ Safety Evaluation Report supporting Amendment No. 1 to Construction Permit Nos. CPPR-135 and 136 (December 27, 1978). This approved Connecticut Light and Power Company's request to transfer its former 11.9776 percent ownership interest in the Seabrook Facility, *inter alia*, based upon the favorable demonstration of financial qualifications by the transferees. Order in Massachusetts DPU 19738 and DPU 19743 (June 28, 1979), enclosed with NECNP's July 30, 1979 petition, consolidates and defers decision on the State approval of certain transferee's purchase of this interest. This decision and order essentially requests additional information of the transferees in the meeting of their burden of proof, and has apparently not affected the present financing of the facility.

intends to breach its obligation under the Joint Ownership Agreement to continue financial participation in the Seabrook project. The Staff is presently reviewing the application for amendment to the construction permits to transfer up to 22 percentage points of PSNH's ownership interest. By letter dated October 16, 1979, PSNH notified the Staff that such proposed transfer may be reduced to 12 percentage points and that an extension to the Unit 2 completion date is being contemplated. However, PSNH intends to reoffer the 10 percentage point difference and may ultimately transfer up to 22 percentage points of its interest as originally planned. The Staff will address any such changed circumstances in its forthcoming Safety Evaluation Report (SER) on the requested transfer. The SER will address the financial qualifications of each of the transferees to assume its respective requested increase in ownership interest in the Seabrook facility. As will be shown later, because ample funds are apparently available to maintain the plant's construction, the safety considerations of the proposed transfer are not immediate in time and will be addressed in the SER on the proposed amendment.

Many of the allegations here center at the question of PSNH's financial difficulty. SAPL points to testimony of the Company's officers which essentially states the Company's impending difficulty in financing the plant's construction absent adequate and timely rate relief.¹⁰ SAPL furthermore alleges that these statements on the part of the Company constitute an admission that it is not financially qualified. NECNP focuses upon various statements that the Company has included in its filings with the Securities and Exchange Commission. NECNP believes that these statements place the Company in violation of the NRC's requirement that the Company be financially qualified to construct the licensed facility. PSNH, on the other hand, submits that it can conservatively plan for its financial needs and is, therefore, financially qualified. While such statements may be relevant to reaching a determination as to PSNH's financial qualifications, they cannot be addressed strictly within a vacuum. Our requirements are that the applicant or licensee must show a reasonable assurance of obtaining the necessary funds to pursue the activity for which approval is sought.¹¹ This is accomplished by demonstrating a reasonable financing plan in light of relevant circumstances.¹²

In reviewing the financing plan of an applicant or licensee to determine its reasonableness, it is to be recognized that:

Anticipated difficulties in raising funds are relevant to the reasonable assurance determination, but a showing of some potential difficulty would not necessarily preclude that determination, all other relevant factors being taken into account. *Seabrook*, at 21.

¹⁰ Letters dated March 12, 1979 and October 2, 1979.

¹¹ 10 CFR 50.33(f).

¹² *Seabrook*, at 18.

Consistent with this, the Commission does not require that an applicant's or licensee's financial outlook be rosy. In accordance with the pertinent regulations, the Commission requires only that the licensee demonstrate reasonable assurance of obtaining the necessary funds, even if this is at a high cost.

The petitioners specifically argue that PSNH lacks the requisite financial qualifications because of the likelihood of impending exhaustion of PSNH's bank credits. This argument is amplified by the claim that there is little prospect of the Company obtaining the necessary financing through banks or investors. Although this situation may have been seemingly ominous at one time due to regulatory uncertainty in ratemaking processes affecting the Company, it appears that a series of intervening events have rendered the concerns moot (as discussed below). This review has afforded an opportunity to observe a financing plan in action. It is first appropriate to address the Company's plan and then to evaluate the outcome. This will allow an evaluation of the financing plan under new circumstances in light of the contentions of financial difficulty.

In response to the Staff's request of May 23, 1979, the Company has provided a statement of its "Pro-Forma Sources of Funds" which constitutes a financing plan.¹³ As stated earlier, this projection is not a commitment by the Company to finance the facility's construction as projected, but should be one possible way by which the funds may reasonably be obtained. Analysis of the plan shows that during 1979 PSNH intends to externally finance \$225 million to meet its \$162 million of expenditures attributable to its share of Seabrook construction and \$63 million required for other capital needs. Of the \$225 million, \$79 million was projected to be obtained through the sale of its common stock. The Company also projected \$25 million to be obtained through the issuance of its preferred stock. Finally, the Company states in its plan the expectation of receiving \$93 million from long-term debt and \$28 million from increasing its notes payable (short-term debt). Other documents filed by the Company also indicate that the combination of both a General and Refunding Bond issuance and a nuclear fuel financing arrangement are intended to provide long-term debt proceeds.¹⁴ As these financing arrangements result in obligations having repayment periods in excess of one year, they are appropriately classified as long-term debt.

Since the filing of SAPL's petition, one noteworthy intervening event from the near-term perspective is that PSNH has achieved an expansion of its short-term credit arrangements from approximately \$98.1 million to \$120.35 million. This is a result of both obtaining the necessary regulatory approval¹⁵ to effect a credit expansion and the willingness of banks to assume it. From the viewpoint of the required time for repayment of the credit, the seven

¹³ Submittal of June 22, 1979.

¹⁴ Submittal of August 9, 1979.

¹⁵ NHPUC DF-79-53, Order No. 13,555 (March 29, 1979) submitted under PSNH letter of September 17, 1979.

commercial banks participating in the line of credit have recently agreed to extend the credit maturity date from October 15, 1979 to July 1, 1980. In addition, the same group of commercial banks has extended to the Company a \$25 million term credit due January 3, 1980.¹⁶ These actions demonstrate a continuing capability of the Company to obtain short-term credit. As stated later in this decision, recent events in the Company's long-term financing and rate regulation have apparently provided sufficient assurance to the banks to allow this capability continued existence. Furthermore, there are no present indications that this assurance will not continue to exist.

Even more importantly, the Company has not relied solely on its short-term credit arrangement to finance its external capital requirements for the construction of the facility. This has resulted from the Company periodically revolving outstanding balances in its short-term credit through proceeds derived from four successful public security issuances. These security issuances were projected by the Company in its financing plan submitted to the Staff on June 22, 1979. In January 1979, PSNH obtained \$40 million in proceeds from the issuance of 2 million new shares of its common stock in the primary market.¹⁷ On May 15, 1979, \$30 million was raised by the Company from the issuance of 1.2 million shares of its preferred stock,¹⁸ thereby obtaining \$5 million more than originally anticipated. Similarly, on July 12, 1979, an additional 2 million shares of its common stock were issued in the public securities market, thereby obtaining an additional \$38 million in proceeds.¹⁹ Combined with the \$40 million January offering, the July common stock issuance virtually achieved the Company's prior expectations as stated in its financing plan.

To meet its external capital requirements during the balance of the year, the Company proposed to issue an additional \$50 million dollars in General and Refunding Bonds and to complete negotiation on \$25 million of notes to be secured upon the Company's ownership of nuclear fuel.²⁰ The bond issue was slated for September and the note issuance to be secured on nuclear fuel has been deferred from its originally intended June completion. The General and Refunding indenture (the trustee agreement established between bondholders and the issuer) requires a minimum of two times coverage by net earnings of the annual interest requirements associated with its long-term debt. The Company shows 3.44 times coverage as of April 30, 1979. This being the most restrictive element in the Company's ability to issue General and Refunding Bonds, the indenture coverage allows the Company to issue \$145 million

¹⁶ PSNH Preliminary Prospectus dated September 6, 1979, submitted under PSNH letter of September 12, 1979.

¹⁷ *Id.*, at 10.

¹⁸ *Id.*, at 10.

¹⁹ *Id.*, at 10.

²⁰ Contrary to SAPL's suggestion (October 2, 1979 letter at p. 5), the Company's sale of notes to be secured by a lien on nuclear fuel does not involve the issue of a "significant hazards consideration" under Section 189(a) of the Atomic Energy Act or 10 CFR 50.91, because the creation of such liens does not require a license amendment. See 10 CFR 70.44.

under present circumstances, an amount well in excess of the \$50 million of bonds originally projected to be issued.²¹ From the viewpoint of marketability, these bonds were placed on the public market on September 20, 1979.²² On the next day it was reported that, "Public Service Company of New Hampshire's \$60 million of 12% bonds sold out at a price of 100."²³ This was \$10 million more than initially projected, as noted earlier. In assessing the degree of difficulty this applicant has encountered in financing the facility, we believe it is valid to state that any difficulties which may have been encountered have been effectively dealt with in light of the Company's several successful security issuances and extension and expansion of its short-term credit.

PSNH originally anticipated that it would complete a nuclear fuel financing arrangement with an institutional investor in June. Although the Company did not successfully complete these negotiations, it is currently in negotiation with three other institutional investors for a similar arrangement. In light of the Company's new circumstances, as discussed in this decision, the Staff knows of no reasons why PSNH will not complete a nuclear fuel financing arrangement. However, the Staff again recognizes that the Company is not bound by the Commission's regulations to finance the facility's construction exactly as projected.

Because of the Staff's concern over PSNH's financial qualifications, the Staff exceeded the minimum depth of review imposed by the regulations²⁴ by requiring substantial additional information from PSNH. The Commission's previous opinion of PSNH's financial qualifications in *Seabrook* stated that "the reasonable assurance concept embodied in the regulation is more flexible than many of the Commission's safety criteria."²⁵ Because of the inherent difficulty in resolving what the state of this Company's finances is in relation to the "reasonable assurance" requirement, we have assumed a conservative approach by exacting detailed financial information pursuant to our authority under Section IV of Appendix C to 10 CFR 50 and Section 50.54(f) of 10 CFR 50. We have required projections of considerable specificity and detail, thereby permitting a basis for evaluating item-by-item the reasonableness of the Company's financing plan. As discussed above, PSNH has substantially realized its financial projections through the present time and has thus demonstrated a reasonable assurance of obtaining the requisite funds. Normally, as stated earlier, our determination of a Company's financial qualifications rests predominantly upon its projections. Here, PSNH has supplied such projections which, notwithstanding the assertions of financial difficulty, have ultimately been fulfilled. We know of no more convincing way of demonstrating a reasonable assurance that funds will be obtained. Moreover, no other factor can be more relevant than a company's

²¹ Schedule enclosed under PSNH letter of August 13, 1979.

²² *The Wall Street Journal, Bond Markets* [Column], p. 37, September 20, 1979.

²³ *The Wall Street Journal, Bond Markets* [Column], p. 33, September 21, 1979.

²⁴ See 10 CFR Part 50, Appendix C, "General Information."

²⁵ *Seabrook*, at 9 and 10.

attainment of its financial plan, especially in light of seemingly ominous and unpredictable circumstances. For these reasons and others as stated herein, the Staff has concluded that the Company's financing plan is reasonable, and that it has thus demonstrated its financial qualifications.

An additional point stated by SAPL in its May 4, 1979 letter is that PSNH's financing plan "contains certain predictions of company income before interest charges during the years 1980 through 1985. These 'income before interest charges' figures are uniformly higher than those ever before presented in other Sources of Funds projections." SAPL then alleges that this data is optimistic and unreasonable. After reviewing the initial sources of funds statement, the Staff requested that the Company provide additional details of its financing in a more comprehensive format. This was provided by PSNH in its second response to the NRC staff.²⁶ A later submittal²⁷ by PSNH directly answered the Staff's question regarding the amount of increases projected in the Company's future net income.

The Staff's analysis of this data shows that the projected increases in income are due largely to the inclusion therein of increasing amounts of Allowance for Funds Used During Construction (AFUDC) starting in 1980. This accounting technique is widely used in the utility industry and is the accepted alternative to setting rates based upon the inclusion of Construction Work in Progress (CWIP) in rate base. From the standpoint of financial reporting, AFUDC is properly included in net income on a utility's statement of sources and uses of funds.

The information provided by PSNH indicates that the Company will discontinue basing its rates upon the inclusion of CWIP in rate base starting with 1980 and will begin to accrue corresponding AFUDC dollars to plant under construction. This plan is consistent with New Hampshire Statute RSA 378:30a which disallows the setting of rates based upon inclusion of CWIP in rate base.²⁸ In accordance with this, from 1980 on, AFUDC will be generated on PSNH's investment in Seabrook. Because PSNH will have an increasing investment in plant under construction as the Seabrook project proceeds, it will include larger amounts of AFUDC in income. Accordingly, there is no reason to believe that PSNH's net income projections are optimistic or unreasonable as claimed in the petitions. Instead, the Staff has concluded that both the amounts projected and the accounting treatment afforded to the projections are reasonable.

SAPL moreover contends that "it is not reasonable to assume that the NHPUC will permit rate increases in the near future which will equal or exceed the level of the present revenues attributable to the inclusion of CWIP

²⁶ Dated June 22, 1979.

²⁷ PSNH response dated August 8, 1979 to Question 4 of NRC Staff's request for additional financial information dated July 17, 1979.

²⁸ See Report to NHPUC DR 79-107, Order No. 13, 799, at 8, submitted under letter by PSNH's counsel dated September 17, 1979.

in rate base.”²⁹ From the viewpoint of affecting the facility’s financing, SAPL’s statement challenges a fundamental underlying assumption of the plan - existence of a rational regulatory environment. The Staff recognizes that this assumption is essential to PSNH’s financing plan. However, neither SAPL nor NECNP present any evidence in the petitions to suggest that the New Hampshire Public Utilities Commission (NHPUC) will not allow the Company a return to its equity owners commensurate with returns earned on investments in other enterprises having corresponding risks in order to assure confidence in PSNH’s financial integrity. Moreover, the Staff is not aware of any reason to believe that the NHPUC will not enable the Company to maintain its credit and to attract capital as required by longstanding decisions of the U.S. Supreme Court³⁰ and as followed by New Hampshire State Law.³¹ Indeed, in its Report to Order No. 13, 799 in DR 79-107 dated August 29, 1979, the NHPUC established PSNH’s existing rates (which had been formerly based upon CWIP in the rate base) as temporary rates for the duration of the investigation and hearings associated with PSNH’s most recent rate increase petition. The New Hampshire Commission recognized therein that:

It is sufficient to state that at this early point of investigation that based on information routinely filed with the Commission, PSNH is entitled to an overall rate of return higher than what was allowed in the last proceeding. Report to NHPUC Order No. 13,799 in DR 79-107, p. 19 (August 29, 1979) (PSNH Submittal dated September 17, 1979).

This, coupled with other factors (see *ibid.*), had led the New Hampshire Public Utilities Commission to reevaluate the entire revenue level of PSNH so as to comply with its statutory mandate of setting just and reasonable rates. Moreover, in its Report on its Fourth Supplemental Order No. 13,829 dated September 24, 1979 in DF 79-100-6205,³² the NHPUC reiterated its historical support for the completion of Seabrook and recognized the interrelationship between the size of ownership interest the Company could retain and “projections as to needed revenue” in the forthcoming rate case. This situation leads the Staff to conclude that the underlying assumption to the financing plan of a rational regulatory environment is indeed valid. Accordingly, the Staff finds that there is no merit to the argument that there is little prospect that the NHPUC will provide the Company with needed rate increases. Furthermore, a rational regulatory environment, coupled with both a viable

²⁹ SAPL Letter dated May 4, 1979, at 2.

³⁰ *FPC v. Hope Natural Gas Company*, 320 U.S. 591 (1944), *Bluefield Water Works and Improvement Co. v. Public Service Commission*, 262 U.S. 679 (1923).

³¹ *New England Tel. & Tel. Co. v. State*, 113 N.H. 92, 302 A.2d 814 (1973); *New England Tel. & Tel. Co. v. State*, 104 N.H. 229, 183 A.2d 237 (1962); *Chicopee Mfg. Co. v. Public Serv. Co.*, 98 N.H. 5, 93 A.2d 820 (1953). See N.H. Rev. Stat. §378:7. See also ALAB-422, 6 NRC 33, 77-78 (1977).

³² Enclosure to PSNH’s letter of September 27, 1979.

capital market (the other underlying assumption) and PSNH's reasonable financing plan serves to demonstrate the Company's financial qualifications.

The Staff acknowledges, as the Commission stated in *Seabrook*:

... an applicant could face so much difficulty in obtaining funds that the likelihood of its being able to finance the plant would fall below the level of reasonable assurance. 7 NRC at 21.

For the reasons stated herein, notably (1) PSNH's demonstrably reasonable financing plan, and (2) support historically provided by the NHPUC for construction of the facility, the Staff has determined that such is not the case here.

PSNH has provided a reasonable plan for financing its continuing 50 percent interest in Seabrook. Therefore, in accordance with 10 CFR 50.33(f) and Appendix C of 10 CFR 50, PSNH has demonstrated that it has reasonable assurance of obtaining the funds to finance the licensed activities. In reaching this conclusion, the Staff has taken into account PSNH's current efforts to transfer a portion of its ownership interest to certain other utilities. The Staff is currently reviewing an application for that transfer and will issue a Safety Evaluation Report (which will accompany any approval of such transfer) addressing the financial qualifications of those utilities to assume their respective requested amounts of ownership interest in the facility.

Consequently, I conclude that PSNH is financially qualified to the extent of its 50 percent ownership interest to design and construct Seabrook Unit Nos. 1 and 2, including related initial fuel cycle costs, under the provisions of the above regulations. Accordingly, based on the foregoing discussion and the provisions of 10 CFR 2.206, I have determined not to issue an Order to Show Cause to PSNH concerning its financial qualifications. The requests of both the Seacoast Anti-Pollution League and the New England Coalition on Nuclear Pollution are hereby denied.³³

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and the Local Public Library, Front Street, Exeter, New Hampshire. Additionally, a copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

³³ This decision does not dispose of matters raised in SAPL's petition of May 2, 1979 and the remaining matters in NECNP's petition concerning consideration of Class 9 accidents and feasibility of evacuation of the area beyond the Low Population Zone. These matters are still before the Staff for appropriate action under 10 CFR 2.206.

As provided in 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated At Bethesda, Maryland.
This 16th Day of November 1979

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**PUBLIC SERVICE COMPANY
OF INDIANA, INC.**

**Docket Nos. STN 50-546
STN 50-547**

**WABASH VALLEY POWER
ASSOCIATION, INC.**

**(10 CFR 2.206)
November 27, 1979**

**(Marble Hill Nuclear Generating
Station, Units 1 and 2)**

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 which requested suspension or revocation of the construction permits for the Marble Hill Station and reopening of safety hearings on the facility. A portion of the petition had been granted earlier to the extent that an Order of August 15, 1979, encompassed the relief sought by the petitioner.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

A petitioner under 10 CFR 2.206 must specify the relief requested and set forth facts that provide a basis for the request.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

The factual basis of a petition under 10 CFR 2.206 should identify new information regarding issues raised in the petition and such information should identify a significant unresolved safety issue or a major change in facts material to the resolution of significant environmental issues.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

A petitioner under 10 CFR 2.206 should specify a nexus between the issues raised and the facility with respect to which the petitioner requests relief.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

In the absence of some special circumstances, the Director of Nuclear Reactor Regulation will generally not upset the Commission's usual two-stage

licensing process by instituting a proceeding prior to the operating license phase to consider issues that are properly within the scope of the operating license review.

**NEPA: SCOPE OF INFORMATION REQUIRED FOR LICENSING
(CLASS 9 ACCIDENTS)**

As set forth in the proposed annex to former Appendix D to 10 CFR Part 50, the Commission's current policy does not require consideration of Class 9 accidents for power reactors that are covered by the proposed annex.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

10 CFR 2.206 should not be used as a mechanism to circumvent an existing forum in which issues should be more logically presented or as a vehicle to reconsider issues already decided.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letters dated June 29, July 27, and September 4, 1979, Mr. John A. Eyed, President, Sassafras Audubon Society (SAS), petitioned the Director of Nuclear Reactor Regulation pursuant to 10 CFR 2.206 to suspend or revoke the construction permits for the Marble Hill Station and reopen safety hearings on said facility.¹ Notice of receipt of the SAS petition was published in the *Federal Register* on August 22, 1979 (44 FR 49320).

The SAS petition of July 27, 1979 and the first issue of the SAS petition of June 29, 1979 were granted in a letter to Mr. Eyed dated August 15, 1979, insofar as the Order attached to that letter encompassed the relief sought. The remaining seven issues from the June 29th petition and the three issues from the September 4th petition are addressed herein. For the reasons stated in this decision, SAS's petition based on these other matters is denied.

Before examining the specific issues raised by SAS in its petition, it is appropriate to review the criteria used to evaluate requests for an action under

¹ SAS has requested the Director himself to reopen the safety hearings. The Director, however, does not have the power to reconstitute the Licensing Board or Appeal Board to conduct further proceedings on the matters which SAS raises. The Director could recommend to the Commission that the hearings be reopened or the Director could issue an Order based on the matters raised by SAS under which interested persons may have a right to request a hearing.

10 CFR 2.206. Petitioners shall specify the action requested and set forth the facts that constitute the basis for the request.² The factual basis of the petition should identify new information regarding the issue under consideration,³ and that new information should identify a significant unresolved safety issue or a major change in facts material to the resolution of major environmental issues.⁴ The petitioner should also specify a nexus between the issues raised and the facility with respect to which the petitioner requests relief.

For the most part, SAS raises issues which would be considered as part of the Staff's review of the Licensee's application for operating licenses. In point of fact, SAS asks the Director to institute a proceeding on the basis of its objections to portions of the Licensee's submittals in its application for operating licenses. Although the Licensee tendered its application for an operating license on June 1, 1979, the application has not as yet been reviewed by the NRC Staff for purposes of docketing. The Staff does not expect to begin this review until 1980. After the application is docketed, a notice of opportunity for hearing will be published in the *Federal Register*. 10 CFR 2.105. At that time, interested persons may seek a hearing on the proposed issuance of the operating licenses. 10 CFR 2.714⁵ Such issues as SAS raises in its petition may be litigated as appropriate in any hearing that may be held on the operating licenses.

² 10 CFR 2.206(a).

³ The Commission has stated that, "(P)arties must be prevented from using 10 CFR 2.206 procedures as a vehicle for reconsideration of issues previously decided . . ." *Consolidated Edison Company* (Indian Point Units 1-3), CLI-75-8, 2 NRC 173, 177 (1975).

⁴ See Director's Decisions under 10 CFR 2.206 in *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-10, 10 NRC 129 (July 6, 1979) (Docket Nos. STN 50-546 and STN 50-547); *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582 (Apr. 13, 1979) (Docket Nos. 50-424 and 50-425). In this respect, the Director has generally followed the Appeal Board's standard for reopening the record in a proceeding. See *Cleveland Elec. Illuminating Company* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741 (1977); *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358 (1973).

⁵ The Staff notes that SAS was a party to the construction permit proceeding, although the Licensing Board eventually dismissed SAS as a party for SAS' failure to participate in the proceeding. LBP-77-22, 6 NRC 294, 301 (1977).

Although SAS seeks to be heard at a “meaningful stage in the licensing process” on the issues SAS raises before the Director in its petition, SAS does not provide a convincing rationale for holding a hearing prior to the operating license review. The mere fact that SAS or members of the public are newly interested in matters concerning Marble Hill because of recent construction problems at the site does not in itself establish a basis for taking the extraordinary step of ordering a hearing prior to the initiation of proceedings on the issuance of operating licenses. As the District of Columbia Circuit Court of Appeals recently recognized, even the existence of an unresolved safety question between the construction permit stage and the operating license stage does not mandate institution of proceedings to consider such issues:

In the case of a construction permit for a nuclear power plant, however, permitting continued construction of the plant despite unresolved safety questions does not of itself pose any danger to the public health and safety. Before the license is granted to operate the plant there will be adjudication proceedings. Any interested party may request a hearing. In such an operating license proceeding unresolved safety questions will be considered. A positive finding of reasonable assurance of safety is a prerequisite to issuance of the operating license.” *Porter County Chapter of the Izaak Walton League v. NRC*, No. 78-1556, Slip Op. at 12 (D. C. Cir., Sept. 6, 1979).

Therefore, in the absence of some special circumstances, I would ordinarily find no basis to upset the Commission’s usual two-stage licensing process and institute a proceeding prior to the operating license stage to consider issues that are properly within the scope of the operating license review.

Each of the issues SAS raises is addressed in the remainder of this Decision. In light of the opportunity for hearing concerning issuance of operating licenses for the Marble Hill Station that will be noticed after the application is docketed, none of the issues that SAS raises warrants action by the Director to institute a proceeding at this time.

Marble Hill’s Potential for a Class 9 Accident

Under this general rubric, SAS raises three separate matters as a basis for reopening hearings on the Marble Hill facility. First, SAS refers to a 10 CFR 2.206 petition submitted by Save the Valley - Save Marble Hill (STV), which alleged that WASH-1400 was a “fundamental determinant” in the granting of the construction permits for Marble Hill. Because WASH-1400 was not a “fundamental determinant” in either the record on radiological health and safety matters or in the environmental record that led to issuance of the

construction permits, STV's petition was denied in my decision of July 6, 1979⁶ SAS presents no reasons why that decision should be overturned.

Second, SAS requests, without further elaboration, that the NRC reassess Marble Hill "in terms of its potential for a Class 9 accident as well as for an accident(s) that would result in significant release of radiation into the environment, whatever the class of severity," because of the accident at Three Mile Island (TMI). The fact that the Three Mile Island accident occurred does not in itself compel the Commission to consider Class 9 accidents with respect to the Marble Hill facility. The Commission's current policy, as set forth in the proposed Annex to Appendix D to 10 CFR Part 50, 36 Fed. Reg. 22851 (1971), does not require consideration of Class 9 accidents for power reactors, like those being constructed at Marble Hill, that are covered by the Annex.⁷ The NRC staff is preparing recommendations for rulemaking on consideration of Class 9 accidents in NEPA and Safety Reviews. However, until the Commission changes that policy, I find no basis for instituting a proceeding to consider Class 9 accidents at the Marble Hill facility.⁸

Third, SAS requests a hearing to address Category 2, 3, and 4 items.⁹ As I indicated in my decision of July 6, 1979, these items and any new requirements resulting from various TMI investigations will be included in our review of Public Service Company of Indiana's (PSI) application for an operating license.¹⁰ If this application is docketed, a notice of opportunity to request a hearing will be published in the *Federal Register*, and a hearing to consider specific issues related to these items may be requested at that time.¹¹ Accordingly, I do not find it appropriate to order suspension or revocation of the Marble Hill construction permits for the purpose of instituting a proceeding on these issues at this time.

⁶ This decision is attached to a letter from Harold R. Denton, Director of NRR, to Thomas M. Dattilo, Counsel for STV, dated July 6, 1979. DD-79-10, 10 NRC 129 (July 6, 1979) (Docket Nos. STN 50-546 and STN 50-547). The Commission did not overturn the Director's Decision.

⁷ See *Offshore Power Systems (Floating Nuclear Power Plants)*, ALAB-489, NRC 8 194 (1978). Courts have upheld the Commission's view in this matter. *Hodder v. NRC*, 589 F.2d 1115 (D.C. Cir. 1978), cert. denied, 48 U.S.L.W. 3203 (No. 78-1652, Oct. 1, 1979). *Carolina Environmental Study Group v. United States*, 510 F.2d 796, 798 (D. C. Cir. 1975).

⁸ In its decision in *Offshore Power Systems (Floating Nuclear Power Plants)*, Slip. Op. at 9 (Docket No. STN 50-437, Sept. 14, 1979), the Commission stated that it was not "expressing any views on the question of environmental consideration of Class 9 accidents at land-based reactors."

⁹ These items constitute categories of implementation for new or revised regulatory Guides as determined by the Regulatory Requirements Review Committee.

¹⁰ It should be noted that the Units at the Marble Hill Station will use Westinghouse reactors while the Three Mile Island plant uses a Babcock and Wilcox reactor. Therefore, some of the results and recommendations of the Staff's investigation may not be directly applicable to the Marble Hill Station.

¹¹ See 10 CFR 2.714.

Nuclear Power as an Experimental and Developing Technology

Under this general heading, SAS makes several references to various Board Notifications which were distributed to persons on the Marble Hill service list. Apart from SAS' statement that these notifications "raise questions on safety issues to which we (SAS) seek answers," SAS does not specify why the matters raised in these particular Notifications should be a basis for imposing a further suspension of the Licensee's construction permits to institute a proceeding at this time to consider issues related to these Notifications. To the extent that any of these Notifications are relevant to the Marble Hill facility or indicate that additional requirements should be imposed as conditions of operating licenses, these matters will be included in the Staff's review of PSI's application for operating licenses. As indicated previously in this Decision, SAS will have an opportunity to request a hearing on issuance of the operating licenses at which time, if SAS is admitted to the proceeding, SAS may raise contentions related to matters pertaining to these Notifications. In the interim, the mere fact that a Board Notification has been issued does not in itself provide a basis for instituting a proceeding with respect to a facility in the absence of some special circumstances which might warrant the extraordinary step of instituting a review of these matters prior to the operating license review.

Marble Hill as a High Level Waste Storage Site

SAS alleges that PSI's proposed expansion of storage capacity for the Marble Hill spent fuel pool provides a further basis for instituting a proceeding on the Marble Hill construction permits. It asserts that, "The Nuclear Regulatory Commission has specified no maximum period within the effective terms of the operating license for the storage of spent fuel elements in onsite fuel pools." And, "The potential exists . . . for Marble Hill to continue to serve as a high-level waste storage site indefinitely after final shutdown of the reactor." The NRC grants a licensee the right to store spent fuel in an onsite fuel storage pool throughout the duration of the operating license. However, a licensee must remove all radioactive material from the facility prior to termination of the operating license. Therefore, the Marble Hill site will not become a high-level waste storage site after termination of the operating license.

The NRC has issued a notice of proposed rulemaking in the *Federal Register* on storage and disposal of nuclear waste. 44 FR 61372 (October 25, 1979). As stated in the notice:

The purpose of this proceeding is solely to assess generically the degree of assurance now available that radioactive waste can be safely disposed of, to determine when such disposal or off-site storage will be available, and to determine whether radioactive wastes can be safely stored on-site past the expiration of existing facility licenses until off-site disposal or storage is

available. This rulemaking has been initiated in response to the decision of the United States Court of Appeals for the District of Columbia Circuit in *State of Minnesota v. NRC*, Nos. 78-1269 and 78-2032 (May 23, 1979), but it also is a continuation of previous proceedings conducted by the Commission in this area. 42 FR 34391 (July 5, 1977).

PSI's application for an operating license for the Marble Hill Station will be subject to whatever final determinations are reached in this proceeding.

The NRC staff stated in a letter dated September 29, 1978, from Counsel for NRC staff, to Mr. Thomas Dattilo, Counsel for STV, that notice of NRC consideration of an expansion of the spent fuel pool would be given to members of the public. PSI has proposed an expanded spent fuel storage capacity in its application for operating licenses for the Marble Hill Station. The Staff will, therefore, consider PSI's proposal as part of the review of PSI's application for operating licenses. As indicated above, a notice of opportunity for a hearing will be issued after the application for the operating licenses is docketed. Thus, SAS will have an opportunity at that time to request a hearing regarding PSI's proposed expansion of storage capacity in the spent fuel pool. In all events, expansion of the spent fuel pool's storage capacity is dependent on Commission approval prior to spent fuel being stored in an expanded pool at the Marble Hill site. Therefore, this issue does not meet the criteria for action under 10 CFR 2.206.

Decontamination and Decommissioning of Marble Hill

In this portion of the petition, SAS states that, "The NRC should require as a condition of licensing a detailed decommissioning plan plus detailed cost estimates and financial arrangements to assure that the plan would be implemented." The procedure for decommissioning is described in the Marble Hill Final Environmental Statement (p. 10-2), NUREG-0097, dated September 1976. We state in this report that "it is to the applicant's advantage not to foreclose any of the several acceptable options on methods of decommissioning until near the end of useful plant life." Assuming issuance of operating licenses for the facility, the applicant would request termination of these licenses near the end of useful plant life in accordance with 10 CFR Part 50.82 and Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors." This request will contain the specific proposal for decontamination and decommissioning of the facility. If the licensee plans to dismantle the facility or if the proposal involves significant hazards considerations, then a public notice of the proposal will be issued and an opportunity to request a hearing will be provided. In addition, during the operating license review, the Staff will determine if the applicant is financially qualified to decommission the Marble Hill facility at the end of its useful life in accordance with 10 CFR Part 50.33(f) and Appendix C to 10 CFR Part 50. Accordingly, this issue does not constitute sufficient basis to suspend or revoke the Marble Hill CP.

Marble Hill and Radon

As a further basis for its request, SAS raises the issue of reevaluation of radon releases from the nuclear fuel cycle. In view of the fact that the radon issue is still under consideration by the Appeal Board, it is not appropriate to institute another proceeding to consider this same issue. The Commission has previously indicated that 10 CFR 2.206 should not be used as a mechanism to circumvent an existing forum in which issues should be more logically presented. *Consolidated Edison Company* (Indian Point Units 1-3), CLI-75-8, 2 NRC 173, 177 (1975).¹² Therefore, this issue does not provide a proper basis for action under 10 CFR 2.206.

Marble Hill and the ALARA Principle

SAS states, without elaboration, that "not enough attention was paid in the design of currently operating reactors to lower exposures appropriately on an ALARA basis." The Marble Hill design was based on operating experience, was reviewed against ALARA guidance, and met Appendix I to 10 CFR Part 50 at the construction permit stage as stated in the Marble Hill Safety Evaluation Report (NUREG-0115). Our review of the Marble Hill application for operating licenses will also be performed with regard to ALARA principles. SAS will have an opportunity to request a hearing at the operating license stage concerning specific issues related to application of ALARA principles at the Marble Hill facility. The petition does not establish a basis for suspension of the Marble Hill construction permits for purposes of considering ALARA issues at this time.

Conservation "Energy" and Solar Energy as Viable Alternatives

The basis for this issue is the allegation that conservation and solar energy were not considered as viable alternatives to the Marble Hill station. This issue was considered in the construction permit hearings for the Marble Hill station. See *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 & 2), Partial Initial Decision, LBP-77-52, 6 NRC

¹² As indicated in note 5 *supra*, SAS was dismissed as a party from the Marble Hill construction permit proceeding. SAS attempted to reenter the proceeding on the radon issue. Although the Staff opposed the SAS's reentry at will into the proceeding, the Appeal Board has never ruled on the Staff's motion to dismiss SAS from the radon proceeding. If SAS were not permitted to participate in that proceeding, then 10 CFR 2.206 would be the appropriate route for SAS to pursue its claim. In all events, it is not appropriate to institute a proceeding at this time while the radon issue is pending before the Appeal Board. SAS does not raise new information or different aspects of the radon issue in its petition.

294, 306-11, 328-29 (1977), *aff'd*, ALAB-459, 7 NRC 179 (1978). As stated earlier, 10 CFR 2.206 should not be used as a vehicle for reconsideration of issues previously decided. Therefore, this issue does not constitute a proper basis for suspension or revocation of the construction permit.

Siting Criteria

This issue consists of allegations of groundwater problems at the Marble Hill site. The basis for the issue is a reference to an Advisory Committee on Reactor Safeguards (ACRS) meeting of July 12, 1979. The NRC staff has reviewed the transcript of the 231st General Meeting of the ACRS held on July 12, 1979, and found no reference to groundwater problems in that transcript.

Requests for action under 10 CFR 2.206 must “. . . set forth the facts that constitute the basis for the request.” The lack of a factual basis for this issue is grounds for denial. Moreover, groundwater at the Marble Hill site, including possible contamination of the groundwater by postulated accidents, is discussed in Sections 2.4.7, 2.4.8, and 15.4 of the Marble Hill Safety Evaluation Report (NUREG-0115) dated June 1977. This issue was also litigated during the Marble Hill construction permit hearings and the Licensing Board concluded that the analyses of potential groundwater contamination did not preclude acceptability of the site for the Marble Hill facility. Partial Initial Decision, *supra*, 6 NRCat 341. As a result, SAS has not provided a basis for action under 10 CFR 2.206.

Site Evacuation

In this issue SAS requested that, “. . . site evacuation be considered at a full-scale safety hearing on Marble Hill prior to consideration of whether safety-related construction should resume at Marble Hill.” The issue of emergency planning, which includes site evacuation, is evaluated in Section 13.4 of the Marble Hill Safety Evaluation Report. This issue was also litigated during the Marble Hill construction permit hearings on September 30, 1977 (TR. 6403-6490) and the Licensing Board concluded that the applicant's program met the requirements of Appendix E to 10 CFR Part 50. LBP-77-67, 6 NRC 1101, 1122 (1977).

PSI is also required to present its detailed emergency plan in its FSAR, which will be reviewed as part of the Staff's consideration of PSI's application for an operating license. Additional requirements for emergency planning have recently been proposed (44 F.R. 54308, September 19, 1979). Any new requirements on site evacuation resulting from this proposed rule will be included in the staff's review of PSI's application for operating licenses. As indicated previously in this Decision, SAS will have an opportunity to request a hearing on issuance of the operating licenses at which time, if SAS is admitted to the proceeding, SAS may raise contentions related to specific

issues derived from the emergency planning review. Therefore, this issue does not constitute sufficient basis for suspension or revocation of the Marble Hill construction permits.

Need for Power

The basis for this issue is the allegation that the Marble Hill Station is not needed. This issue was litigated at the Marble Hill construction permit hearings. The Licensing Board found that:

Considering the uncertainties attendant to forecasting, the probable reclassification and/or decommissioning of certain older units on PSI's system over the next decade, the substitution of nuclear base-load plants for older fossil plants, and the probable higher-than-average (national) growth rate in PSI's service area, the Board finds that Marble Hill, Units 1 and 2, will be needed in the early to middle 1980's (6 NRC 311).

The Licensing Board also found that:

Based upon the entire record regarding need for power and the available alternatives to the plant, construction of the Marble Hill Nuclear Generating Station is reasonable and prudent to meet the need for electrical power and that the facility, as designed and selected from available alternatives, represents the optimum selection based on overall economic and environmental consideration. The Board further finds that, based on the entire record, the environmental and economic benefits from construction and operation of the facility are greater than the environmental and other costs which will necessarily be incurred (6 NRC 336).

Small variations in need for power and facility costs would not change these conclusions. In addition, any reanalysis of the cost-benefit balance for Marble Hill would have to consider the costs already expended on the facility. Therefore, the SAS allegations of a declining growth rate for electrical consumption and increasing costs of construction are not of the type or substance likely to have an effect on the need for power issue such that relitigation is warranted, even in an operating license proceeding. SAS has not provided a basis for action under 10 CFR 2.206.

CONCLUSION

For the reasons set forth above, the petition of the Sassafras Audubon Society to suspend or revoke the Marble Hill construction permits or to reopen the safety hearings is hereby denied.

A copy of this Decision will be placed in the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C. 20555, and the Local Public Document Room for the Marble Hill Nuclear Generating Station, located at the Madison-Jefferson County Public Library, 420 West Main Street, Madison, Indiana 47250. A copy of this Decision will also be

filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's regulations, this Decision will constitute the final action of the Commission twenty (20) days after the date of issuance, unless the Commission on its own motion institutes a review of this Decision within that time.

Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland,
this 27th day of November, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION
Harold R. Denton, Director

In the Matter of

Docket No. 50-266

WISCONSIN ELECTRIC POWER
COMPANY

(10 CFR 2.206)

(Point Beach Nuclear Plant,
Unit 1)

November 30, 1979

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations requesting entry of an order to prohibit resumed operation of the Point Beach Nuclear Plant pending resolution of matters related to steam generator degradation at the plant.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

In determining the appropriate disposition of a petition under 10 CFR 2.206, the NRC Staff may rely on various sources of relevant information, including statements submitted by the Licensee in response to the petition.

RULES OF PRACTICE: EX PARTE COMMUNICATIONS

Consideration of a petition under 10 CFR 2.206 is not a proceeding within the meaning of section 189a. of the Atomic Energy Act to which the Commission's ex parte rules apply.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

The NRC Staff is not required to institute a proceeding to either investigate allegations of safety concern or determine what actions should be taken in response to issues raised in a 10 CFR 2.206 petition.

ATOMIC ENERGY ACT: RIGHT TO HEARING

A petitioner under 10 CFR 2.206 has no right to a hearing on its petition, because consideration of such a petition is not a proceeding under section 189a. of the Atomic Energy Act to which hearing rights attach.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated November 14, 1979, Wisconsin's Environmental Decade, Inc. (Decade), requested that the Commission enter an order to prohibit the reopening of Wisconsin Electric Power Company's Point Beach Nuclear Power Plant, Unit 1, at the end of the plant's refueling cycle. As the bases of its request, Decade contends essentially that

- (1) Resumed operation of the plant would violate certain limiting conditions for operation and would threaten public health and safety;
- (2) The NRC Staff's proposed bases (NUREG-0523) for continued operation of nuclear power plants experiencing significant steam generator tube degradation are inadequate to protect public health and safety; and
- (3) The Commission's existing regulations, technical specifications, and technical guidance are also inadequate to protect public health and safety.

Specifically, Decade requests that the Commission prevent resumed operation of the Point Beach plant and commence an investigation and hearing on the safety implications of tube degradation at Point Beach.

On November 20, 1979, the Commission formally referred Decade's petition to the Staff for treatment pursuant to 10 CFR 2.206. Representatives of Decade, the NRC Staff, Wisconsin Electric and Westinghouse Electric Corporation met that same day to discuss matters concerning degradation of steam generator tubes at Point Beach. Decade supplemented its November 24th petition with an additional petition dated November 26, 1979, which essentially reiterated the issues and arguments it raised earlier. The licensee submitted on November 27, 1979, a response to Decade's November 14th petition.¹ On November 28, 1979, the Union of Concerned Scientists submitted a statement in support of Decade's petition.

Pursuant to the Commission's request in its referral of Decade's petition to the Staff, the Staff briefed the Commission on November 28, 1979, on the Staff's proposed disposition of Decade's petition. At that meeting, the Staff explained its intention to impose certain new conditions on operation of the

¹ At the Commission meeting, Kathleen Falk, General Counsel to Decade, implied that the licensee's response was an "unauthorized statement" to the Commission in that Decade had not been served with the statement prior to the Commission's meeting. Although 10 CFR 2.206 does not contemplate a formal pleading process, submission by licensees of statements in reply to section 2.206 petitions is certainly permissible in view of the fact that the Commission and the Staff may rely on various relevant sources of information in determining appropriate disposition of a petition under 10 CFR 2.206. *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), CLI-78-7, 7 NRC 429, 432-33 (1978). Moreover, as there is no "proceeding" as defined in Section 189a. of the Atomic Energy Act of 1954, as amended (discussed in text *infra*), there is no adjudication to which the Commission's ex parte rules apply. Thus, there is no merit to Decade's suggestion that the licensee's statement was "unauthorized."

Point Beach plant to which the licensee had agreed and to deny the Decade's petition. The Commission provided Decade and the licensee an opportunity to express their views at the Commission meeting.

The Staff has issued the attached Order that permits resumption of operation of the Point Beach facility under certain conditions to which the licensee has agreed. In the Safety Evaluation Report accompanying the Order, the Staff analyzes the technical issues involved in the degradation of steam generator tubes at Point Beach and provides a basis for imposing the new conditions on operation of the Point Beach facility. In reaching its decision to impose these conditions on operation of Point Beach, the Staff has considered the technical arguments raised by Decade to support suspension of operation. The Staff's response to these arguments is contained in the Safety Evaluation Report. Because the Staff believes that safe operation of the facility can be maintained with implementation of the newly imposed conditions, the Decade's petition is denied.² To the extent that safety concerns at the Point Beach facility have been identified, such concerns have been dealt with in the attached Order and Safety Evaluation Report.³

Decade urges the Commission to commence an adjudicatory hearing for the purposes of investigating the safety problems associated with tube degradation at Point Beach. In its consideration of the matters raised in Decade's petition, the Staff is not required to institute a proceeding to either investigate allegations of safety concern or determine what actions should be taken in response to safety issues raised in a 10 CFR 2.206 petition. As the D.C. Circuit Court of Appeals has stated,

Generally speaking, the law gives agencies wide discretion to determine the means of administration of pertinent regulatory standards, the techniques of interpretation, application, filling in of details, and enforcement. The agency is not bound to launch full-blown proceedings simply because a violation of the statute is claimed. It may properly undertake preliminary inquiries in order to determine whether the claim is substantial enough under the statute to warrant full proceedings. The appropriate agency official has substantial discretion to decline to initiate proceedings based on this review, at least where, as here, he gives reasons for denying or deferring a hearing. The NRC procedure [under 10 CFR 2.206] here accords with these precepts. *Porter County Chapter of the Izaak Walton League v. NRC*, No. 78-1556, Slip Op. at 11 (D.C. Cir., Sept. 11, 1979) (footnote omitted).

² Decade also contends that operation with 10% plugged tubes is a violation of a limiting condition. The limiting conditions of this license do not address percentage of plugged tubes. In any event, under the Order issued this date, operation is permitted with up to 18% plugged tubes.

³ As the Court indicated in *Porter County Chapter of the Izaak Walton League vs. NRC*, No. 78-1556, Slip Op. at 10 (D.C. Cir., Sept. 11, 1979):

The Commission has interpreted Section 2.206 to require issuance of a show cause order when "substantial health or safety issues" have been raised. Consolidated Edison Co., 2 N.R.C. 173, 176 (1975).

Moreover, it is clear that Decade has no right to a hearing on its 10 CFR 2.206 petition. *Illinois v. NRC*, 591 F.2d 12, 13-14 (7th Cir. 1979). In the first instance, consideration of a petition under 10 CFR 2.206 is not in itself a proceeding under section 189a. of the Atomic Energy Act of 1954, as amended, for which a hearing may be required; *i.e.*, consideration of the petition is not a proceeding "for the granting, suspending, revoking, or amending of any license . . ." Section 189a, 42 U.S.C. 2239(a). Furthermore, section 189a. requires the NRC to hold hearings only after a proceeding has begun. As there was no proceeding in this instance and as the Atomic Energy Act contains no provision for a hearing when no proceeding has been initiated under 189a., Decade is clearly not entitled to a hearing on its 10 CFR 2.206 petition. *Illinois v. NRC*, *supra*, 591 F.2d at 14.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, DC 20555 and in the Local Public Document Room at the library of the University of Wisconsin, Stevens Point, Stevens Point, Wisconsin 54481. Additionally, a copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 30th day of November, 1979.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**COMMISSIONERS:**

John F. Ahearn, Chairman
Victor Gillinsky
Richard T. Kennedy
Joseph M. Hendrie
Peter A. Bradford

In the Matter of**NORTHERN INDIANA PUBLIC
SERVICE COMPANY****Docket No. 50-367****(Bailly Generating Station,
Nuclear-1)****December 12, 1979**

The Commission denies petitions requesting that the applicant's proposal to use shorter pilings than originally contemplated for the foundations of the Bailly Generating Station, Nuclear-1, be treated as a request for a construction permit amendment, with an attendant right to a hearing.

ATOMIC ENERGY ACT: CONSTRUCTION PERMIT AMENDMENTS

Where the record indicates that the entire issue of pile design and placement has been left for resolution after the issuance of the construction permit, a decision by the licensee to use shorter pilings than projected at the construction permit hearing does not of itself require a construction permit amendment. This is consistent with the regulatory scheme embodied in 10 CFR 50.35 and upheld by the Supreme Court in *Power Reactor Development Corp. v. International Union of Electrical Workers*, 367 U.S. 396 (1961).

ATOMIC ENERGY ACT: OPERATING LICENSE REVIEW STATE

Under ordinary circumstances, the operating license review stage is the appropriate forum for resolving issues which at the construction permit stage were left for later resolution, or which arose after the issuance of the construction permit.

ATOMIC ENERGY ACT: OPERATING LICENSES

It is a fundamental precept of the Atomic Energy Act that possession of a construction permit is not a guarantee that the licensee will receive an

operating license. The licensee bears the risk that a plant which has received a construction permit may fail to pass muster at the operating license review stage.

MEMORANDUM AND ORDER

In November, 1978, the Commission received two petitions, from the State of Illinois *et al.*¹ and from Local 1010 of the United Steelworkers of America, requesting the institution of a proceeding with respect to the proposal of the Northern Indiana Public Service Company (NIPSCO) to use shorter pilings than originally contemplated for the foundations of the Bailly Generating Station, Nuclear-1, which received its construction permit in 1974.

The petitions recited the following: that NIPSCO, in the application for a construction permit and in the evidentiary hearing that preceded its issuance, committed itself to installing pilings extending either to bedrock or to the glacial till just above bedrock; that NIPSCO's plan, communicated to the NRC staff in March 1978, to install piles extending only to the glacial lacustrine deposits, constituted in law and in fact a request for a construction permit amendment; and that the proposed change, involving significant hazards considerations, required a hearing before such an amendment could be approved, and that pile installation could not legally begin until the completion of judicial review of any approval granted. The petitions acknowledged that the licensee's proposal was still under review by the NRC staff, and that pile installation had been halted since September 1977 at the direction of the NRC. The petitions also asserted that the Commission's staff should not participate in any way as a decisionmaker, owing to its prior "conflicting and partisan roles in connection with Bailly and the subject matter" of the petitions.²

On December 11, 1978, the Commission requested the comments of NIPSCO and the NRC staff on the petitions, in a letter which asked that the submissions address certain specific questions:

1. What representations were made by the licensee with respect to the placement of pilings for the facility in its application for the construction permit and in the hearing record?
2. To what extent is the licensee legally bound by representations made in the application for the construction permit and in the hearing record unless it obtains a construction permit amendment authorizing different construction techniques?
3. Should the licensee's request for staff approval of shorter pilings be treated as a request for a construction permit amendment? What

¹ The other petitioners are the Porter County Chapter of the Izaak Walton League of America, Inc.; Concerned Citizens Against Bailly Nuclear Site; Business and Professional People for the Public Interest; the City of Gary, Indiana; the Lake Michigan Federation; and three named individuals.

² Petitions, p. 1. fn.

standards are applied in determining when a construction permit amendment is required?

4. Does the shorter pilings proposal involve significant hazards considerations? What are the applicable standards in making such a determination?
5. Should a hearing be ordered, either as a matter of right or Commission discretion? If the licensee's request is treated as an application for a construction permit amendment, is the availability of a hearing as of right dependent on a finding of significant hazards?"

The Commission also asked the NRC staff to describe its usual practices where an applicant proposes to deviate from the construction plan described in the application or the hearing record. The petitioners were invited to submit any further discussion of these points they might wish to provide. /

The staff's response stressed the preliminary nature of the design information submitted at the construction permit stage, and the brevity and lack of specificity of the construction permit itself. It noted that the Commission's regulations specifically authorize the issuance of a construction permit even though not all technical information has been supplied. The staff contrasted the preliminary design information supplied at the construction permit stage with the far more detailed review of final design information at the operating license review stage. The staff observed that as neither the Atomic Energy Act nor the Commission's regulations spell out the commitment made by, or the authority granted to, holders of construction permits, design changes proposed after issuance of a construction permit have long been treated on an *ad hoc* basis by licensees and staff. The staff stated that it learns of design changes during construction through formal or informal notification by licensees; through the inspection and enforcement effort; and sometimes only when the facility is ready for operating license review. Depending on the degree of significance, a proposed change may receive detailed staff review, but more commonly, detailed review is deferred to the operating license review stage. Although a sufficiently major change could warrant a construction permit amendment, a review of 88 extant construction permits indicated that none had been amended for a design change, according to the staff's submission. Taken as a whole, the burden of the staff's submission was that the definitive safety review which must take place before the plant can be licensed to operate, and the opportunity for a public hearing at that time, are the principal mechanism for resolving issues, such as this one, which arise in the course of construction.

With regard to the specific issue presented by the licensee's short pilings proposal, the staff noted that while it had yet to find the proposal to be acceptable, the change was not such as to require a construction permit amendment. The licensee, it said, had indicated a "preliminary intent" to drive pilings to bedrock or to glacial till, but the pile design explicitly remained unresolved. The license application stated that "the final choice of the pile type, capacity, and spacing will be determined based upon economic considerations and further design studies," and noted that test piles would be

installed to verify that intended design capacities could be obtained. The staff's safety review recognized the preliminary design of the piles and made no reference to pile length, referring instead to the fact that they were to be "high capacity, non-displacement piles" and were a design item which the staff would follow *after issuance of the construction permit* (emphasis added).³ The only discussion of piles in the hearing record occurred during cross-examination of a NIPSCO consultant, who while indicating that pile design was still undecided, stated that he anticipated that piles would be driven either to bedrock or to glacial till, depending on the results of planned tests.

The staff submission contended that in the context of the two-stage process, too literal an interpretation should not be placed on the provision of the construction permit that states:

This construction permit authorizes the applicant to construct the facility described in the application and the hearing record, in accordance with the principal architectural and engineering criteria and environmental protection commitments set forth therein.⁴

Rather than signifying that the licensee is bound to conform to every statement in the application and the hearing record,⁵ this passage should be understood, according to the staff, to bind the licensee to adhere to the "principal architectural and engineering criteria and environmental protection commitments." Contending that no construction permit amendment is necessary, the staff observed that although case law on the subject was sparse, pertinent decisions of the Licensing and Appeal Boards indicated that the appropriate forum for considering design changes made in the course of construction was the operating license review stage, rather than an interim hearing before a licensing board.

The staff submission conceded that the term "principal architectural and engineering criteria" had never been defined with precision by the Commission. A proposed rule, issued for public comment in 1969, was not approved, because the Commission determined that further refinement and study were necessary.⁶

In general, NIPSCO's submission agreed with that of the staff. It stressed that the record indicated clearly that pilings were an issue to be resolved in the course of construction. Indeed, the tests (involving the driving of test piles) that would permit resolution of the issue could not legally be performed until the construction permit was granted. The short pilings proposal, NIPSCO contended, involved no departure from the principal architectural and

³ Safety Evaluation Report (SER), § 5.5.1.

⁴ Construction Permit No. CPPR-104, paragraph 3C.

⁵ As we explain below, we need not reach today the question of the extent to which a license applicant is bound to representations in the application and the hearing record, since we find that the issue of pilings was left unresolved at the construction permit stage. The Commission has previously emphasized—and underscored with the assessment of civil penalties—the importance it attaches to accuracy in applicants' submissions to NRC. *Virginia Electric and Power Company* (North Anna Power Station, Units 1 and 2), 4 NRC 480, 486 (1976), *affd. sub nom. VEPCO v. NRC*, 571 F.2d 1289 (4th Cir. 1978).

⁶ Proposed rule published April 16, 1969 (34 F.R. 6540); notice of non-adoption published March 31, 1970 (35 F.R. 5317).

engineering criteria, and thus required no construction permit amendment and no hearing as of right. NIPSCO had not made a formal request, pursuant to 10 CFR 50.35(b), for approval of the shorter pilings proposal, and believed it questionable whether, in the absence of such a request, the Commission could on its own determine to issue a construction permit amendment. NIPSCO stressed that in pursuing the short pilings plan, it recognized that it would have to succeed in demonstrating at the operating license review stage that the final design of the plant, and the facility as constructed, satisfied the principal architectural and engineering criteria. NIPSCO contended that for the Commission to order a hearing as a matter of discretion would represent abandonment of the Congressionally mandated two-stage licensing process in favor of a continuous hearing process, thereby placing in doubt the certainly and value of every construction permit.

Our consideration of the petitions, and the submissions of the staff and licensee, led us to two preliminary conclusions. First, the Atomic Energy Act, its legislative history, and the Commission's regulations provided no clear guidance as to the type of design change which would require issuance of a construction permit amendment. Second, the filings before us did not illuminate a crucial question—the significance, from a technical viewpoint, of the proposed use of shorter pilings.

Accordingly, the Commission wrote to Chairman Carbon of the Advisory Committee on Reactor Safeguards, on June 8, 1979. We requested the Committee:

[T]o identify and address the significance (if any) of the engineering and safety issues arising from use of the shorter pilings as opposed to the longer pilings. In particular: (1) is the use of shorter pilings a significant design change from the standpoint of engineering and would it require significant alteration of other aspects of the design of the facility; (2) what difference if any, would there be in the safety of the facility depending on whether longer or shorter pilings are used?"

Chairman Carbon designated a subcommittee of the ACRS to consider these questions. The subcommittee retained consultants with special expertise in the areas under consideration, and on July 9, conducted a public meeting in Portage, Indiana, close to the Bailly site, at which representatives of the parties and members of the public presented views. On July 12, 1979, the subcommittee met in an open session at which Committee members asked numerous questions as to the bases for those findings. The following day, the full Committee met, again in open session, to compose a letter replying to the Commission's June 8 request.

The Committee's letter, dated July 16, 1979, is attached to this Order as Appendix A. It described the data base for the ACRS' judgments regarding the short pilings plan, including:

"Reports on the experience to date relating to the driving of the longer piles to the till or rock, the extensive exploratory driving of the shorter piles into the interbedded sand and clay layer, and the various borings and pile load tests that have been made over the past few years. The Committee

also heard reports on analyses relating to the factors of safety to be provided against various loading combinations and to the expected settlements of the structures supported on piles.”

The Committee stated that it had “identified only two potential safety issues arising from the use of the shorter piles as opposed to the longer piles, and had concluded that neither of these will have any effect on the safety of the facility if the procedures proposed by NIPSCO or required by the NRC Staff are followed.” The first of these related to disturbance of the soil in the interbedded layer in four locations where longer piles were driven by high pressure water jets. There NIPSCO had proposed, and the staff had found acceptable, a plan to densify the softened soil with “compaction piles.” The Committee agreed that this was acceptable, subject to procedures for measuring the extent of the disturbed soil before installing compaction piles; determining that compaction of the disturbed soil is complete after pile installation; and finally testing the compacted soil to verify its capacity to bear loads.

The second of the two issues identified by the ACRS was the potential settlement of the supported structures. The ACRS stated that whereas structures supported by long piles could be expected to settle not at all, the use of shorter pilings could be expected, according to the licensee, to result in settlement of about two inches. The ACRS recommended that the staff view the calculations of the licensee to confirm their accuracy, but concluded that potential settlements would not represent a hazard to the public even if they exceeded current predictions.

The ACRS concluded its letter with a direct response to the questions posed by the Commission, stating its belief that:

1. “The use of shorter piling is not a significant design change from the standpoint of engineering.
2. The use of shorter piling would not require significant alteration of other aspects of the design of the facility.
3. There will be no difference in the safety of the facility depending on whether longer or shorter pilings are used if the matters referred above are treated as now proposed.”

On July 25, 1979, the Commission issued an order inviting any party to provide comments on the ACRS letter. Comments were received from the staff, the licensee, and the petitioners.

The staff and the licensee drew attention to the process by which the ACRS solicited the expert advice of consultants and the views of the parties and the public before reaching its conclusions. Both pointed to the ACRS letter as supporting their view that the short pilings proposal represented no departure from the principal architectural and engineering criteria, and hence required no construction permit amendment.

The petitioners asserted that the ACRS letter did “not provide a meaningful response” to the Commission’s request, as there was nothing which “even purports to provide the reasoning, the basis, the support or the justification” for its “conclusory answers” to the Commission’s specific

questions. The ACRS letter, according to the petitioners, is “simply of no value” in responding to the Commission’s request, and violates the duties of the ACRS as enumerated in *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 US 519, 556 (1978).

It is not necessary to rehearse here each of the petitioners’ objections to the ACRS letter, but some examples may be illustrative. With reference to the ACRS’ approval of the use of compaction piles to densify disturbed soil, petitioners state:

The ACRS conclusion concerning the issue is completely circular and, in effect, no conclusion at all. The ACRS states that it agrees that NIPSCO’s proposal to use “compaction piles” is an acceptable procedure, subject to compliance with four procedures, one of which is compaction of the disturbed material by driving compaction piles. The other three procedures similarly are described in terms of their success.⁷

As is unmistakable from the text of the letter, however, the ACRS was recommending an orderly four-step procedure: first, testing the soil; then installing the compaction piles; then testing the compacted soil; and finally, testing the installed piles’ capacity to bear loads. There is nothing whatsoever about these procedures or the Committee’s description of them that can reasonably be called “circular.”

Again, petitioners contend⁸ that the ACRS should have waited for the submission of the consultants’ written report before writing its letter to the Commission. The ACRS, which meets only once a month, was originally asked by the Commission to submit its views by June 30, 1979. By writing its reply to the Commission on the basis of what it learned from the subcommittee and its consultants in oral presentations, rather than awaiting the reduction of those views to writing,⁹ the Committee avoided an unnecessary delay of a month.

With regard to petitioners’ assertion that the ACRS violated its duties as spelled out in *Vermont Yankee*, reference to the Court’s opinion in that case indicates otherwise:

[T]he legislative history shows that . . . its [the ACRS report’s] main function [was] that of providing technical advice from a body of experts uniquely qualified to provide assistance. [Citations omitted]. The basic information to be conveyed to the public is . . . the ACRS’s position, and reasons therefore, with respect to the safety of a proposed nuclear reactor. Of equal significance is the fact that the ACRS was not obfuscating its findings. 435 U.S. 519, 556.

Here, the ACRS provided its views on the technical issues it was asked to address, and did so with clarity and conciseness. The 120-page transcript of the ACRS meeting on July 12, which petitioners cite numerous times in their

⁷ “Petitioner’s Comments on the ACRS’ July 16, 1979 Letter,” p. 4.

⁸ “Petitioner’s Comments on the ACRS’ July 16, 1979 Letter,” p. 6.

⁹ The consultants’ written statement, which appears as Appendix B to this Order, is fully consistent with their oral report to the ACRS.

comments, contains the fuller explication of the bases for the Committee's judgments.

In short, petitioners' assertions with respect to the ACRS letter do not include, in our view, substantive grounds for faulting its technical judgment. We therefore accept the ACRS's judgment that the proposal to use short pilings is not significant as a matter of engineering and will not require significant alteration of other facility design aspects, and that facility safety is not affected provided that certain measures are followed. The critical question then becomes whether, given this judgment, a construction permit amendment is required. We believe that, for the reasons described below, the answer is no.

The license application indicated that piles would be driven into the glacial till or to bedrock (PSAR Section 2.5.4.3.1), but also repeatedly stressed that final decisions with respect to "pile type, capacity, and spacing" would be determined only after a test pile program and further design studies (Section 2.5.4.3.3). The PSAR makes clear that the objective of pile installation is to assure that the "intended design capacities can be attained by a factor of safety of two. (Section 2.5.4.3.3). In other words, the overriding necessity was that the pilings do the job of supporting the plant, but until test piles were driven—and the applicant could not legally drive test piles until it received its construction permit—the density of the soil layers, their load-bearing capacity, and the optimum design of the foundations could not be fully determined. The staff's Safety Evaluation Report reflects this awareness. It stated simply (at Section 5.5.1) that the design of the foundation was "based on the use of high capacity non-displacement piles," adding, "we will follow this item during construction."

The only discussion of pile depth in the construction permit hearing is particularly instructive. In the following excerpt from the transcript, counsel for the Joint Intervenors (who include some of the petitioners presently before the Commission), cross-examined a consultant to the applicants:

Q. Now, as I understand your testimony, both of these buildings, the containment building and the turbine building, are supported on pilings, is that right?

A. Yes, sir.

Q. And how deep do those pilings go?

A. Well, that would be predicated on a pile test. We anticipate—Dames and Moore might have a little more input on this than I do—that will either be founded in the till directly above the rock or in the bedrock, depending upon the pile test that is run and whether you could actually physically drive piles into the rock. (TR 2141).

In subsequent colloquy, the witness affirmed that the design for the piling had not been determined, and would not be decided on until the results of the pile test had been obtained.

Q. So that the design for the piling has not been determined at this point?

A. Yes, sir, that's correct.

Taken as a whole, this passage in our view emphasizes the very preliminary nature of all aspects of the foundation pilings. The witness' immediate response to the only specific question on pile depth was that it would be determined after a pile test. He added that he "anticipated" that the piles would be driven to bedrock or glacial till. But "anticipation" of what the pile test would indicate with regard to soil density is hardly the same as a commitment to a particular result. This must also be read in conjunction with the fact that the critical issues of pile design and spacing had explicitly been left for later resolution. In our view, a fair reading of the entire record is that the whole issue of pile design—including type of pile, spacing, and depth—was left unresolved at the time of construction permit issuance.

It is worth reiterating that the Commission regulations do not require that every safety-related issue be resolved prior to the issuance of a construction permit. Under 10 CFR 50.35(a), the Commission may issue a construction permit even if full technical information is lacking, provided that: the applicant has described the proposed design of the facility, "including but not limited to, the principal architectural and engineering criteria"; the issue can be left for later resolution, and necessary research and development can and will be conducted; and there is therefore reasonable assurance that the issue will be resolved satisfactorily by the time construction is complete.⁹

This regulation and the approach it embodies were upheld by the Supreme Court in *Power Reactor Development Corp. v. International Union of Electrical Workers*, 367 U.S. 396 (1961). The corollary of this provision is that the grant of a construction permit does not, absent a specific finding by the Commission at the licensee's request, "constitute Commission approval of the safety of any design features or specification." 10 CFR 50.35(b).

The issue of pilings was not contested in the hearing, and there was therefore no occasion for the Licensing Board to specify that this was an issue which was being left for later resolution pursuant to 10 CFR 50.35(a).

⁹ 10 CFR 50.35(a) reads in full:

When an applicant has not supplied initially all of the technical information required to complete the application and support the issuance of a construction permit which approves all proposed design features, the Commission may issue a construction permit if the Commission finds that (1) the applicant has described the proposed design of the facility, including, but not limited to the principal architectural and engineering criteria for the design, and has identified therein the major features or components incorporated therein for the protection of the health and safety of the public; (2) such further technical or design information as may be required to complete the safety analysis, and which can reasonably be left for later consideration, will be supplied in the final safety analysis report; (3) safety features or components, if any, which require research and development have been described by the applicant and the applicant has identified, and there will be conducted, a research and development program reasonably designed to resolve any safety questions associated with such features or components; and that (4) on the basis of the foregoing, there is reasonable assurance that, (i) such safety questions will be satisfactorily resolved at or before the latest date stated in the application for completion of construction of the proposed facility, and (ii) taking into consideration the site criteria contained in Part 100 of this chapter, the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public.

Reference to the regulation is instructive however; in our view, it shows that the present case falls squarely within the category of situations sought to be reached by that regulation. First the “principal architectural and engineering criteria” have been described: the piles are to be “high capacity” and “non-displacement.” Second, the further technical and design information needed to complete the safety analysis can reasonably be left for later consideration: indeed, it can only be resolved after tests for which the licensee must have a construction permit. Third, a research program, involving the sinking of test piles, will be conducted to supply the needed information. Based on all these considerations, we believe that there is reasonable assurance that the outstanding safety questions can be resolved, and resolved early in the construction process. We therefore see no reason to alter our view, reflected in the original issuance of the construction permit, that the facility can be constructed and operated without undue risk to the health and safety of the public. Our conclusion in this regard is in large part grounded on the report of the ACRS.

If the Joint Intervenors had in fact contested the issue of pilings during the hearing, and if the issue had been designated for later resolution under 10 CFR 50.35(a), their first opportunity for a hearing on the merits of the particular pilings design selected by the applicant would indisputably be the hearing available at the operating license review stage. Though the issue was not specifically so designated, we believe that the operating license review is nevertheless the appropriate forum for a hearing on the licensee’s piling proposal.

To recapitulate, we believe that the short pilings plan is less a change from an earlier plan than it is a proposed resolution of an area consciously—and appropriately—left for later determination. As such it requires no construction permit amendment, nor the hearing that is available as of right on construction permit amendments. Our analysis has, however, gone beyond the strictly legal question to the important underlying issue of substance—whether the short pilings plan, because of safety or other issues raised, ought to be the subject of a discretionary hearing at this time.

We resolve that issue in the negative. As we view the Atomic Energy Act, it favors a two-stage process: a mandatory hearing before construction can begin, and a second hearing, available upon request, before the completed plant can be operated. At that second hearing, under ordinary circumstances, are resolved issues which at the construction permit stage were left for later resolution, or which arose after the issuance of the construction permit. As we view the record before us, especially the views of the ACRS, we find nothing to suggest that there would be any benefit in injecting an interim public hearing at this time.

It will undoubtedly be objected that a serious error in the design of the pilings could, as a practical matter, be uncorrectable if detected only after the plant is completed. This may well be so. However, it is a fundamental precept of the Atomic Energy Act, emphasized by the Supreme Court in *Power Reactor*, 367 U.S. 396 *supra*, that possession of a construction permit is not a

guarantee that the licensee will receive an operating license. If the utility's pilings proposal—or any other aspect of the facility—fails to pass muster at the operating review stage, the plant will simply not be allowed to operate. This risk is borne by the licensee. As the D.C. Circuit recently said (in a case involving this same facility and most of the same principals), *Porter County Chapter of the Izaak Walton League v. NRC*, —F.2d—(Sept. 6, 1979):

It is not the public, but the utility, that must bear the risk that safety questions it projects will be resolved in good time, may eventually prove intractable and lead to the denial of the operating license. See p. 740.

In holding that the proper occasion for a hearing on this pilings proposal is at the operating license review stage, we are emphatically *not* saying that the issue of pilings can or will be ignored until that time. As we have seen, the staff is reviewing the issue now and will continue to do so during construction. Should the staff at any point determine, either on its own initiative or in response to a request under 10 CFR 2.206, that substantial health and safety issues have been raised with respect to the activities authorized by the construction permit, it can in its discretion institute proceedings pursuant to 10 CFR 2.202, or order the suspension of construction.

Finally, it should be reiterated that our decision today does not in any sense whatsoever create a risk to public health and safety. As the Court of Appeals observed in *Porter County*, —F.2d—, *supra*:

In the case of a construction permit for a nuclear power plant, however, permitting continued construction of the plant despite unresolved safety questions does not of itself pose any danger to the public health and safety. Before the license is granted to operate the plant there will be adjudication proceedings. Any interested party may request a hearing. In such an operating license proceeding unresolved safety questions will be considered. A positive finding of reasonable assurance of safety is a prerequisite to issuance of the operating license. See p. 740 *supra*.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 12th day of December, 1979.

SEPARATE OPINION OF COMMISSIONER GILINSKY

The Commission has no rule on what design changes require a construction permit amendment to help guide us in deciding whether the shift from long pilings to short pilings in the Bailly design calls for such an amendment. Nor can we be guided by the fact that the Atomic Energy Commission and the NRC have never before required a CP amendment for a design change. This practice followed from a policy which encouraged speedy application of a developing energy technology. Sketchy CP applications were accepted until relatively recently, and permits granted with the understanding that the details would be filled in as the reactor was designed and would be reviewed at the operating license stage. Sixty-four of the 70 power reactors currently operating are in fact licensed not under "Section 103. Commercial Licenses" of the Atomic Energy Act but under "Section 104. Medical Therapy and Research and Development."¹ The latter section, in contrast to Section 103 requires that a "minimum amount of such regulations" is to be applied. We cannot allow the practices developed under this regime to continue to guide this Commission's actions.

An amendment should be required where the applicant proposes to depart significantly from the preliminary design outlined in the construction permit proceeding. The issue is, what constitutes a significant departure? When presented with this case, I suggested to the Commissioners that, because the outcome turns on technical questions regarding which no member of the Commission is expert, we seek the advice of independent experts. The Commission did consult its Advisory Committee on Reactor Safeguards. My own decision in this instance, that no amendment is required, is based upon the ACRS conclusion that "[t]he use of shorter piling is not a significant design change from the standpoint of engineering." (ACRS letter of July 16, 1979.)

Although I have accepted the ACRS's technical advice, I would nonetheless grant a hearing in this case as a matter of discretion. There are no general rules in this area, the questions presented are novel, and it is possible that light would be shed on the issues before us if adverse viewpoints were heard. The issue presented in this case is not trivial. Indeed, as a practical matter, it will be impossible for the Commission to reverse itself after the plant has been built because there will be no way then to extend the piling. To argue, as the majority does, that what is done now is of no ultimate safety significance because it will be reviewed at the operating license stage and that, after all, the applicant bears the risk of being denied an operating license upon completion of construction, is to kid the public. The reality of the licensing process is that once a billion dollar plant has been completed, the possibility of its being abandoned except for the most obvious and egregious defect is exceedingly

¹ A state of affairs that should be corrected by statute and regulation. Reactors which operate as commercial facilities should be licensed as such.

remote. In practice, just as the CP review comes too early where detailed designs are lacking, the OL review is sometimes too late.

Moreover, Section 185 of the Atomic Energy Act provides that, after completion of construction and updating of the information contained in the application, and after finding that the facility was constructed and will operate in conformity with the application, the Commission shall issue an operating license "in the absence of any good cause being shown" for its denial.² To protect ourselves against error in this instance, I would hold a hearing. The precedent would be established that we will proceed cautiously until we have a rule in place.

Finally, I agree with Commissioner Bradford that existing practice with regard to construction permit amendments serves only to confuse the licensee, public, and staff. Indeed, earlier in this proceeding, I recommended to my fellow Commissioners that we immediately initiate a rulemaking to establish general construction permit amendment rules. The Commission did not accept this suggestion. I nonetheless again urge the Commission to begin a rulemaking proceeding. General standards are necessary to the industry, the public and the proper functioning of the Commission.

APPENDIX A

UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D.C. 20555
July 16, 1979

Honorable Joseph M. Hendrie
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: BAILLY GENERATING STATION, NUCLEAR 1

Dear Dr. Hendrie:

During its 231st meeting, July 12-14, 1979, the Advisory Committee on Reactor Safeguards reviewed the design of the pile foundations for the Bailly Generating Station, Nuclear 1, being constructed by the Northern Indiana Public Service Company (NIPSCO). This matter was considered by an ACRS Subcommittee at a meeting held in Portage, Indiana, near the site, on July 9,

² A provision that makes sense where a complete detailed design has been reviewed at the construction permit stage but not otherwise. The law should be changed to reflect this distinction. Alternatively, the Commission must change its practice and require that the bulk of design decisions be made before construction is begun.

1979. During its review, the Committee had the benefit of discussions with representatives and consultants of NIPSCO and of the NRC Staff. The Committee also had the benefit of the documents listed below and of statements received from members of the public.

In your letter dated June 8, 1979, you made the following request:

“The Commission requests the Committee to identify and address the significance (if any) of the engineering and safety issues arising from use of the shorter pilings as opposed to the longer pilings. In particular: (1) is the use of shorter pilings a significant design change from the standpoint of engineering, and would it require significant alteration of other aspects of the design of the facility; (2) what differences, if any, would there be in the safety of the facility depending on whether longer or shorter pilings are used?”

The Committee heard reports on the experience to date relating to the driving of piles at the site, including the exploratory driving of the longer piles to the till or rock, the extensive exploratory driving of the shorter piles into the interbedded sand and clay layer, and the various borings and pile load tests that have been made over the past few years. The Committee also heard reports on analyses relating to the factors of safety to be provided against various loading combinations and to the expected settlements of the structures supported on piles.

The Committee has identified only two potential safety issues arising from the use of the shorter piles as opposed to the longer piles, and has concluded that neither of these will have any effect on the safety of the facility if the procedures proposed by NIPSCO or required by the NRC Staff are followed.

The first of these results from the fact that some of the exploratory longer piles were installed with the aid of high pressure water jets which resulted in disturbance of the soil (chiefly the sand) in the interbedded layer. This disturbance is limited to only a small portion of the foundation area at four locations. Unless remedial measures are taken, the shorter piles driven in these areas might be deficient in load-bearing capacity.

NIPSCO has proposed the use of “compaction piles” in the areas of disturbed soil to densify the disturbed soil so that it will be able to provide support equivalent to that in the other areas. The NRC Staff believes that this procedure is acceptable, and the Committee agrees, subject to compliance with the following procedures:

1. Exploration by borings or by penetration devices to determine the vertical and horizontal extent of the disturbed areas.
2. Compaction of the disturbed material by driving compaction piles.
3. Verification by borings or by penetration devices that all of the disturbed soil has been compacted.

4. Performing a compression load test on at least one production pile in each disturbed area to verify its load-carrying capacity and load-deformation characteristics.

NIPSCO has agreed to these procedures.

The second issue resulting from the use of the shorter piles is the potential settlement of the supported structures. The settlement after construction would have been expected to be essentially zero for the longer pile foundation. For the shorter piles, the settlement has been estimated by NIPSCO to be on the order of two inches. Settlement of this magnitude is not unusual for a nuclear plant and would have no significance to safety. The Committee has recommended to the NRC Staff, however, that the method of calculating the settlement be reviewed to assure that it has been done conservatively.

In addition, NIPSCO has proposed a program to measure settlement at numerous locations on the structures during operation of the plant, and the NRC Staff has stated that such measurements will be required by the Technical Specifications and that suitably conservative limits on permissible settlements will be established. In view of these commitments, the Committee believes that potential settlements, even if greater than those now predicted, would not represent a hazard to the public.

The NRC Staff is continuing its review of the foundation design; and the Committee believes that the remaining foundation-related issues, not related to the use of shorter piles, can be resolved by the Staff.

In direct response to the questions raised by your request, the ACRS believes that:

1. The use of shorter piling is not a significant design change from the standpoint of engineering.
2. The use of shorter piling would not require significant alteration of other aspects of the design of the facility.
3. There will be no difference in the safety of the facility depending on whether longer or shorter pilings are used if the matters referred to above are treated as now proposed.

Sincerely,

Max W. Carbon
Chairman

References:

1. Preliminary Safety Analysis Report on Bailly Generating Station, Nuclear 1.

2. Design Analysis and Installation of Driven H-Piles Foundation, Report SL-3629, submitted on March 8, 1978.
3. NIPSCO's Responses to NRC Staff Questions, submitted on July 14, 1978.
4. Indicator Pile Program, submitted by NIPSCO to NRC on September 26, 1978.
5. Supplementary Information on Driven H-Pile Foundation, NIPSCO, December 4, 1978.
6. Letter, D. B. Vassallo, NRC, to H. P. Lyle, NIPSCO, June 28, 1979.
7. Bailly Generating Station, Nuclear 1 Construction Permit, May 1, 1974.
8. Request by the Porter County Chapter of the Izaak Walton League of America, Inc., February 27, 1979.
9. Letter, E. M. Shorb, NIPSCO, to D. B. Vassallo, NRC, June 29, 1979.

APPENDIX B

July 19, 1979

Mr. R. F. Fraley, Executive Secretary
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: 231st ACRS Committee Meeting: Discussion of BAILLY Piles, July 12, 1979, Washington, D.C., and ACRS Subcommittee Meeting, July 9, 1979, Portage, Indiana.

Dear Mr. Fraley:

In accordance with requests by telephone from Mr. R. Muller of ACRS and with the authorizations for Official Travel, the undersigned visited the BAILLY Site and attended the ACRS Subcommittee Meeting on July 9, and attended the evening portion of the ACRS Committee Meeting on July 12. Previously, we had been sent the Reference Documents (noted at the end of this report) for study.

As a result of our study of documents, and from information obtained at the site and answers to our questions, we presented comments at the ACRS Meeting, July 12, 1979. These comments and additional notes are included in the following paragraphs.

1. We noted that the NRC Staff had not yet completed its analysis of the behavior of piles to the interbedded glacial lacustrine deposit. Therefore our relatively brief study of the problem would contribute to only a few of the topics covered in the NRC Staff's exhaustive study.

2. It was not clear from the documents we studied as to the *amount* of *settlement* which might be developed by compression of the soils between the pile tips and bedrock. Professor Richart suggested that it would be most useful if personnel from Sargent and Lundy and/or Dames and Moore would spend a day with Professor Scott in Pasadena to review and clarify the method of evaluating the settlement below the pile tips. This settlement and the associated deformation of the continuous pile cap mat under the entire facility were also to be discussed.
3. On July 16, 1979, Mr. A. K. Singh from Sargent and Lundy and Mr. Demetrious Koutsoftas from Dames and Moore visited Professor Scott in Pasadena. They discussed methods of calculating the settlements and the values obtained until about 6:00 p.m. At the end of this discussion period Professor Scott was satisfied that the methods of calculation, and selection of soil properties from laboratory and field data, were satisfactory. Following further study alone, Professor Scott concluded that their estimates of settlement were also satisfactory, and that the settlement should not be more than two inches.
4. With adequate design of the piling system, we believe that satisfactory *load-bearing* systems can be developed with piles bearing in the interbedded glacial lacustrine deposit.
5. The soil regions disturbed during previous construction have been termed "Soft Spots." These zones will be identified, recompacted by driving additional displacement piles, and the effectiveness of the recompaction will be verified. We suggested the use of a Dutch Cone Penetrometer as a rapid method for identifying the zone of loose soil at each soft spot and the effectiveness of compaction. The consultants to NIPSCO will look into use of this procedure. There is no major problem in recompacting these soft spots.
6. The new Pile Load Test Program appears satisfactory. We questioned the limiting load of 600 tons and suggested that a number of piles be tested to failure even if the load exceeds 600 tons. This would provide field verification of Dr. Lymon Reese's analytical procedures.
7. We had requested information concerning the combined static and dynamic loads to be developed in the piles. This was given to us at the end of the ACRS Meeting by Sargent and Lundy personnel as copies of Tables 130.4-1 and 130.4-2. Further discussions on the structural integrity of the pile cap-base mat assured us that there can be minimal articulation of the base mat and it must move essentially as a single unit, after appropriate detailed design studies assure continuity of the structure. Thus the base mat motions, during earthquakes, control the loading in each pile, and extreme loadings on any one pile are not probable.
8. At the July 9 meeting there was some discussion of the settlements at the Burns Harbor Bethlehem Steel Plant following the oral statement by Mr.

George M. Wilson of United Steel Workers Local 6787. Information was requested for the July 12 meeting concerning the amount of settlements actually observed and the types of foundations used at the Burns Harbor Plant. NIPSCO agreed to try to obtain this information.

An excellent publication on settlements at the Burns Harbor Steel Plant is, "Settlement of Spread Footings on Sand," by D. J. D'Appolonia, E. D'Appolonia, and R. F. Brissette, J. Soil Mechanics and Foundations Division, Proc. Am. Soc. Civil Engineers, v. 94, No. SM3, May, 1968, pp. 735-760. Settlement measurements were made on over 300 column footings over a period of roughly four years. These were all spread footings and the maximum settlement was on the order of 3/4 inch. It was also noted in this paper that, "Heavy machinery is supported on individual footings not considered in this study."

Consequently, in our comments we noted that settlements at the Burns Harbor Plant provide no useful information for evaluating settlements of pile-supported facility at the NIPSCO site. Mr. Lynch from NRC Staff confirmed that the Burns Harbor Plant was supported by spread footings and that piles were not used to support the major structures. We recommend that no further effort be devoted to study of settlements of the Burns Harbor Bethlehem Steel Plant.

Our conclusion is that properly designed piles supported by the interbedded glacial lacustrine deposit are satisfactory for carrying the applied loads. This type of pile system represents no significant design change from that incorporating piles to hardpan or bedrock.

Very truly yours,

F. E. Richart, Jr.
ACRS Consultant

R. F. Scott
ACRS Consultant

Reference Documents

1. Supplementary Information on Driven H-Pile Foundations, Docket No. 50-367, BAILLY, December 4, 1978.
2. Docket File 130.1 130.6 130.11 130.16
 130.2 130.7 130.12 130.17
 130.3 130.8 130.13 130.18
 130.4 130.9 130.14 130.19
 130.5 130.10 130.15

362.1	362.8	362.13	362.18
362.2	362.9	362.14	362.19
362.3	362.10	362.15	362.20
362.4	362.11	362.16	362.21
362.7	362.12	362.17	

3. Soil Report, Bailly Generating Station Unit #7, Soil Testing Services, Inc., April 12, 1960.
4. Analysis of Pile Driving Tests, Bailly Generating Station-Nuclear I, Report SL-3205, Sargent and Lundy, September 15, 1975.
5. Design Analysis and Installation of Driven H-Pile Foundations, Bailly Generating Station-Nuclear I, Report SL-3629, Sargent and Lundy for NIPSCO, March 8, 1978.
6. Indicator Pile Program, Bailly Generating Station-Nuclear I for NIPSCO, Sargent and Lundy and Dames and Moore, September 26, 1978.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this
12th day of December 1979

Office of the Secretary
of the Commission

DISSENTING VIEWS OF COMMISSIONER BRADFORD

The relevant facts in this case are not complex. Northern Indiana Public Service Company (the Company) proposed to build the second nuclear power plant in the country on a pile foundation. It stated under oath in its application that the piles on which the plant would rest would "be driven into the glacial till, encountered at approximately elevation -120 to -135, or to the rock surface." It was issued a construction permit (CP) for a utilization facility "as described in the application." (App. A.). After the staff expressed concerns over the method proposed to drive the piles, the Company abandoned its plan to go to bedrock and proposed shorter piles which would be founded in the dense sands underlying the site. The Commission has determined that this significant construction change does not as a matter of law require an

amendment to the construction permit and the attendant public hearing mandated by Section 189. It has further determined that a public hearing on this issue now would not be in the public interest. Instead, the Commission has decided to have the benefit of any outside expertise that might come to bear on the issue, including suggested precautions to be taken while driving the piles, in the operating license proceeding after the piles have been driven and the nuclear plant completed on top.

The Commission's decision continues the AEC's and the NRC's lighthearted treatment of the construction permit amendment provisions in the Atomic Energy Act. In fact, no construction permit amendment for a design change has ever been issued.

I

A threshold issue in this case is whether a licensee is bound by representations concerning design made under oath in its application for a construction permit. The majority sidesteps this issue, claiming that the licensee made no unambiguous representations in its application concerning pile length, and therefore finds no reason to examine what result would be required if in fact an unambiguous representation had been made. Even a casual examination of the record, however, shows that the licensee did in fact make an unambiguous representation that piles would be driven to the glacial till or bedrock. Once that fact is recognized, it becomes clear that a license amendment is required and that the public must have an opportunity for a hearing as a matter of law.

The record shows that in its PSAR the Applicant stated under oath¹ that piles would be driven into glacial till or to bedrock. There was no ambiguity in this statement and it was made repeatedly. For example, Section 2.5.4.3.1 stated:

Class I structures...will be supported by high-capacity non-displacement piles such as steel H-piles or steel pipe piles. The piles will be driven into the glacial till, encountered at approximately elevation -120 to -135, or to the rock surface.

Section 2.5.4.3.2 stated that:

As a result of the analyses [of settlement and ultimate bearing capacity] the determination was made that all Class I structures and certain other major units will be supported on high capacity pile foundations driven to the underlying glacial till or bedrock.

¹ Section 182(a) states: "Applications for, and statements made in connection with, licenses under Sections 103 and 104 shall be made under oath or affirmation."

Similar language expressing an unambiguous representation of pile length may be found in Sections 2.5.4.1 and 2.5.4.3.3. Figures were attached illustrating these representations. See Figures 2.5-29 and 2.5-30. The Commission decision omits mention of all but the 2.5.4.3.1 statement.

This unambiguous plan to drive piles to bedrock remained intact for eight years until the staff expressed concerns about the way the piles were to be “jetted.” It was only then that the Company proposed to alter its PSAR representations that it would drive to glacial till or bedrock. The staff’s reaction to this change indicates conclusively there had been no ambiguity in the PSAR representations and that the shorter pilings proposal was a significant deviation from the PSAR representations. In the February 11, 1978 letter from Roger Boyd to the Company (App. B.), the staff states:

You also indicate that you are proposing to drive the piles into the lacustrine deposits that underlie the Bailly site. We interpret this proposal to mean that the piles will, therefore, be significantly shorter and will not be driven into the glacial till or to bedrock as was proposed in the Preliminary Safety Analysis Report.

These restrictions were directly related to your previously proposed jetting method of pile placement and the associated use of a well point dewatering system within the excavation. However, we will not accept the placement of any safety-related foundation piles which differ significantly from those originally proposed in the PSAR until we have reviewed and found the revised pile type and placement to be acceptable. We consider this restriction to be applicable to the placement of shorter piles under the safety-related structures.

This letter flatly contradicts the Commission’s conclusion that the issue of pile depth was left unresolved at the time of construction permit issuance.

Not only does the Commission neglect to mention the Boyd letter, but the evidence on which it does rely is misconstrued. For example, the Commission states², “The witness’ immediate response to the only specific question on pile depth was that it would be determined after a pile test.” In fact, the passage cited by the Commission should be read in context as stating that what would be determined after the test was whether the piles would go to bedrock or glacial till. No possibility not encompassing bedrock or glacial till was ever mentioned.

The Commission also relies on the fact that the PSAR stated that pile type, capacity, and spacing would be determined after further study. Even though pile length or depth was not mentioned in this section of the PSAR, the Commission concludes that “the whole issue of pile design—including type of pile, spacing, and *depth*—was left unresolved....” (emphasis supplied) The Commission finally makes much of the “very preliminary” nature of the

² Commission Opinion, p. 740.

pilings proposal even though the Preliminary Safety Analysis Report is of a preliminary nature by definition. 10 CFR 50.34(a).

Once it is concluded that an unambiguous representation concerning pile depth was made in the PSAR, the Atomic Energy Act compels the conclusion that a deviation from that representation requires a construction permit amendment. Section 182 requires that application for reactors be made under oath and Section 185 requires, as a precondition to issuance of an operating license, a finding that the facility has been constructed "in conformity with the [construction permit] application as amended." Section 189 requires a mandatory hearing on the CP application and a mandatory hearing on CP amendments where a petition by an interested person has been filed. These sections taken together show the importance that the Atomic Energy Act places on the CP application and amendments to it. If licensees could ignore the commitments made in the CP proceeding and change the design at will, the CP proceeding becomes meaningless, for a party cannot decide not to litigate an issue when the PSAR resolution is satisfactory if the PSAR representations are not binding and may be changed without hearing. Furthermore, Section 189 upon petition requires a hearing on a CP amendment even when a finding has been made that no significant hazards exist. This indicates a Congressional intent that even minor deviations from the CP which were not significant to safety would require a license amendment.

Had the NRC adopted regulations specifically stating a threshold finding necessary to trigger the CP amendment process, those regulations would control this case. However, there are no such regulations because the last proposed rulemaking on the subject was withdrawn in 1970 for further study. 35 F.R. 5317 (March 31, 1970). All that can be relied on is the Atomic Energy Act itself and the language of the CP which states:

[T]he Atomic Energy Commission (the Commission) hereby issues a construction permit to the applicant for a utilization facility designed to operate at 1931 megawatts thermal *as described in the application and amendments thereto* (the application) filed in this matter by the applicant *and as more fully described in the evidence received at the public hearing upon that application.* (emphasis supplied)

In the absence of NRC regulations on the subject, the best reading of the AEA and the CP is that a licensee is bound by the representations it makes in the application and the hearing record. Deviations from those representations, with the possible exception of clearly *de minimis* changes, may only be made by amendments to the CP.³ The Commission's holding to the contrary manages to penalize those who rely on testimony under oath in its own proceeding in deciding whether or not to contest issues.

³ One of the arguments against this conclusion is that it would subject the construction permit holders to countless delays because there are inevitably many changes from the PSAR design in a complex nuclear plant. The answer to this argument is that the Commission should promulgate regulations separating out significant design changes from insignificant ones.

The staff and the licensee recognize that PSAR representations cannot be totally meaningless and have argued that a CP holder is bound by “the principal architectural and engineering criteria” proposed in the PSAR and the hearing record. The primary support for this argument comes from some of the language in the CP itself and language in a Commission regulation.⁴ However, as noted, the CP states that it authorizes “the applicant to construct the facility *described in the application and hearing record*, in accordance with principal architectural and engineering criteria....” (emphasis supplied). This language on its face binds the licensee to the facility as described in the application and hearing record *as well as* to principal architectural and engineering criteria.⁵ As to the regulation cited⁶, while it does provide that a CP may be issued on the basis of the principal architectural and engineering criteria (if other conditions are met), it is not relevant to the issue of whether the licensee is bound by representations which are made in addition to those criteria.

The “principal architectural and engineering criteria” argument is not persuasive. These criteria are so broad and vague that major design changes may be made without going through the CP amendment process, thereby undercutting the integrity of the CP process. Such vague criteria work a fundamental unfairness to the party who has contested the issuance of a CP and has no sure way of knowing which of the applicant’s representations are binding and which are subject to change without notice. Under the current staff interpretation and practice,⁷ no one knows the ground rules with any certainty. Licensees do not know what types of design changes (if any) require a construction permit amendment, which require informal staff approval and

⁴ Also cited is *Power Reactor Development Corp. v. International Union of Electrical Workers*, 367 U.S. 396 (1961). That case, however, decided only that the Commission need not make the same definitive safety finding to issue a construction permit as to issue an operating license. The case did not discuss the CP amendment process and the extent to which the licensees are bound by the representations made under oath in a CP application. Moreover, it should be noted that while the safety finding in the *PRDC* case concerned a facility “of the general type” proposed in the application, the equivalent finding in *Bailly* concerned not the general type of facility proposed but rather the proposed facility itself. (See 367 U.S. at 403 and *Bailly* Construction Permit, Finding 1E.) These different findings reflect the differences that exist between the 1959 and the current version of 10 CFR 50.35. In any case, the reactor in question suffered a partial meltdown in 1966 and has never operated commercially, so the endorsement of the review process is at best of mixed significance.

⁵ That the description of the facility is not limited to the principal architectural and engineering criteria is apparent in CP finding 1B, which states that the Applicant “has described the proposed design of the Bailly Generating Station, Nuclear 1 (the facility), *including but not limited to*, the principal architectural and engineering criteria....”

⁶ 10 CFR 50.35(a).

⁷ It is worth noting that the staff position in this case is self-contradictory. On the one hand, the staff claims that the design change is so significant that it requires cessation of construction until staff review is completed. On the other hand, staff claims the change is not substantial enough as to require the construction permit amendment.

which can be undertaken without the need even to notify the staff. The staff's filing makes clear that it is made aware of some changes in facilities under construction through formal and informal notification, but does not learn of others until the plant is ready for operating license review. Thus, the staff is by no means certain what design changes are being undertaken at any particular time.

If the licensees and the staff are unsure of the applicable rules and developments, the interested public is even more in the dark. Those who rely on representations made in the application may well be surprised to learn at a later date that these have been changed without an amendment.

II

Even if a hearing on the shorter pilings proposal were not required as a matter of law, the Commission as a matter of discretion should order a public hearing on this matter. Only one nuclear power plant in the country has ever been built on pilings and the staff has had the shorter pilings issue under study for more than a year without reaching a conclusion on the issue. The ACRS stated that the proposal raised safety issues and has suggested safety precautions while the piles are driven. Once the piles are driven and the plant is built on top, it will be too late to decide whether different or additional safety requirements are needed. The remedies available at that time, including the denial of a license to a completed plant, would be more difficult and expensive.⁸

The majority seems to attach much significance to the ACRS review and its conclusion that the shorter pilings is not a significant design change from the standpoint of engineering.⁹ The fact is, however, that that ACRS letter itself acknowledged that safety issues were raised by the proposal and that procedures would be necessary to protect the public health and safety if the short pilings proposal were accepted. Indeed, the consultants, in a letter sent after the ACRS letter to the Commission, note that their "relatively brief study of the problem would contribute to only a few of the topics covered in the NRC Staff's exhaustive study" and listed several areas for future study. (App. C.) The Commission should not rely on this informal and tentative process as

⁸ The current dispute between the staff the licensee over the corrective actions necessitated by the use of fill at the Midland plant in possible conflict with the PSAR commitment seems to illustrate the shortcomings involved in having an issue of this sort in dispute after the facility has been built.

⁹ The staff is in apparent disagreement with the ACRS since it has acknowledged that short shorter pilings "differ significantly from those proposed in the PSAR." (February 11, 1978 letter from Boyd to NIPSCO.) See also the January 10, 1979 staff submission to the Commission, p. 11. In any event, there is no basis in the AEA or the Commission's regulations for using "a significant design change from the standpoint of engineering" as the criterion for determining when a CP amendment is required.

a substitute for a formal hearing in which the staff's SER and the further study recommended by the ACRS consultants will be examined on the record by all parties.

Today's decision reflects a lack of use for public participation in nuclear affairs. A public hearing, rather than being pro forma, might just result in a safer foundation for the plant because of the discipline imposed and additional points of view expressed. Old attitudes apparently die hard, especially those that insist on settling nuclear safety and environmental issues on an informal basis between the NRC and the industry even when the law points in a different direction.

APPENDIX A

NORTHERN INDIANA PUBLIC SERVICE COMPANY DOCKET NO. 50-367 BAILLY GENERATING STATION, NUCLEAR 1

CONSTRUCTION PERMIT

Construction Permit No. CPPR-104

1. The Atomic Energy Commission (the Commission) having found that:
 - A. The application for construction permit complies with the requirements of the Atomic Energy Act of 1954, as amended, and the rules and regulations of the Commission, there is reasonable assurance that the activities authorized by the permit will be conducted in compliance with the rules and regulations of the Commission, and all required notifications to other agencies or bodies have been duly made;
 - B. The Northern Indiana Public Service Company (the Applicant) has described the proposed design of the Bailly Generating Station, Nuclear 1 (the facility), including, but not limited to, the principal architectural and engineering criteria for the design and has identified the major features or components incorporated therein for the protection of the health and safety of the public;
 - C. Such further technical or design information as may be required to complete the safety analysis, and which can reasonably be left for later consideration, will be supplied in the final safety analysis report;
 - D. Safety features or components, if any, which require research and development have been described by the applicant and the applicant has identified, and there will be conducted, a research and development program reasonably designed to resolve any safety questions associated with such features or components;

- E. On the basis of the foregoing, there is reasonable assurance that (i) such safety questions will be satisfactorily resolved at or before the latest date stated in the application for completion of construction of the proposed facility and (ii) taking into consideration the site criteria contained in 10 CFR Part 100, the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public;
 - F. The applicant is technically qualified to design and construct the proposed facility;
 - G. The applicant is financially qualified to design and construct the proposed facility;
 - H. The issuance of a permit for the construction of the facility will not be inimical to the common defense and security or to the health and safety of the public; and
 - I. After weighing the environmental, economic, technical and other benefits of the facility against environmental costs and considering available alternatives, the issuance of a construction permit [subject to the conditions for protection of the environment set forth herein] is in accordance with 10 CFR Part 50, Appendix D, of the Commission's regulations and all applicable requirements of said Appendix D have been satisfied.
2. Pursuant to Section 103 of the Atomic Energy Act of 1954, as amended (the Act), and Title 10, Chapter I, Code of Federal Regulations, Part 50, "Licensing of Production and Utilization Facilities," and pursuant to the Initial Decision of the Atomic Safety and Licensing Board, dated April 5, 1974, the Atomic Energy Commission (the Commission) hereby issues a construction permit to the applicant for a utilization facility designed to operate at 1931 megawatts thermal as described in the application and amendments thereto (the application) filed in this matter by the applicant and as more fully described in the evidence received at the public hearing upon that application. The facility, known as the Bailly Generating Station, Nuclear 1, will be located on the applicant's site on the southern shore of Lake Michigan in Porter County, Indiana.
3. This permit shall be deemed to contain and be subject to the conditions specified in Sections 50.54 and 50.55, of said regulations; is subject to all applicable provisions of the Act, and rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the conditions specified or incorporated below:
- A. The earliest date for the completion of the facility is March 1, 1978, and the latest date for completion is September 1, 1979.
 - B. The facility shall be constructed and located at the site as described in

the application on the southern shore of Lake Michigan in Porter County, Indiana.

- C. This construction permit authorizes the applicant to construct the facility described in the application and the hearing record, in accordance with the principal architectural and engineering criteria and environmental protection commitments set forth therein.
- D. Licensee will permit reasonable participation by Wabash Valley Power Association in either its next nuclear fuel generating unit or unit No. 15, a fossil fuel generating unit planned to commence commercial operation in 1978 to 1980, whichever generating unit is the first scheduled to be placed in commercial operation, in the event timely request is made by authorized representatives of Wabash Valley Power Association. The terms for such participation shall be reasonable, mutually acceptable to the parties and subject to the approval of all regulatory bodies having jurisdiction in the subject matter.

*Explanatory Notes**

- (1) Participation includes unit ownership or unit power purchase in either licensee's next nuclear unit or unit No. 15, a fossil fuel unit planned for commercial operation in 1978 to 1980, whichever is first scheduled for commercial operation.
 - (2) Licensee will provide Wabash Valley Power Association with such cost data as reasonably required by the Association to calculate the economic impact on its power supply of such participation.
 - (3) In conjunction with negotiations of the terms for participation licensee will provide Wabash Valley Power Association with proposals for the ancillary arrangements with the Association necessary for efficient delivery and use of its participation power and energy and for emergency backup service, such emergency backup service to be provided only if available and the delivery of such service would not jeopardize the integrity and reliability of licensee's system.
- E. Licensee will recognize the principle of providing a credit to any wholesale customers that construct, operate and maintain sub-transmission (69 KV or less) lines which have a resultant demonstrable benefit to the licensee. Any such credit would be subject to the approval of all regulatory bodies having jurisdiction in that subject matter.

* In order to clarify the license conditions certain explanatory notes have been added to items 3D and 3E.

*Explanatory Notes**

- (1) If any of its wholesale customers advise licensee that they have construction of subtransmission facilities (69 KV or less) under consideration to be used to serve such wholesale customer, licensee will consult with them in the planning stage of such facilities to determine whether or not the facilities will have a resultant demonstrable benefit to the licensee.
 - (2) Demonstrable benefit will include, but not be limited to:
 - (a) Where licensee would avoid transmission costs that it would otherwise have to bear itself.
 - (b) Licensee will achieve increased service reliability.
 - (c) Licensee would be able to utilize the lines for transmission of power intended for other customers of licensee.
- F. This facility is subject to the following conditions for the protection of the environment:
- (1) Prior to start of construction, the applicant in accordance with its commitment, will undertake the "Ecological Monitoring Program" and the "Monitoring Program for Water Levels of Interdunal Ponds During Construction Dewatering".
 - (2) Prior to discharging to the site's ash settling ponds any liquid effluents attributable to site preparation, construction or operation of the Bailly Generating Station, Nuclear 1, if the required monitoring program indicates any evidence that ash pond seepage is causing a change in the chemical composition of the interdunal ponds, the applicant will take remedial action as needed to assure that the Nuclear 1 effluents do not contribute significantly to any such changes.
 - (3) The applicant will determine the actual intake water velocities which exist around the outside of the intake structure with the present Units 7 and 8 operating. If intake velocities presently exceed 1 ft/sec, design changes will be made to reduce the intake velocities to less than 1 ft/sec prior to starting operation of the facility.
 - (4) The applicant will control and monitor total residual chlorine in such a way as to assure that total residual chlorine levels in the discharge water does not exceed 0.1 ppm during the intermittent chlorination of cooling tower and service water circuits.
 - (5) If harmful effects or evidence of irreversible damage are detected by the monitoring program, the applicant will provide to the staff an analysis of the problem and a plan of action to be taken to eliminate or significantly reduce the detrimental effects or damage.

* In order to clarify the license conditions certain explanatory notes have been added to items 3D and 3E.

4. This permit is subject to the limitation that a license authorizing operation of the facility will not be issued by the Commission unless (a) the applicant submits to the Commission the complete final safety analysis report, portions of which may be submitted and evaluated from time to time; (b) the Commission finds that the final design provides reasonable assurance that the health and safety of the public will not be endangered by the operation of the facility in accordance with procedures approved by it in connection with the issuance of said license; (c) the Commission finds that operation of the facility will be in accordance with 10 CFR Part 50, Appendix D, of the Commission's regulations and all applicable requirements of said Appendix D were satisfied; and (d) the applicant submits proof of financial protection and the execution of an indemnity agreement as required by Section 170 of the Act.
5. This permit is subject to the temporary restriction on site dewatering before September 1, 1974, set forth in the Order of the Atomic Safety and Licensing Appeal Board in this proceeding dated April 30, 1974, (ALAB-200).
6. This permit is effective as of its date of issuance and shall expire on the latest completion date indicated in paragraph 3.A above.

FOR THE ATOMIC ENERGY COMMISSION

A. Giambusso, Deputy Director
for Reactor Projects
Directorate of Licensing

Date of Issuance:
May 1, 1974

**NORTHERN INDIANA PUBLIC SERVICE COMPANY
BAILLY GENERATING STATION, NUCLEAR-1
DOCKET NO. 50-367
AMENDMENT TO CONSTRUCTION PERMIT**

Construction Permit No. CPPR-104
Amendment No. 1

Pursuant to an Initial Decision dated November 22, 1974 and a Supplemental Initial Decision dated February 21, 1975, the Nuclear Regulatory Commission has amended Construction Permit No. CPPR-104 by adding a new paragraph 3.F(6) to read as follows:

"(6) The Permittee is authorized to construct a slurry wall as submitted by their proposal on September 6, 1974, in lieu of a well point dewatering system originally proposed, subject to the following conditions for protection of the environment:

- a. If the slurry wall does not work as anticipated and the Permittee decides to install well points to dewater the excavation, the Permittee shall notify the Staff in advance of this change.
- b. The Staff, upon notification as required in condition (6)a., above, shall take appropriate action to determine whether there is any effect upon the environmental monitoring program designed to detect and mitigate any possible adverse effects from dewatering, particularly in the area of the Indiana Dunes National Lakeshore. If there is any reduction in the effectiveness of the aforementioned monitoring program, the Staff shall take immediate action to require revision of the monitoring program to insure the effectiveness and to mitigate any possible adverse effects."

In addition to the amendment authorized by the ASLB Initial Decision, and supplemental Initial Decision, the following administrative change is to be made to Construction Permit No. CPPR-104 issued May 1, 1974:

Delete paragraph 5 on page 6. This restriction is no longer relevant or applicable. Renumber paragraph 6 to new paragraph 5.

This construction permit amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

S. A. Varga, Chief
Light Water Reactors Branch No. 4
Division of Project Management

Date of Issuance:
December 22, 1976

APPENDIX B

February 11, 1978

Docket No. 50-367

Northern Indiana Public Service Company
ATTN: Mr. Russell J. Bohn
Manager, Nuclear Staff
5265 Hohman Avenue
Hammond, Indiana 46325

Gentlemen:

We have received your letter of December 7, 1977, in which you state that NIPSCO is no longer proposing jetting as a method for placing the foundation piles of the Bailly safety-related buildings. You also indicate that you are proposing to drive the piles into the lacustrine deposits that underline the Bailly site. We interpret this proposal to mean that the piles will, therefore, be significantly shorter and will not be driven into the glacial till or to bedrock as was proposed in the Preliminary Safety Analysis Report.

We understand that you will submit the design criteria for these safety-related foundation piles in mid-February. In any meetings with the NRC staff to discuss your latest proposal for the Bailly safety-related foundation piles, it would be helpful to bring all consultants to this meeting who have participated in the preparation of the engineering criteria of your present proposal.

We note in your letter of December 7 that you plan to conduct two additional pile tests outside the area of the safety-related structures. Placement of the test piles in the manner described in your letter of December 7 is not affected by the restrictions contained in our letters of October 3 and November 8, 1977. These restrictions were directly related to your previously proposed jetting method of pile placement and the associated use of a well point dewatering system with the excavation. However, we will not accept the placement of any safety-related foundation piles which differ significantly from those originally proposed in the PSAR until we have reviewed and found the revised pile type and placement to be acceptable. We consider this restriction to be applicable to the placement of shorter piles under the safety-related structures.

Sincerely,

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

July 19, 1979

Mr. R. F. Fraley, Executive Secretary
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RE: — 231st ACRS Committee Meeting: Discussion of BAILLY Piles,
July 12, 1979, Washington, D.C., and ACRS Subcommittee Meeting, July 9,
1979, Portage, Indiana.

Dear Mr. Fraley:

In accordance with requests by telephone from Mr. R. Muller of ACRS and with the authorizations for Official Travel, the undersigned visited the BAILLY Site and attended the ACRS Subcommittee Meeting on July 9, and attended the evening portion of the ACRS Committee Meeting on July 12. Previously, we had been sent the Reference Documents (noted at the end of this report) for study.

As a result of our study of documents, and from information obtained at the site and answers to our questions, we presented comments at the ACRS Meeting, July 12, 1979. These comments and additional notes are included in the following paragraphs.

1. We noted that the NRC Staff had not yet completed its analysis of the behavior of piles to the interbedded glacial lacustrine deposit. Therefore our relatively brief study of the problem would contribute to only a few of the topics covered in the NRC Staff's exhaustive study.
2. It was not clear from the documents we studied as to the *amount* of *settlement* which might be developed by compression of the soils between the pile tips and bedrock. Professor Richart suggested that it would be most useful if personnel from Sargent and Lundy and/or Dames and Moore would spend a day with Professor Scott in Pasadena to review and clarify the method of evaluating the settlement below the pile tips. This settlement and the associated deformation of the continuous pile cap mat under the entire facility were also to be discussed.
3. On July 16, 1979, Mr. A. K. Singh from Sargent and Lundy and Mr. Demetrious Koutsoftas from Dames and Moore visited Professor Scott in Pasadena. They discussed methods of calculating the settlements and the values obtained until about 6:00 p.m. At the end of this discussion period Professor Scott was satisfied that the methods of calculation, and selection

of soil properties from laboratory and field data, were satisfactory. Following further study alone, Professor Scott concluded that their estimates of settlement were also satisfactory, and that the settlement should not be more than two inches.

4. With adequate design of the piling system, we believe that satisfactory *load-bearing* systems can be developed with piles bearing in the interbedded glacial lacustrine deposit.
5. The soil regions disturbed during previous construction have been termed "Soft Spots." These zones will be identified, recompacted by driving additional displacement piles, and the effectiveness of the recompaction will be verified. We suggested the use of a Dutch Cone Penetrometer as a rapid method for identifying the zone of loose soil at each soft spot and the effectiveness of compaction. The consultants to NIPSCO will look into use of this procedure. There is no major problem in recompacting these soft spots.
6. The new Pile Load Test Program appears satisfactory. We questioned the limiting load of 600 tons and suggested that a number of piles be tested to failure even if the load exceeds 600 tons. This would provide field verification of Dr. Lymon Reese's analytical procedures.
7. We had requested information concerning the combined static and dynamic loads to be developed in the piles. This was given to us at the end of the ACRS Meeting by Sargent and Lundy personnel as copies of Tables 130.4-1 and 130.4-2. Further discussions on the structural integrity of the pile cap-base mat assured us that there can be minimal articulation of the base mat and it must move essentially as a single unit, after appropriate detailed design studies assure continuity of the structure. Thus the base mat motions, during earthquakes, control the loading in each pile, and extreme loadings on any one pile are not probable.
8. At the July 9 meeting there was some discussion of the settlements at the Burns Harbor Bethlehem Steel Plant following the oral statement by Mr. George M. Wilson of United Steel Workers Local 6787. Information was requested for the July 12 meeting concerning the amount of settlements actually observed and the types of foundations used at the Burns Harbor Plant. NIPSCO agreed to try to obtain this information.
An excellent publication on settlements at the Burns Harbor Steel Plant is, "Settlement of Spread Footings on Sand," by D. J. D'Appolonia, E. D'Appolonia, and R. F. Brissette, J. Soil Mechanics and Foundations Division, Proc. Am. Soc. Civil Engineers, v. 94, No. SM3, May, 1968, pp. 735-760. Settlement measurements were made on over 300 column footings over a period of roughly four years. These were all spread footings and the maximum settlement was on the order of 3/4 inch. It was also noted in this paper that, "Heavy machinery is supported on individual footings not considered in this study."

Consequently, in our comments we noted that settlements at the Burns Harbor Plant provide no useful information for evaluating settlements of pile-supported facility at the NIPSCO site. Mr. Lynch from NRC Staff confirmed that the Burns Harbor Plant was supported by spread footings and that piles were not used to support the major structures. We recommend that no further effort be devoted to study of settlements of the Burns Harbor Bethlehem Steel Plant.

Our conclusion is that properly designed piles supported by the interbedded glacial lacustrine deposit are satisfactory for carrying the applied loads. This type of pile system represents no significant design change from that incorporating piles to hardpan or bedrock.

Very truly yours,

F. E. Richart, Jr.
ACRS Consultant

R. F. Scott
ACRS Consultant

Reference Documents

1. Supplementary Information on Driven H-Pile Foundations, Docket No. 50-367, BAILLY, December 4, 1978.
2. Docket File

130.1	130.6	130.11	130.16
130.2	130.7	130.12	130.17
130.3	130.8	130.13	130.18
130.4	130.9	130.14	130.19
130.5	130.10	130.15	
362.1	362.8	362.13	362.18
362.2	362.9	362.14	362.19
362.3	362.10	362.15	362.20
362.4	362.11	362.16	362.21
362.7	362.12	362.17	
3. Soil Report, Bailly Generating Station Unit #7, Soil Testing Services, Inc., April 12, 1960.
4. Analysis of Pile Driving Tests, Bailly Generating Station-Nuclear I, Report SL-3205, Sargent and Lundy, September 15, 1975.
5. Design Analysis and Installation of Driven H-Pile Foundations, Bailly Generating Station-Nuclear I, Report SL-3629, Sargent and Lundy for NIPSCO, March 8, 1978.

6. Indicator Pile Program, Baily Generating Station-Nuclear I for NIPSCO, Sargent and Lundy and Dames and Moore, September 26, 1978.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document(s) upon each person designated on the official service list compiled by the Office of the Secretary of the Commission in this proceeding in accordance with the requirements of Section 2.712 of 10 CFR Part 2 - Rules of Practice, of the Nuclear Regulatory Commission's Rules and Regulations.

Dated at Washington, D.C. this
12th day of December 1979

Office of the Secretary
of the Commission

Cite as 10 NRC 767 (1979)
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

CLI-79-12

COMMISSIONERS:

John F. Ahearne, Chairman
Victor Gilinsky
Richard T. Kennedy
Joseph M. Hendrie
Peter A. Bradford

**FLORIDA POWER AND
LIGHT COMPANY**
(St. Lucie Plant, Units 1 and 2)

**Docket Nos. 50-335A
50-389A**

**FLORIDA POWER AND
LIGHT COMPANY**
(Turkey Point Plant, Units 3 and 4)

**Docket Nos. 50-250A
50-251A
December 21, 1979**

The Commission declines to exercise its discretionary authority to institute a proceeding under Section 105a of the Atomic Energy Act to consider remedial action against a licensee found as a matter of law by the Fifth Circuit Court of Appeals to have conspired to violate the antitrust laws.

ATOMIC ENERGY ACT: SECTION 105a ANTITRUST PROCEEDINGS

The purpose of Section 105a of the Atomic Energy Act is to give the Commission discretionary authority to institute proceedings to take necessary additional remedial action against a Commission licensee found by a court of competent jurisdiction to have violated the antitrust laws in the conduct of Commission-licensed activities.

ATOMIC ENERGY ACT: SECTION 105a ANTITRUST PROCEEDINGS

While Section 105a mandates a two-part test for the initiation of antitrust proceedings, an unambiguous demonstration of the connection between the antitrust violation and the licensed activities is not a necessary precondition to the institution of proceedings, as that connection could be probed by the Licensing Board.

ATOMIC ENERGY ACT: SECTION 105a ANTITRUST PROCEEDINGS

Where remanded proceedings in federal district court may illuminate the link between the violations of law and the Commission-licensed activities, and

will provide the court's remedy, the Commission has grounds not to exercise its discretion to initiate Section 105a proceedings at this time.

ORDER

The Commission has requested and received the views of the Florida Power and Light Company, the Florida Cities,¹ the Department of Justice, the NRC, and other interested parties, as to the implications for the Commission's antitrust responsibilities of the Fifth Circuit's decision in *Gainesville Utilities Department v. Florida Power and Light Company*, 573 F. 2d 292 (1978). In particular, the Commission requested views as to the legal necessity and the desirability of initiating a proceeding under Section 105a of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2135(a); the timing of any such proceeding; and the possibility of consolidating any such proceeding with the ongoing Section 105c proceeding related to the St. Lucie 2 plant. For the reasons outlined below, we decide not to institute a Section 105a proceeding at this time.

Section 105a provides that:

In the event a licensee is found by a court of competent jurisdiction ... to have violated any of the provisions of [certain antitrust laws] in the conduct of the licensed activity, the Commission may suspend, revoke, or take such other action as it may deem necessary with respect to any license issued by the Commission under the provisions of this Act.

It may be useful, at the outset, to discuss briefly the purpose of Section 105a. On this point the legislative history is unequivocal. In hearing before the Joint Committee on Atomic Energy, on June 2, 1954, the following discussion of Section 105a took place between Representative Holifield and AEC General Counsel William Mitchell:

Representative Holifield. The section provides that the Commission may suspend, revoke, or take such other action as it may deem necessary after the court finding of monopoly.

I point out that this is "after," after the court finding of monopoly....I point out that it is permissive and not mandatory upon the Commission to take that type of action.

Mr. Mitchell. Yes, sir; that is right. I think our feeling would be that in the case of a finding of violation of law by a court, normally the court itself would take whatever action would be appropriate, but this provides for additional authority in the Commission.

The decision of the Court of Appeals in *Gainesville* held as a matter of law that Florida Power and Light had conspired with the Florida Power

¹ The Florida Cities are a group of 16 Florida municipalities and municipal utility commissions which have been participating jointly in Commission proceedings. Gainesville is one of them.

Company to divide the wholesale power market in the state. The context of the court's decision is significant. It took place on review of a district court decision which held that there had been no conspiracy to divide the power market in Florida. The appellate court, in reversing that decision, found as a matter of law that the evidence before the district court demonstrated the existence of a conspiracy. It was left to the district court on remand, however, to determine whether the conspiracy was a substantial cause of Gainesville's inability to obtain an interconnection with Florida Power and Light, and if so, to assess the measure of damages and to formulate whatever remedy might be appropriate. Trial has not yet begun in that remanded proceeding.

Ordinarily, the first finding of a violation of the antitrust laws would be made by a district court, and its decision would lay out the factual predicate for its findings, the measure of damages suffered, and the court's remedy. At that point, the Commission would have the opportunity, through Section 105a of the Atomic Energy Act, to formulate whatever *additional* remedies might be necessary in order to effectuate the clear Congressional purpose that licensed nuclear activities be fully consistent with the antitrust laws. In this, the unusual case, the initial finding of a violation was made by the Court of Appeals, leaving other issues to the district court. To initiate a Section 105a proceeding at this time would therefore be to create the possibility of reversing the normal order in which relief is granted first by the court and only afterwards, if warranted, by the Commission.

In addition, it is not clear from the decision of the Court of Appeals whether the violations of law took place "in the conduct of the licensed activity." Nor are the filings of the parties dispositive of this issue. While an unambiguous demonstration of a connection between violations of law and NRC-licensed activities is not in our view a necessary precondition to the institution of a Section 105a proceeding (whether and to what extent that connection existed could be explored with precision by the Licensing Board in that proceeding), we are conscious that the factual record developed in the remanded district court decision may well illuminate this issue.

Our decision to exercise our discretion not to initiate proceedings at this time is thus based on two grounds. First, by awaiting the decision of the district court and the remedies it may provide, the Commission will be in a position to determine whether any additional Commission action may be needed to fulfill the antitrust purposes of the Atomic Energy Act.² Until the district court acts, that Commission determination clearly cannot be made.

² In the event that the Commission determines that Section 105a proceedings should be instituted against both parties to the conspiracy found by the Court of Appeals, a single consolidated proceeding would clearly be the most efficient means of considering the nature and effects of that conspiracy. At such time that the Commission revisits the question of whether to institute proceedings against Florida Power and Light, it can appropriately consider whether proceedings against Florida Power are in order. Until the district court has acted, however, institution of proceedings against either licensee would be premature.

Secondly, the district court may help clarify whether the threshold test triggering application of the statute has in fact been met.³

Our action today is without prejudice to the filing of future petitions seeking the institution of Section 105a proceedings in this matter.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 21st day of December, 1979.

³ We need not decide today whether, under other circumstances, a Section 105a proceeding could be instituted on the basis of a record as slender as that before us with respect to the connection between the violation of the antitrust laws and the licensed activity. We exercise our discretion to await a possibly fuller record on this point.

DISSENTING VIEWS OF COMMISSIONER BRADFORD

The Commission decision today revisits the occasional agency practice of straining law and fact in order to avoid the responsibilities that Congress has charged us with. It is true that the Report of the President's Commission on the Accident at Three Mile Island has advocated a review of transfers of statutory jurisdiction to "remove any unnecessary responsibilities that are not germane to safety."¹ However, until such a review has been conducted and Congress has acted, it does not become us to seek the same result by legal sleight-of-hand.

The Commission's antitrust jurisdiction is an unusual one and results in substantial part from a compromise between those who favored publicly-owned development of nuclear power and the proponents of privately owned nuclear power plants. In accepting private ownership, the Congress gave the Atomic Energy Commission its unique antitrust jurisdiction to assure that nuclear power would not be developed in an anti-competitive manner, specifically that municipal and other small systems would not be disadvantaged in their access to nuclear power. It is that Congressional compromise that this NRC decision works to undermine.

Until today, Section 105(a) was one of the more clearly written sections of the Atomic Energy Act. It required a finding by "a court of competent jurisdiction" that a licensee had "violated any of the provisions of [certain antitrust laws] in the conduct of the licensed activity" to trigger Commission concern as to the necessary remedy. One would not have thought that the Commission's discretion in fashioning a remedy was tantamount to a license to ignore the finding altogether. Let us observe closely the three-part rationalization employed to reach this peculiar result.

I. LEGISLATIVE HISTORY

The legislative history of Section 105(a) of the Atomic Energy Act is said to be "unequivocal" based on a single exchange between one Congressman and the General Counsel of the Atomic Energy Commission. Since this passage drifts free in the Commission opinion, it is not clear what it is there to prove so unequivocally, but one must assume that it was thought to be supportive of what follows and deal with it accordingly.

First, legislative history cannot be unequivocally established out of the mouth of a single Congressman. The rest of the Congressional debate and the public versus private power controversy as it affected nuclear energy point in rather a different direction and are ignored.

Second, Mr. Mitchell, the AEC General Counsel, apparently neither prepared nor offered the language which was finally enacted as Section 105(a), so he is scarcely a compelling authority as to what the intent of Congress was. For a colloquy like this to be meaningful, it should include the sponsor.

¹ President's Commission Report, at p. 63.

Third, taken as meaning something, the colloquy says only that the Atomic Energy Commission's General Counsel thought that, following a finding that a conspiracy existed, "normally the court itself would take whatever action would be appropriate." In a circumstance in which it was likely that the court's remedy would not reach abuses involving the licensed activity, Mr. Mitchell's words suggest that separate Commission action would be in order. That is the case here.

II. COMPETENT JURISDICTION

Here again it is hard to be sure just what the Commission is saying. It does not for obvious reasons say that the Appellate Court is not a court of competent jurisdiction. However, much is made of the "context" of the Court's unequivocal (here that word does apply) finding that Florida Power and Light and Florida Power Corporation had conspired in violation of Section 1 of the Sherman Antitrust Act to divide the Florida wholesale power market. Ordinarily, the Commission says, the Court's finding and its remedy would be simultaneously available, and the Commission could decide whether a further remedy were necessary. This is true, but is not relevant to this case.

In this case, there is little possibility that the District Court will fashion a remedy having directly to do with NRC licensed activities. For one thing, Florida Power Corporation is not even a party to the court case; for another, the issues before the court are the cause of and the damages from the denial of an interconnection, an issue very unlikely to lead the court into nuclear power plants. If licensed activities are part of the conspiracy, an NRC-fashioned remedy under Section 105(a) is going to be necessary unless the matter is dealt with in individual licensing proceedings under Section 105(c) or is otherwise resolved.

III. LICENSED ACTIVITY

The Commission opinion on this point is hard to treat with respect. The Court found that the companies had a conspiracy as of 1968 to divide the wholesale power market in Florida. All of the nuclear power plants which today make up more than 15% of the conspirators' generating capacity were then well past the planning stage at which ownership and energy purchases would have been initially considered and divided. Consequently, a substantial part of the wholesale power market being conspired about is in fact an NRC licensed activity. In order to conclude that NRC licensed activity may not be involved in the conspiracy, the Commission must make some unlikely inference of the type:

(1) That the conspiracy and its effects ceased before nuclear power became part of the Florida wholesale power market, or

(2) That the conspiracy involved interconnections and never extended to nuclear generating stations.²

Neither of these conclusions can validly be made without instituting a proceeding, which is precisely why a proceeding is necessary if we are to live up to the duty placed on us by Section 105(a) to ascertain whether or not NRC action is necessary to remedy antitrust violations or situations inconsistent with the antitrust laws in the context of NRC licensed activities. As I have said previously, I cannot understand the majority's faith that the District Court, confronted as it is with different parties and different issues, "may well illuminate this issue." In the unlikely event that it does, we can make use of the illumination; if it does not, we would not have wasted the many months that will elapse before we have the decision of the District Court.

IV. OUR ANTITRUST RESPONSIBILITIES

It seems to me that this Commission virtually insults the efforts of the parties to whom we propounded questions. All of them except the licensee urged consideration of the sort that the Commission now denies.

As the staff notes in its Memorandum, it is not necessary to open a full Section 105(a) proceeding at this time. Instead, the Commission could refer the issues raised in the *Gainesville* decision to the Licensing Board presiding over the antitrust review of St. Lucie 2 and Turkey Point 3 and 4. Although Florida Power Corporation is not a party to that proceeding, the issue of licensed activity would at least be examined directly. If the Board rendered a positive finding, we could then institute a Section 105(a) proceeding involving all parties. This approach would not impose any serious burden on the NRC or the parties.

If it is the NRC's feeling that its antitrust responsibilities detract from its ability to protect the public from radiation, it should go to Congress and say so. In the meantime, it wastes time and money to put the parties through hoops to end up with a dismissal that reads like a half-stifled yawn.

² The conspiracy clearly included interconnections involving specific generating facilities. See the discussion of the Indian River Plant, *Gainesville v. Florida Power and Light Company*, 573 F.2d 292, at 298 (1978).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. W. Reed Johnson¹

In the Matter of

**PUBLIC SERVICE COMPANY
OF OKLAHOMA, et al.**

**Docket Nos. STN-50-556
STN 50-557**

**(Black Fox Station,
Units 1 and 2)**

December 7, 1979

The Appeal Board affirms the Licensing Board's decision in LBP-78-26, 8 NRC 102 (1978), *modified* LBP-78-28, 8 NRC 281 (1978), authorizing the issuance of a limited work authorization (except for a retained issue involving the environmental effects of radon emissions attributable to the mining and milling of uranium fuel for nuclear power reactors). The Appeal Board (1) certifies to the Commission the question of the role of Appendix I to 10 CFR Part 50 in individual licensing proceedings; and (2) directs the staff to apprise the Commission whether it believes "Class 9" accidents should be considered in this case.

LWA: REQUIRED DETERMINATIONS

Before an LWA may be authorized, a licensing board must first determine whether there has been compliance with the requirements of section 102(2)(A), (C), and (E) of NEPA. 10 CFR 50.10(e)(2) and 51.52 (c)(1).

NEPA: RULE OF REASON

Section 102 of NEPA requires that agencies explore the environmental ramifications of their proposed actions to the fullest extent possible. The "rule of reason" standard for judging compliance with this requirement is not limited in its application to evaluating alternatives; it applies to the entire NEPA evaluation process. *NRDC v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1972).

¹ The third member of the board, Mr. Jerome E. Sharfman, resigned from the panel subsequent to oral argument and did not participate in this decision.

NEPA: SCOPE OF REVIEW

NEPA does not command exploration of every possibility, however remote or speculative. A bare assertion that certain rights "may exist" is not enough to require a licensing board to consider them.

NRC: INVESTIGATORY AUTHORITY

Impermissible labor practices that directly affect the Commission's statutory responsibilities come within its jurisdiction. *Union Electric Company* (Callaway Plant, Units 1 and 2), ALAB-527, 9 NRC 127, 132-39 (1979).

FWPCA: SECTION 401 CERTIFICATION

Before an applicant may be awarded an LWA (or any federal license that may result in a discharge into navigable waters) it must satisfy section 401 of the Federal Water Pollution Control Act, 33 U.S.C. 1341, including the obligation to obtain a certification from the appropriate state agency that the facility will meet the state's water quality standards. However, if the state fails or refuses to act on a request for 401 certification within a reasonable period of time (not to exceed one year), the requirement for obtaining the certification is waived.

NEPA: FINAL ENVIRONMENTAL STATEMENT

To the extent a licensing board's environmental determinations diverge from those in the staff's FES, the latter is deemed modified and the board's decision is distributed to those who commented on the FES. 10 CFR 51.52(b)(3).

RULES OF PRACTICE: BRIEFS

Exceptions may be dismissed where inadequate briefing makes a party's arguments impossible of resolution.

SAFETY STANDARDS: COMPLIANCE

Where it applies, Appendix I to 10 CFR Part 50 is a binding Commission regulation notwithstanding its denomination as an appendix.

RULES OF PRACTICE: APPELLATE PROCEDURE

Parties satisfied with the result on an issue may not themselves appeal. But if the other side appeals they are free to defend a result in their favor on any ground presented in the record, including one rejected below. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-282, 2 NRC 9, 10 fn. 1 (1975); *Niagara Mohawk Power Corp.* (Nine Mile Point Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975).

LWA: REQUIRED DETERMINATIONS

Before a licensing board may authorize the issuance of a limited work

authorization, the Board must find (among other things) that the "site is a suitable location for a [nuclear power] reactor of the general size and type proposed [to be built there]." 10 CFR 50.10(e)(2).

RULES OF PRACTICE: BRIEFS

Briefs on appeal should demonstrate how the Licensing Board erred and "specify . . . the precise portion of the record relied on in support of [each] assertion of error." 10 CFR 2.762(a)(2).

TECHNICAL ISSUES DISCUSSED:

Seismic design criteria; ultimate heat sink (cooling water system); probability of postulated fertilizer barge explosion on river; water supply; radiological monitoring.

Messrs. Michael I. Miller and Paul M. Murphy, Chicago, Illinois (**Messrs. Joseph Gallo**, Washington, D.C., and **Alan P. Bielawski**, Chicago, Illinois, on the briefs) for Public Service Company of Oklahoma, Associated Electric Cooperatives, Inc., and Western Farmers Electric Cooperative, Inc., *applicants*.

Mr. Andrew T. Dalton, Jr., Tulsa, Oklahoma, for Ilene Younghein, Lawrence Burrell, and Citizens' Action for Safe Energy, *intervenors*.

Mr. William J. Olmstead (Mr. L. Dow Davis and Ms. Karen D. Cyr on the brief in response to applicants' exception) for the Nuclear Regulatory Commission staff.

DECISION

The Public Service Company of Oklahoma, Associated Electric Cooperatives, and Western Farmers Electric Cooperative jointly² applied for permission to construct Black Fox Station, a two-unit nuclear power plant capable of generating 2,300 Mw of electricity. The proposed plant site is a 2,200 acre tract bordering the Verdigris River some 13 miles east of Tulsa, Oklahoma. Ilene Younghein, Lawrence Burrell, and Citizens' Action for Safe Energy (CASE) intervened in the Licensing Board hearings in opposition to the plant.

That Board decided the environmental phase of the licensing proceeding in the applicants' favor. It found reasonable assurance in the record that the plant's benefits would outweigh its environmental costs; that the directives of the National Environmental Policy Act of 1969 (NEPA)³ and related

² Public Service would own slightly more than 60%, Associated almost 22% and Western Farmers the remainder of the proposed facility.

³ 42 U.S.C. Section 4321 *et seq.*

Commission regulations⁴ had been met; that adequate arrangements had been made to satisfy applicable Federal, state and local water use and pollution control requirements;⁵ and that, from a radiological health and safety standpoint, the site was suitable for a facility of the general size and type proposed. On the basis of these findings, the Board sanctioned a limited work authorization (LWA) containing conditions to minimize environmental harm from the plant's construction. LBP-78-26, 8 NRC 102, *modified*, LBP-78-28, 8 NRC 281 (1978).⁶ An LWA allows preliminary construction work to be undertaken at the applicant's risk pending completion of the second phase of the licensing proceeding covering radiological health and safety issues.⁷

Both intervenors and applicants excepted to the Licensing Board's decision; we turn first to the intervenors' appeal.⁸

I

Intervenors' brief groups their 114 exceptions under 25 headings denominated "propositions." We begin our review by addressing those propositions raising legal issues or turning on evidence that is essentially uncontradicted.

1. Standard of review under NEPA. Before an LWA may be authorized, a licensing board must first determine whether there has been compliance with "the requirements of section 102(2)(A),(C), and (E) of NEPA."⁹ A principal argument pressed by intervenors in this appeal is that the Licensing Board used the wrong standard in making that determination. Pointing to Section 102 of NEPA, which requires that agencies explore the environmental

⁴ 10 CFR Part 51.

⁵ In particular, see Section 401 of the Federal Water Pollution Control Act, *as amended*, 33 U.S.C. Section 1341.

⁶ The conditions are set out in the opinion below at 8 NRC 176.

⁷ 10 CFR 50.10(e) establishes the prerequisites for and terms of LWA's. The Director of Nuclear Reactor Regulation issued an appropriately conditioned LWA for the Black Fox station on July 26, 1978.

Argument of this appeal was delayed by counsel's conflicting obligations. In the interim, we considered and denied intervenors' motions to stay pending appeal the effectiveness of the LWA. ALAB-498, 8 NRC 315 (1978); ALAB-505, 8 NRC 527, *reconsideration denied*, ALAB-508, 8 NRC 559 (1978).

⁸ Because it authorizes an LWA, the Licensing Board's "partial initial decision" is appealable as of right on the exceptions of an aggrieved party. See *Toledo Edison Company* (Davis-Besse Station), ALAB-300, 2 NRC 752, 758 (1975); *Public Service Company of Indiana* (Marble Hill Station, Units 1 and 2), ALAB-461, 7 NRC 313 (1978) (LWA).

Two of the applicants' three exceptions were mooted below when the Licensing Board reconsidered aspects of its initial rulings. See LBP-78-28, *supra*, 8 NRC 281.

⁹ 10 CFR 50.10(e)(2) and 51.52(c)(1).

ramifications of their proposed actions “to the fullest extent possible,”¹⁰ intervenors assert that this standard was not satisfied by the Board’s application of the “rule of reason” approach articulated in *NRDC v. Morton*, 458 F.2d 827, 834 (D.C. Cir. 1972). They argue that *Morton* “deals with the scope of alternatives [to the proposed action] to be considered,” but not to the remainder of the NEPA evaluation.

There is no need for us to reconcile the two approaches; the authors of the *Morton* decision have done so themselves. NEPA, the court explained, “ ‘must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible’ But implicit in this rule of reason is the overriding statutory duty of compliance with [environmental] impact statement procedures ‘to the fullest extent possible.’ ”¹¹ Mr. Justice Marshall put it a different way:

[t]he essential requirement of the NEPA is that before an agency takes major action, it must have taken “a ‘hard look’ at the environmental consequences.” In evaluating the adequacy of EIS’s the Courts of Appeals have enforced this essential requirement, tempered by a practical “rule of reason.”¹²

As the Justice’s observation suggests, this standard is now well accepted. It has been applied by the courts¹³ and this Commission’s tribunals¹⁴ for many years as the test for judging NEPA compliance. Accordingly, the Licensing Board did not err in using it in evaluating the record. To the extent that the approach intervenors espouse would depart from this test, we must reject it.¹⁵

¹⁰ 42 U.S.C. Section 4332.

¹¹ *Scientists’ Institute for Public Information v. AEC*, 481 F.2d 1079, 1092 (D.C. Cir. 1973), quoting *NRDC v. Morton*, *supra* (ellipsis in original, footnotes omitted).

¹² *New York v. Kleppe*, 429 U.S. 1307, 1311 (1976) (in chambers, citations omitted).

¹³ See, e.g., *Kleppe v. Sierra Club*, 427 U.S. 390, 410 fn. 21 (1976), and cases cited; *New England Coalition v. NRC*, 582 F.2d 87, 95 (1st Cir. 1978); *Culpeper League v. United States*, 574 F.2d 633, 634 (D.C. Cir. 1978); *National Helium Corp. v. Morton*, 486 F.2d 995, 1002, 1004 (10th Cir. 1973), *certiorari denied*, 416 U.S. 993 (1974).

¹⁴ *Boston Edison Company* (Pilgrim Station, Unit 2), ALAB-479 7 NRC 774, 779 (1978); *Northern States Power Company* (Prairie Island, Units 1 and 2), ALAB-455, 7 NRC 41, 48 (1978) and cases cited. See also, *Consumers Power Company* (Midland Plant, Units 1 and 2), CLI-74-5, 7 AEC 19, 24 (1974), *reversed sub nom. Aeschliman v. United States*, 547 F.2d 622 (D.C. Cir. 1976), *reversed sub nom. Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519 (1978).

¹⁵ We are not alone in doing so. The contention that the “rule of reason” applies only in evaluating alternatives to the action proposed is simply at odds with the decided cases. *County of Suffolk v. Secretary of Interior*, 562 F.2d 1368, 1375 (2nd Cir. 1977); *Sierra Club v. Froehlke*, 534 F.2d 1289, 1299 (8th Cir. 1976); *Sierra Club v. Morton*, 510 F.2d 813, 818-19 (5th Cir. 1975); *Trout Unlimited v. Morton*, 509 F.2d 1276, 1281-83 (9th Cir. 1974); *Life of the Land v. Brinegar*, 485 F.2d 460, 468-69 (9th Cir. 1973); *Scientists’ Institute for Public Information v. AEC*, *supra*, 481 F.2d at 1092.

2. Indian water rights. Intervenors moved the Licensing Board to add the Cherokee Indian Nation and the Interior Department's Bureau of Indian Affairs as parties to the proceeding or, alternatively, to dismiss the application for failure to join necessary parties. Intervenors' memorandum in support of their motion represented "[w]e also know that the Cherokee Nation considered that it has vested rights in these waters," referring to proposed sources of cooling water for the Black Fox facility.¹⁶ The memorandum did not, however, disclose the factual basis underlying this representation¹⁷ and it was not accompanied by affidavits or other papers that did so. Neither the Cherokee Nation nor any of its members sought to intervene in the proceeding below and intervenors do not purport to represent them.

The other parties opposed the motion. The Licensing Board denied it on the ground that Commission Rules of Practice do not provide for adding parties in this fashion.¹⁸ The Board appeared amenable to a staff suggestion that the issue of Indian water rights might be proposed as a contention for litigation at the hearing, but this possibility was not pursued.¹⁹

Intervenors now contend that the Licensing Board erred in failing to consider the possibility that the Cherokee Nation has inchoate claims on the sources of cooling water for Black Fox. They do not allege that there are any such claims. Rather, on the theory that their obligation under NEPA is merely "to state, meaningfully and clearly" matters they believe ought to be considered, intervenors assert that they "demonstrated that at least a colorable claim exists." Having done so (in their judgment), they now argue that the Board's decision may not stand and the LWA must be withdrawn until the issue is considered and resolved at a hearing.²⁰

Intervenors' position is not well taken. The principal relief sought below—ordering joinder of the Cherokee Nation as a party to the proceeding—is legally unavailable because that Indian Nation is immune from suit. It cannot be made an involuntary party even in judicial proceedings, where procedures available under the Federal Rules of Civil Procedure may be invoked. *Manygoats v. Kleppe*, 558 F.2d 556 (10th Cir. 1977). Nor is the Nation an indispensable party in the sense that proceedings may not be conducted

¹⁶ *Memorandum in Support of Intervenors' Motion to Add Cherokee Nation and United States Department of the Interior — Bureau of Indian Affairs*, January 3, 1977.

¹⁷ *Intervenors' memorandum* (fn. 16, *supra*), also cited *Brewer-Eliot Oil and Gas Co. v. United States*, 260 U.S. 77 (1922), *United States v. Grand River Dam Authority*, 363 U.S. 229 (1960); and *Choctaw Nation v. Oklahoma*, 397 U.S. 620 (1970). None of those decisions is directed toward the problem intervenors sought to raise.

¹⁸ *Second Prehearing Conference Order*, January 13, 1977 at 3. The Board's understanding was correct. The Federal Rules of Civil Procedure apply only in the district courts and Federal Rules 19 and 20 have no counterparts in Commission practice.

¹⁹ Tr. 156.

²⁰ *Intervenors' Opening Brief* at 10-11, 17-18.

without them. At issue below was the adequacy under NEPA of the Black Fox environmental impact statement. But, as the court of appeals explained in *Manygoats*, “NEPA is concerned with national environmental interests. Tribal interests may not coincide with national interests. We find nothing in NEPA which excepts Indian lands from national environmental policy.” *Id.* at 559. The court therefore held that the Cherokee Nation was not an indispensable party, notwithstanding that *Manygoats* involved a challenge to the adequacy of the Interior Department’s environmental impact statement concerning uranium mining on Cherokee lands. *A fortiori*, the Cherokees are not indispensable in the instant proceedings, where even the existence of their claims is problematical.

Although the Cherokee Nation was not needed as a party, the question remains whether the Board was obligated to consider the possibility of Cherokee interest in waters needed for Black Fox. In the circumstances of this case, we think not. The Environmental Statement disclosed both the facility’s need for cooling water and the sources proposed to be tapped for it. That statement was circulated to the Interior Department and to the State of Oklahoma.²¹ Although these governmental entities could reasonably be expected to have been aware of such matters, neither so much as hinted at a possibility of any Indian claims on those waters. To the contrary, the Muskogee, Oklahoma area office of the Bureau of Indian Affairs responded that “there is not restricted Indian Land involved in this project, and we have no comments as to any possible environmental effects.”²² This fairly indicates the absence of Indian claims.

Neither the Staff nor the Board was obliged to investigate this issue further. NEPA does not command exploration of every possibility, however remote or speculative.²³ If intervenors wished the matter of Indian water rights given additional consideration, they had the “burden of coming forward with an affirmative showing” that would give reasonable minds cause to do so.²⁴ A bare assertion that those rights “may exist” is not enough. In terms directly responsive to intervenors’ arguments, the Supreme Court has stressed that “administrative proceedings should not be a game or a forum to engage in unjustified obstruction or by making cryptic and obscure reference to matters that ‘ought to be’ considered and then, after failing to do more to bring the matter to the agency’s attention, seeking to have that agency determination vacated on the ground that the agency failed to consider matters ‘forcefully presented.’” *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553-54 (1978).

²¹ Staff Exh. 1 at ii.

²² *Id.* at F-2 (Appendix F).

²³ *NRDC v. Morton*, *supra*, 458 F.2d at 835, 837-38; *Life of the Land v. Bringegar*, *supra*, 485 F.2d at 469.

²⁴ *Midland*, *supra*, CLI-74-5, 7 AEC at 32.

In sum, having made an insufficient showing of potential Indian claims to the waters in question, intervenors may not now complain that the issue was inadequately pursued.

3. Investigation of discriminatory practices. Intervenors asserted below that the NRC lacks jurisdiction to license construction of Black Fox until the applicants “demonstrate compliance with Title VII of the Civil Rights Act of 1964, the Equal Pay Act of 1963, and the Age Discrimination in Employment Act of 1967.” On this ground, they moved the Licensing Board either to dismiss the construction permit application or to require the applicants to demonstrate compliance with those statutes at an evidentiary hearing.²⁵ But intervenors failed to mention any particular instance of conduct on applicants’ part that, if true, might constitute a violation of those statutes, much less suggest that they themselves were affected by any such practices.

The Licensing Board denied this motion as raising matters beyond the scope of the proceeding. In doing so, however, the Board indicated it would reconsider if intervenors could assert the existence of such violations related to the health, safety, or environmental issues that the Board had been convened to hear.²⁶ Intervenors did not renew their motion along those lines.

Intervenors reassert here that the Board’s failure to investigate whether the applicants engaged in discriminatory employment practices was error. Their position is bottomed on their understanding of *NAACP v. Federal Power Commission*, 425 U.S. 662 (1976), a decision which they misread. In that case, the Supreme Court held that the Power Commission’s duties encompass preventing regulated utilities from including illegal, duplicative, or unnecessary labor costs in their rate bases and instructed the agency that, “[T]o the extent that such costs are demonstrably the product of a regulatee’s discriminatory employment practices, the Commission should disallow them.” *Id.* at 668. The Court emphasized, however, that the FPC was to do so only “[t]o the extent that these and other similar costs, such as attorneys’ fees, can be or have been demonstrably quantified by judicial decree or the final action of an administrative agency charged with consideration of such matters . . .” *Ibid.* The Court specifically rejected the argument that the agency’s statutory obligation to protect the “public interest” required it to assume original jurisdiction over charges of employment discrimination. *Id.* at 670-72.

The teachings of *NAACP v. FPC* thus support the Licensing Board’s decision on this point. The Nuclear Regulatory Commission’s mandate is to administer the Atomic Energy Act of 1954 and related enactments controlling uses of nuclear energy. Like the statutes construed in *NAACP v. FPC*, those

²⁵ *Intervenors’ Motion of June 24, 1976.*

²⁶ Special Prehearing Conference Order of August 4, 1976, at 16-17. By order dated October 13, 1976, the Licensing Board also denied intervenors’ motion to certify the question for our review prior to final decision pursuant to 10 CFR 2.718(i) and 2.785(a)(1); see Section 2.730(f).

administered by this Commission are not aimed at eradicating discriminatory employment practices. The laws intervenors cite as having such goals look to other agencies for enforcement.²⁷

To be sure, impermissible labor practices that directly affect the Commission's statutory responsibilities come within its jurisdiction. For example, the NRC may step in if a construction worker is fired for reporting unsafe building practices to NRC inspectors. *Union Electric Company* (Callaway Plant, Units 1 and 2), ALAB-527, 9 NRC 127, 132-39 (1979).²⁸ But the Licensing Board was not required to *presume* the applicant guilty of discriminatory employment practices that adversely affect Commission-licensed activities. When the intervenors declined even to plead²⁹—much less demonstrate—such conduct by the applicants, the Board was entitled to disregard the issue.³⁰ See, *Vermont Yankee Power Company v. NRDC*, *supra*; *Midland*, *supra*.³¹

4. Waiver of Section 401 certification. Before an applicant may be awarded an LWA (or any federal license that may result in a discharge into navigable waters) it must satisfy section 401 of the Federal Water Pollution Control Act, 33 U.S.C. Section 1341.³² That provision obliges the applicants to obtain a certification from the appropriate Oklahoma agency that discharges from the Black Fox facility will meet state standards. The section also provides, however, that “[i]f the State, interstate agency, or Administrator [of the

²⁷ Federal responsibility for enforcing the provisions of the Civil Rights Act of 1964 dealing with employment discrimination by private firms is vested in the Equal Employment Opportunity Commission by 42 U.S.C. Section 2000-5; the Secretary of Labor is charged with enforcing both the Equal Pay Act of 1963 and the Age Discrimination in Employment Act of 1967. 29 U.S.C. Sections 204, 206, 217, 621-24.

²⁸ *Cf.*, *NAACP v. FPC*, *supra*, 425 U.S. at 670 fn. 7.

²⁹ *I.e.*, submit a contention raising the matter. The Licensing Board twice brought this to intervenors' attention. See the Board's Special Prehearing Conference Order of August 4, 1976 at p. 16 and its Memorandum and Order of October 13, 1976 at pp. 1-4.

³⁰ Our ruling does not condone discrimination; it merely reflects that parties must press for relief in the forum Congress has chosen. See *NAACP v. FPC*, *supra*, 425 U.S. at 672-74 (concurring opinion of Burger, Ch.J.)

³¹ Intervenors also contend that the Board erred in computing plant security costs by excluding costs associated with the “deprivation of civil liberties.” Intervenors did not, however, proffer any evidence to counter that introduced by the other parties, which the Board relied on in determining those costs. Nor do intervenors elucidate how licensing construction of a nuclear-powered electric generating plant would infringe civil liberties. In the circumstances, it is sufficient to note our concurrence in the Licensing Board's treatment of these issues. See 8 NRC at 168, paragraphs 211 and 212. See, also, the discussion accompanying our denial of intervenors' earlier motion to revoke the LWA on grounds apparently related to the “civil liberties” point. ALAB-498, 8 NRC 315, 316-17 (1978).

³² *Public Service Company of Indiana* (Marble Hill, Units 1 and 2), ALAB-459, 7 NRC 179, 189 and ALAB-493, 8 NRC 253, 256 (1978); *Washington Public Power Supply System* (Hanford No. 2 Plant), ALAB-113, 6 AEC 251 (1973).

Environmental Protection Agency], as the case may be, fails or refuses to act on a request for certification, within a reasonable period of time (which shall not exceed one year) after receipt of such request, the certification requirements of this subsection shall be waived with respect to such Federal application.”

The Oklahoma Water Resources Board did not act on the applicants’ request for Section 401 certification within a year of its submission and the Licensing Board held the requirement waived. 8 NRC at 122-23. Intervenors challenge that ruling, arguing that because the applicants’ Environmental Report and the staff’s Final Environmental Statement on Black Fox did not accompany the certification request and were not given to the state agency within the following year, the request lacked sufficient information to trigger the running of the limitation period.

The point is not well taken. Applicants drew up the Environmental Report to satisfy the Commission’s regulations, not the Water Board’s, and the Final Environmental Statement was prepared by the staff, not the applicants.³³ Both are largely devoted to subjects of no interest to the Oklahoma Water Resources Board. Be that as it may, it is not disputed that the Water Board (1) lacks requirements for submitting Section 401 certification requests or for acting upon them, (2) did not ask for the two reports in question, and (3) never claimed that applicants refused to supply it with relevant information.³⁴ In these circumstances, we are at a loss to see how the applicant’s failure to supply documents the Water Board neither required nor requested should excuse its inaction.

Intervenors point to the Water Board’s November, 1977 letters as evidencing that the applicants’ certification request is still under consideration and, therefore, cannot be said to have been waived. But the Oklahoma agency’s time to act ran out a year earlier; intervenors’ reasoning would let it lift itself by its own bootstraps over the statutory deadline.³⁵ Congress enacted the one year limit to prevent precisely by such “sheer inactivity.”³⁶ Because the

³³ See 10 CFR 51.20.

³⁴ Tr. 2036-39; 2087-89; 2300-06; Appl. Exh. 24. According to the September 1977 testimony of the chief of the Water Resources Board’s Water Quality Division, as of that date—approximately two years after the Section 401 request was filed—the Oklahoma Board was still “reviewing” the matter. Tr. 2089. See also Ap. Bd. Tr. 10 (acknowledgement by intervenors’ counsel of the Water Board’s lack of rules governing applications for Section 401 certificates).

³⁵ Cf., *Federal Maritime Commission v. Seatrain Lines*, 411, U.S. 726, 746 (1973).

³⁶ Section 401(a) was initially enacted as section 21(a) of the Water Quality Improvement Act of 1970, P.L. 91-224, 84 Stat. 91. The Conference Committee Report on the provision explains that,

In order to insure that sheer inactivity by the State . . . will not frustrate the Federal application, a requirement . . . is contained in the conference substitute that if within a reasonable period, which cannot exceed one year,

(Footnote continued on next page)

intervenor's argument runs counter to that statutory purpose, we may not accept it.

Intervenors also contend that the EPA Administrator alone may determine whether a state has waived the certification requirement. They misconstrue the statute. Section 401(a)(1) specifies that only in the "case where a State or interstate agency *has no authority* to give such a certification, such certification shall be from the Administrator" (emphasis supplied). The Oklahoma Water Resources Board has ample authority to give these certifications. As we noted, a Board official testified that his agency has provided Section 401 certifications in other situations.³⁷ Furthermore, when state officials fail to act there is no need to resort to EPA for relief. EPA regulations confirm this; they require the federal licensing agencies to notify EPA when a state has waived certification, not *vice-versa*. 40 CFR Section 123.16(b). That notice was provided when a copy of the Licensing Board's decision was furnished to EPA.³⁸

Intervenors voice concern that Oklahoma water pollution regulations might be defeated if we uphold the waiver ruling. Their concern is unwarranted. Federal Water Pollution Control Act directives do not preempt higher state standards. And, with or without certification, the applicants must satisfy the state's water pollution requirements.³⁹ Nothing in the Licensing Board's action implies otherwise. The waiver simply allows the award of an LWA or a construction permit before the Water Board acts.

5. Recirculation of the Final Environmental Statement. In accordance with Commission procedures,⁴⁰ the staff prepared and circulated a draft environmental impact statement for the Black Fox facility. In light of comments submitted to it on that draft, the staff completed a Final Environmental Statement (FES) which it similarly circulated and introduced into evidence pursuant to Commission regulations.⁴¹

A licensing board acts for the Commission in rendering initial decisions. Consequently, to the extent its environmental determinations diverge from

(Footnote continued from previous page)

after it has received a request to certify, the State . . . fails or refuses to act on the request for certification, then the certification requirement is waived.

Conf. Rep. No. 91-940, 91st. Cong., 2nd Sess. (1970), reprinted in 2 *U.S. Code Cong. & Adm. News* 2712, 2741 (1970).

³⁷ Tr. 2035-40, 2089-92.

³⁸ See 10 CFR 51.52(b)(3) and 51.26(c).

³⁹ 33 U.S.C. Section 1370; *cf.*, *United States Steel Corp. v. Train* 556 F.2d 822, 835 (7th Cir. 1977); *Minnesota ex rel. Spannaus v. Hoffman*, 543 F.2d 1198, 1207-1208 (8th Cir. 1976), *certiorari denied*, 430 U.S. 977 (1977). See also R. Zener, "The Federal Law of Water Pollution Control", in *Federal Environmental Law* (Env. Law Inst. 1974), at 733-34.

⁴⁰ 10 CFR 51.22-51.25.

⁴¹ See 10 CFR 51.26 and 51.52(b)(1).

those in the staff's FES, the latter is deemed modified and the Board's decision is distributed to those who commented on the FES.⁴² In this case, the intervenors challenged the adequacy of certain portions of the Black Fox FES. The Licensing Board consequently modified that statement in some respects and the Board's decision was circulated as described. The intervenors insist that this was not enough. They construe NEPA to require as well the withholding of "administrative action"—which we take to mean issuance of the LWA—and to call for recirculation not only of the decision but also of the FES and the entire hearing record.

We need not rehearse the reasons why we disagree with intervenors' position; we deem it sufficient to note that the procedures followed here are not novel and have been held by the courts to satisfy NEPA.⁴³ There may well be instances where a licensing board modifies an FES so substantially that its recirculation is required and a license withheld in the interim.⁴⁴ The staff suggests such cases may arise, for example where an FES omits discussion of issues mandated by NEPA or disregards broad areas of environmental impact. And recirculation may be in order if the proposed project has been so changed by the Board's decision as not to have been fairly exposed to public comment during the initial circulation of the FES.⁴⁵

Our own perusal reveals no discrepancies of that magnitude between the Black Fox FES and the Licensing Board's decision. However, the intervenors assert that the decision below effected "major changes in the form of corrections of erroneous matter in the FES" that were "very significant," including corrections of "design representations [that] were erroneous" and "other fundamental errors."⁴⁶ Nevertheless, the intervenors do not elucidate these naked assertions, let alone provide adequate record references.⁴⁷ We are thus left without sufficient information to dispose of their arguments

⁴² 10 CFR 51.52(b)(3).

⁴³ *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 29 fn. 43 (1978), *affirmed sub nom. New England Coalition v. NRC*, 582 F.2d 87, 93 (1st Cir. 1978); *Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1294 fn. 5 (D.C. Cir. 1975); *Ecology Action v. AEC*, 492 F.2d 998, 1001-02 (2nd Cir. 1974).

⁴⁴ *See, e.g., Boston Edison Company*, (Pilgrim Station, Unit 2), ALAB-479, 7 NRC 774 (1978), *affirming* LBP-77-66, 6 NRC 889 (1977).

⁴⁵ *See, e.g., NRDC v. Morton*, 458 F.2d 827 (D.C. Cir. 1972); *I-291 Why? Ass'n v. Burns*, 372 F.Supp. 223 (D.Conn. 1974), *affirmed*, 517 F.2d 1077 (2nd Cir. 1975); and *Sierra Club v. Lynn*, 364 F.Supp. 834 (W.D. Tex. 1973).

⁴⁶ *Intervenors' Brief* at 130-31.

⁴⁷ *See* 10 CFR 2.762(a). The Federal Rules of Appellate Procedure impose similar requirements in Rule 28(a)(4). *Compare, Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-270, 1 NRC 473, 475 (1975), and *Public Service Electric and Gas Company*, (Hope Creek Station, Units 1 and 2), 5 NRC 769, 770 (1977) (both discussing Commission briefing requirements) with *United States v. White*, 454 F.2d 435, 439 (7th Cir. 1971) (discussing the Federal Rules of Appellate Procedure).

intelligently. Disregarding similarly vague contentions in an appellant's brief, the Court of Appeals for the Seventh Circuit cogently observed that "[i]t is impossible for a [tribunal] to consider general allegations such as these." *United States Steel Corp. v. Train, supra*, 556 F.2d at 837.⁴⁸ We have no choice but to follow that course here. Because inadequate briefing has made their arguments "impossible of resolution," we dismiss intervenors' exceptions on this point.

6. Health Effects of Low Level Emissions. Light-water-cooled nuclear power reactors like Black Fox must be designed and built so that during normal operation the release of radioactive effluents is "as low as is reasonably achievable." 10 CFR 50.34a. That standard is explained and quantified in Commission guidelines published as Appendix I to 10 CFR Part 50.⁴⁹ Applications to construct a plant of this type must describe the equipment to be installed to control radioactive effluents and identify the design objectives and the means to be employed to meet the standards. *Ibid.* In addition, section I of Appendix I provides that nuclear power reactor "[d]esign objectives and limiting conditions for operation conforming to the guidelines of this Appendix shall be deemed a conclusive showing of compliance with the 'as low as is reasonably achievable' requirements of 10 CFR 50.34a . . ." Where it applies, Appendix I is a binding Commission regulation notwithstanding its denomination as an appendix.⁵⁰

(a) In the hearing below, intervenors challenged the representation that Black Fox would comply with the requirements of Appendix I (Contention 11). Intervenors also asserted that neither the applicants nor the staff had adequately assessed the somatic and genetic effects of low-level gaseous and liquid radioactive discharges expected to be emitted during normal operation of the nuclear plant (Contention 36).

With the staff's backing, the applicants moved for summary disposition of Contention 11. The motion was supported with affidavits evidencing compliance with Appendix I.⁵¹ The Board granted it on the ground that intervenors' response failed to raise a genuine issue of material fact for trial on this contention.⁵²

Applicants also sought summary disposition of Contention 36. They pointed out that the Commission itself had determined the somatic and

⁴⁸ *Accord, Duke Power Company* (Catawba Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413-14 (1976) and cases there cited.

⁴⁹ Hereinafter cited as Appendix I.

⁵⁰ *Rulemaking Hearing* (Docket No. RM-50-2), CLI-75-5, 1 NRC 277, 328 (1975).

⁵¹ Commission Rules of Practice governing motions for summary disposition, 10 CFR Section 2.749, are modelled on Rule 56 of the Federal Rules of Civil Procedure (summary judgment).

⁵² LBP-77-46, 6 NRC 167, 168-69 (1977) (rulings on summary disposition motions).

genetic consequences of low-level emissions in the rulemaking proceeding that led to its promulgation of Appendix I.⁵³ From this premise they reasoned that once compliance with that Appendix had been demonstrated, no occasion remained to litigate the nature and extent of health effects resulting from emissions at those levels. The applicants acknowledged that the impact of anticipated health effects must be factored into the NEPA cost/benefit balance for the plant. However, they insisted that the Commission's determinations should be used for that purpose. The applicants told the Board that those determinations form an integral part of Appendix I and that the proposed reconsideration of them would challenge the validity of the Appendix in violation of 10 CFR 2.758(a), the rule prohibiting attacks on Commission regulations in individual licensing proceedings.⁵⁴

The other parties opposed applicants' motion for summary disposition of Contention 36 as resting on a misconception of Appendix I. The Licensing Board agreed and denied the motion.⁵⁵ Instead, it heard witnesses, took evidence and made its own determination of the health and environmental consequences of routine low-level emissions. Finding those releases so small that any adverse health effects (if detectable at all) would be miniscule and substantially less than would be created by the alternative of a coal-fired plant of comparable size, the Board concluded that these health effects would not "weigh strongly against Black Fox either in the environmental balance or in the comparison with alternatives." 8 NRC at 147.

(b) Intervenors excepted to the Licensing Board's rulings on both contentions. With respect to Contention 11 (compliance with Appendix I), their brief is mainly devoted to a generalized discussion of the legal standards applicable to summary disposition motions. But intervenors do not specify how the Board departed from those standards. Neither do they point to evidence suggesting the existence of a genuine issue of material fact that should have caused the Board to deny the motion.⁵⁶ As in judicial proceedings, there is no occasion to conduct a trial in these circumstances.⁵⁷

⁵³ Docket No. RM-50-2, *supra*, fn. 50.

⁵⁴ 10 CFR 2.758(a) provides in pertinent part that "any rule or regulation of the Commission, or any provision thereof, issued in its program for the licensing and regulation of production and utilization facilities, . . . shall not be subject to attack by way of discovery, proof, argument or other means in any adjudicatory proceeding involving initial licensing . . ."

⁵⁵ 6 NRC at 169-70.

⁵⁶ Intervenors' argument that the applicants' affidavits were insufficient because based only "on information and belief" is not well taken. It is clear from examining those documents that each affiant was "competent to testify about the matters stated therein" as contemplated by the summary disposition rule, 10 CFR 2.749(b).

⁵⁷ We have, nevertheless, reviewed the record on our own initiative for compliance with Appendix I and we are satisfied that this has been established.

Summary disposition of the contention was therefore appropriate.⁵⁸

Intervenors make even less of an attempt to persuade us that the Licensing Board erred in ruling that the health effects of routine emissions would be negligible. The decision below explains the basis for that ruling at some length. Intervenors's exceptions challenge virtually all the Board's findings on the point. Nevertheless, here, as elsewhere, they simply fail to "flesh out the bare bones of their exceptions" with information and discussion adequate to allow an intelligent disposition of their arguments.⁵⁹ Notwithstanding the lack of assistance from intervenors, we have explored the basis for these findings on our own initiative. For purposes of deciding this appeal, we think it sufficient to state that the findings reflect the record made before the Board and we perceive no reasons to disturb its conclusions based upon that record.

(c) As we noted, the Licensing Board disagreed with the applicants' interpretation of Appendix I and made a *de novo* determination of the health effects of low level emissions—albeit reaching a result in the applicants' favor. The applicants, however, were not satisfied; they would prefer to have the point resolved on their own theory. Applicants therefore excepted to the ruling in order to seek our review not of the result but of the rationale employed in reaching it.

The intervenors responded, "The short answer to Applicants' position is that, having won the ultimate issue, they are not an aggrieved party." The staff agrees with the intervenors that the applicants as the prevailing party may not appeal from a ruling in their favor, citing, *inter alia*, our decision in *Public Service Company of Indiana* (Marble Hill Station, Units 1 and 2), ALAB-459, 7 NRC 179, 202 (1978).

It is correct that parties satisfied with the result on an issue may not themselves appeal. But if the other side appeals they are free to defend a result in their favor on any ground presented in the record, including one rejected below. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-282, 2 NRC 9, 10 fn. 1 (1975); *Niagara Mohawk Power Corp.* (Nine Mile Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). The role of Appendix I

⁵⁸ Intervenors also object to the Licensing Board's summary disposition of a number of other unspecified contentions. We affirm the Board's actions for the same reasons we have approved its disposition of Contention II.

⁵⁹ See, *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-270, 1 NRC 473, 475 (1975). By way of illustration, the Board found the health effects of low level emissions from normal operation of Black Fox to amount to no more than "an indistinguishably small fraction of those occurring without the plant." The finding was made in the course of an extensive exploration of the subject with appropriate citations to the record, including testimony of two indisputably qualified medical radiobiologists with broad research experience in this area. 8 NRC 145-147. In the face of this, intervenors assert without supporting references or further elucidation that "[t]here is ample evidence that low levels of radiation cause and contribute to adverse health effects now and for future generations." (Brief at 38-39.) An *ipse dixit* is no substitute for reasoned discourse based on the record of the case.

was litigated in this case and the intervenors as well as the applicants excepted to the Licensing Board's decision on the effects of routine low-level emissions. The applicants consequently may defend the result by renewing on appeal their arguments about the intendment of Appendix I.

We therefore may reach the question and Dr. Johnson would do so. For reasons explained in his concurring opinion (pp. 808 *ff. infra*), he would basically adopt the applicants' interpretation of Appendix I. Mr. Salzman, however, is not of like mind. Without rehearsing all the counter arguments here, he notes that the staff marshalled substantial reasons why the Appendix I guidelines should not be understood to bar the litigation in individual licensing cases of the anticipated health effects of routine emissions. Because an alternate ground of decision requires affirmance of the ruling below on this point in any event (see pp.788-789 *supra*), it is unnecessary to construe Appendix I in this appeal; Mr. Salzman believes it the wiser course to refrain from doing so.

The Appendix I issue accordingly is not decided by this Board. However, whether to proceed by generic rule applicable to all power reactors or to allow case-by-case adjudication of the health effects of routine low-level emissions is a policy judgment.⁶⁰ In our view, it is a significant one for the conduct of future proceedings and one that will undoubtedly recur unless it is authoritatively resolved. These circumstances make its certification in order under 10 CFR 2.785(d))⁶¹ and we submit the following question to the Commission:

Where routine radioactive emissions from a nuclear power plant will be kept 'as low as is reasonably achievable' in accordance with Appendix I, is litigation of the health effects of those emissions in an adjudicatory proceeding involving initial licensing barred by 10 CFR 2.758 as an impermissible attack on Commission regulations?⁶²

7. Consideration of "Class 9 Accidents.

With our permission,⁶³ intervenors filed a supplemental brief raising as an additional ground for reversal the Licensing Board's failure to consider the

⁶⁰ *Cf.*, *Offshore Power Systems* (Floating Nuclear Plants), CLI-79-9, 10 NRC260 (September 14, 1979).

⁶¹ 10 CFR 2.785(d) provides that an "Appeal Board may, either in its discretion or on direction of the Commission, certify to the Commission for its determination major or novel questions of policy, law or procedure." See, *Offshore Power Systems* (Floating Nuclear Plants), ALAB-500, 8 NRC 323, 324-25 (1978), *on certification*, CLI-79-9, 10 NRC 257 (see fn. 60, *supra*).

⁶² 10 CFR 2.758(a) provides in pertinent part that, with exceptions not applicable to this case, "any rule or regulation of the Commission, or any provision thereof, issued in its program for the licensing and regulation of production and utilization facilities . . . shall not be subject to attack by way of discovery, proof, argument, or other means in any adjudicatory proceeding involving initial licensing subject to this subpart . . ." Appendix I is a binding Commission regulation where it applies. See fn. 50, *supra*.

⁶³ App. Bd. Tr. 136.

consequences of a "Class 9 accident." Briefly, that term of art refers to certain potentially severe but extremely unlikely events. Because of their improbability, plants need not be designed to guard against their occurrence. For a more complete description, see *Offshore Power Systems, supra*, ALAB-489, 8 NRC at 209-25.

The staff's response was essentially twofold: First, that the appeal was premature because the hearing below concerned only NEPA and site suitability issues and the place for consideration of Class 9 accident contention would be in the radiological health and safety phase of the proceeding still to come. Second, though we held in *Offshore Power* that consideration of Class 9 events at floating plants was permissible, we had also ruled in that case that Commission policy precluded taking cognizance of such matters in individual licensing cases involving land-based reactors. The applicants joined in the latter argument.

Events have overtaken such arguments, whatever their merits at the time they were made. Since then, on our referral,⁶⁴ the Commission has reviewed the *Offshore Power* decision. While it confirmed our holding that Class 9 accidents may be considered in licensing proceedings concerning offshore plants, it went on to indicate that it is rethinking the policy (initially formulated in 1971 by the Atomic Energy Commission) against taking up such matters in cases involving land-based plants. *Offshore Power Systems (Floating Nuclear Plants)*, CLI-79-9, 10 NRC 257 (September 14, 1979). The existing policy on Class 9 accidents was not set aside, however. The Commission instead announced its intention to conduct a formal rulemaking, proceeding to aid in that reevaluation. In the interim, it directed the staff to "bring to our attention, any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered." *Id.* at

...

This leads us to two conclusions: First, that the Board below acted in accordance with existing Commission policy in not considering Class 9 accidents at that time. Second, that the Commission has reserved to itself the right to decide whether such matters are to be considered in any given case until it adopts a new general policy. Our actions must of course be guided by the Commission's latest instructions.⁶⁵

Those instructions, however, do not specify when the staff is to render its advice on the need to consider Class 9 accidents in individual licensing proceedings. It is unfortunate that the staff has not yet furnished that advice in this case. The proceeding before the Licensing Board is now half completed.

⁶⁴ ALAB-500, 8 NRC 328 (1978).

⁶⁵ *Potomac Electric Power Company* (Douglas Point Station, Units 1 and 2), ALAB-218, 8 AEC 79, 82-83 (1974); *Duquesne Light Company*, (Beaver Valley Station, Unit 1), ALAB-310, 3 NRC 133, 34 (1976); *Duke Power Company* (Catawba Station, Units 1 and 2), ALAB-355, 4 NRC 397, 417, *affirmed*, CLI-76-28, 4 NRC 618 (1976).

Manifestly, if that Board is to examine the ramifications of Class 9 events, the time to instruct it to do so is now, not after the record closes and its decision issues. In this vein, we note that the Commission has previously expressed dissatisfaction when issues important to it are brought to its attention late. See, e.g., *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 6-7 (1978).

Accordingly, we direct the staff to *advise the Commission promptly* (within 30 days) of the reasons why it believes the consequences of Class 9 accidents should or should not be considered in this case.⁶⁶ Within 30 days thereafter, the other parties may submit their own views on the question *to the Commission*. The Licensing Board shall not consider the consequences of a Class 9 accident at the Black Fox site unless the Commission instructs it to do so.

We now turn to the intervenors' "propositions" that turn on controverted evidence. Our review of the decision below in the light of the record leads us to conclude that none is meritorious.

A. Suitability of the Black Fox site.

Before a licensing board may authorize the Director of Nuclear Reactor Regulation to issue a limited work authorization, the Board must find (among other things) that the "site is a suitable location for a [nuclear power] reactor of the general size and type proposed [to be built there]." 10 CFR 50.10(e)(2). The Board found the Black Fox site suitable⁶⁷ and intervenors challenge that finding as inadequately supported by the record in several respects.

1. Seismicity. Nuclear power plants, like other structures, are subject to the possibility of damage from earthquakes. They must be able to close down securely in the face of the severest seismic event likely to affect them. For this reason, regional and local geological and seismological characteristics need be evaluated to determine the "maximum vibratory ground motion" (*i.e.*, shock) that an earthquake might cause at the plant site. In Commission parlance, this is the "safe shutdown earthquake"; a nuclear power plant must be designed to survive it without endangering the community.⁶⁸

The strength of earthquake shock is measured in units of gravitational acceleration, "g." The Board below found no faults at the reactor site capable of movement, an acceleration of 0.12g associated with a safe shutdown earthquake, and the site suitable for a reactor of the size and type proposed as far as seismicity was concerned. 8 NRC at 111. Intervenors challenge those findings.

⁶⁶ We of course intimate no view on the position the staff should take.

⁶⁷ 8 NRC 107-114.

⁶⁸ 10 CFR Part 100, Appendix A, Sections II, III(c) and IV. The requirement is cast in terms of the plant's safety systems retaining their capability to prevent offsite exposure to radiation.

They begin with the contention that the Board below erred in concentrating on whether there were “capable” faults in the site vicinity and in making “no finding at all concerning the existence of any fault regardless of capability.”⁶⁹ But capability in this context is a regulatory term of art. It alludes to a geological feature’s potential for causing earthquakes or other seismic disturbances. The regulations define a “capable fault” in essence as one which has exhibited “[m]ovement at or near the ground surface at least once within the past 35,000 years or movement of a recurring nature within the past 500,000 years” or has given other indications of seismicity.⁷⁰ As our *North Anna* decision explains, the controlling

criteria make it clear that the significance to be attributed to the fault under the site depends on whether it is a ‘capable’ one. In that connection, the criteria set forth with precision the characteristics of a capable fault. Thus, if the fault in question were found to exhibit one or more of those characteristics, then, at a minimum, additional safeguards would have to be built into the design of the four units. On the other hand, if none of those characteristics is present, the fault is not capable, and, under the regulations, its presence can be disregarded.⁷¹

The Board below therefore did not err in focusing on the existence *vel non* of capable faults. Rather, it correctly concentrated on whether there were indications at the Black Fox site of faulting suggestive of potential earthquakes. *See North Anna Environmental Coalition v. NRC*, 533 F.2d 655 (D.C. Cir. 1976).⁷²

Intervenors also argue that the staff and applicants’ seismic witnesses were unqualified, that the investigation of seismic conditions at the site was inadequate because the “trenching” technique of field investigation was not utilized, and that the acceleration value chosen for the safe shutdown earthquake was too low. We find no support for these allegations. The expertise of the witnesses in question is established in the record and intervenors did not challenge their qualifications below.⁷³ To be sure, as

⁶⁹ *Intervenors’ Opening Brief* at 22.

⁷⁰ 10 CFR Part 100, Appendix A, Section III(g).

⁷¹ *Virginia Electric and Power Company* (North Anna Station, Units 1-4, ALAB-256, 1 NRC 10, 14 (1975) (footnote omitted), *affirmed sub nom. North Anna Environmental Coalition v. NRC*, 533 F.2d 655 (D.C. Cir. 1976).

⁷² Witnesses for the applicants and staff did not deny the possibility of faults at the site but testified that they were not capable because investigations had revealed no evidence of movement for several hundred million years. Tr. 1440-41, 1447-48; *Zaman*, fol. Tr. 1260 at 6. Intervenors’ own seismic witness, Mr. Gregg, could not testify that there were capable faults in the area of the site. Tr. 1350-51; 8 NRC at 109, Paragraph 6.

⁷³ Staff witnesses Dr. Stepp and Ms. Wastler were both employed in the Geosciences Branch, Division of Site Safety and Environmental Analysis, Office of Nuclear Reactor Regulation, Dr. (Footnote continued on next page)

intervenor say, trenching is one recognized method of determining the existence of capable faults.⁷⁴ It is not the exclusive method, however, and knowledgeable witnesses testified that the techniques actually used were more than adequate for this purpose.⁷⁵ We have been given no reason to reject their views and we perceive none.

Intervenor's final point here involves the testimony of one seismic witness that the acceleration properly to be associated with the safe shutdown earthquake is 0.18g, not 0.12g, and that the plant should be designed accordingly. As we noted, however, the Licensing Board approved an acceleration value of 0.12g, the figure proposed by the staff and supported by the applicants. The controversy arose when the Board called as its own witness a staff geologist, Dr. L. Reiter, to testify about his belief that the larger value was warranted. The Board's decision describes the conflicting testimony in some detail and we need not repeat it all here.⁷⁶ The gist of Dr. Reiter's position was that the Black Fox site lies in a tectonic province known as the

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Stepp as chief of that branch and Ms. Wastler as a geologist. Dr. Stepp received a B.S. in geology from Oklahoma State University, an M.S. in geophysics from the University of Utah and a Ph.D. in geophysics (seismology) from Pennsylvania State University; Ms. Wastler received both her B.S. and M.S. in geology from Wright State University. The Board's witness, Dr. Reiter (p. 795 *infra*.) is employed as a seismologist in the Geosciences Branch. He received a B.A. in geology from Brooklyn College, both an M.S. in geology (geophysics) and an M.A. in mathematics from the University of Michigan, and a Ph.D. in geology (geophysics) from the University of Michigan. As the intervenors pointed out below (Tr. 1262), the applicants' witness Mr. Zaman was not a geologist and had no training in structural geology. However, he has a B.S. in civil engineering from the University of Kansas and additional training in geotechnical engineering. Furthermore, the applicants' witness who was responsible for the geotechnical investigation, Mr. Waldron, holds a B.S. in geology from the University of Washington and has done graduate work in geology. His prior experience includes 26 years with the U.S. Geological Survey. Not one of these witnesses concluded that trenching was necessary. See *fn. 75, infra*.

⁷⁴According to Dr. Stepp, this technique involves digging a ditch across the fault to determine whether overlying beds of rock or soil are offset over the faultline. These beds can then be dated to provide evidence of recent movement. Tr. 1441-42.

⁷⁵Dr. Stepp testified that there are various ways of dating mineral assemblages in the fault zone to determine whether there has been recent movement along the fault. Tr. 1442. He also testified that both gravity and magnetic surveys can reveal differential displacements in the earth (faults), but they can detect only previously occurring *cumulative* movement, and thus do not indicate recent activity. Tr. 1452. The applicants extensively studied the subsurface in the region surrounding the Black Fox site, primarily by analyzing core borings obtained during various types of drilling. Tr. 1391-92. See also *Zaman* p. 5, fol. Tr. 1260; Applicants' Exhibit No. 3. PSAR Section 2.5. Dr. Stepp explained that the faults in the vicinity of the Black Fox site were caused when the "Ozark dome" was uplifted approximately 250 million years ago. Because there was no evidence of any more recent activity, the staff did not require trenching of these faults. Tr. 1447-48. It should be noted that even the Board's witness, Dr. Reiter, agreed that trenching was not necessary. *Id.* at 1448.

⁷⁶8 NRC at 110-111.

Central Stable Region. A high intensity earthquake that occurred in 1937 at Anna, Ohio in this province cannot be definitely associated with specific geological structures near that town. For this reason Dr. Reiter expressed the judgment that a tremor of similar magnitude should be considered a possibility anywhere within the province—including the Black Fox site. This would mandate the use of a safe shutdown earthquake characterized by an acceleration value of 0.18g.⁷⁷

The staff and applicants did not agree. Their position, presented through staff witnesses Dr. Stepp and Ms. Wastler⁷⁸ and supported by the testimony of experts called by the applicants, is that the seismicity of the Black Fox site is determined by its location in a subregion of the Central Stable Region, the Ozark Uplift Tectonic Province. The Ozark Uplift province has a 100-year history of low seismic activity;⁷⁹ its controlling seismic event is a lesser intensity earthquake that occurred in 1956 near Castosa, Oklahoma, in the adjoining Cherokee Basin tectonic province. Using techniques prescribed by Commission rules for these purposes,⁸⁰ these experts testified that a maximum seismic acceleration of 0.12g would be felt at the Black Fox site, were an earthquake comparable to the one at Castosa to occur on the closest boundary between the Ozark Uplift and the Cherokee Basin provinces. Staff witnesses further testified that there was good reason to believe that the Anna, Ohio earthquake was a localized event associated with geological structures near that town. Were this in fact the case, that earthquake would not properly be attributable to the Central Stable Region as a whole or to the Black Fox site in particular.⁸¹ They acknowledged, however, that the analyses conducted to date were insufficient to confirm this hypothesis.⁸²

The difference in professional judgment regarding this matter boils down, as Dr. Reiter himself conceded, to a choice between the staff's "very, very safe" value of 0.12g and his own "extremely safe" value of 0.18g.⁸³ Our own review of the record satisfies us that the weight of professional judgment is clearly with the position espoused by the staff's and applicants' witnesses and adopted by the Licensing Board.⁸⁴ We therefore concur in that Board's

⁷⁷ Tr. 1403-1406. A "tectonic province" is "a region of the North American continent characterized by a relative consistency of the geologic and structural features contained therein." 10 CFR Part 100, Appendix A, Section III(h). It is used in determining the design basis for vibratory ground motion through identification of the safe shutdown earthquake. *Id.* at Section V(a).

⁷⁸ *Stepp and Wastler*, fol. Tr. 1388.

⁷⁹ Tr. 1396-1400.

⁸⁰ 10 CFR Part 100, Appendix A, Section IV(a). See particularly subsections (5) through (7).

⁸¹ *Zaman*, pp. 3-5, fol. Tr. 1260.

⁸² Tr. 1389-90; *Stepp & Wastler*, p. 5, fol. Tr. 1388; Tr. 1417-18.

⁸³ Tr. 1426.

⁸⁴ 8 NRC at 111.

conclusion that a 0.12g acceleration is appropriate for use in designing the plant to meet the safe shutdown earthquake.⁸⁵

2. Ultimate Heat Sink. A nuclear power reactor must be equipped with a cooling water system to transfer heat from its structures, systems, and components to an "ultimate heat sink."⁸⁶ This is simply a technical term for the water supply system and the attendant reservoirs, conduits, and machinery needed to "operate, shut down, and cool a plant" safely.⁸⁷ The ultimate heat sink has no direct bearing on a particular location's suitability for a nuclear plant. It comes into play in this case only because twin reactors are planned for the Black Fox facility. Whether "the reactors are independent to the extent that an accident in one would not initiate an accident in another" is an element in determining the proper size of the "low population zone"⁸⁸ and related requirements for the facility—dependent reactors requiring larger zones than independent ones.⁸⁹ The need to accommodate the low population

⁸⁵ Subsequent to the decision below, applicants encountered "geological anomalies" in the course of excavating the Black Fox site. Geologists for the staff and the applicants have examined these features and according to reports furnished us (and all parties), determined them to be non-capable faults resulting from "penecontemporaneous non-tectonic deformation" during the Pennsylvania Period (280-320 million years ago). See letters to the Appeal Board, from L.D. Davis (Staff Counsel) dated September 29, 1978; from J. Gallo (Applicants' Attorney) dated November 14, 1978; and from W. D. Paton (Staff Counsel) dated November 22, 2978. We pass no judgment on those conclusions. Rather, we instruct the Licensing Board (which is preparing to conduct further hearings on other safety matters in any event) to decide whether these reports constitute newly discovered evidence of a kind that warrants reopening the records. See *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Power Station, ALAB-124, 6 AEC 358, 359 (1973) (*sua sponte* reopening of the record required when a Board becomes aware of a significant unresolved safety issue).

⁸⁶ 10 CFR Part 50, Appendix A, Criterion 44.

⁸⁷ Regulatory Guide 1.27.

⁸⁸ The concept, purposes, and calculation of such zones are explained at length in *New England Power Company* (NEP Units 1 and 2), ALAB-390, 5 NRC 733, 736-38 (1977). It is sufficient for this appeal to note that the zone must be such that in the event of a major accident, persons at its outer boundary would not receive radiation doses exceeding Commission-prescribed limits.

⁸⁹ 10 CFR 100.11(b) reads in pertinent part as follows:

(b) For sites for multiple reactor facilities consideration should be given to the following:

(1) If the reactors are independent to the extent that an accident in one reactor would not initiate an accident in another, the size of the exclusion area, low population zone, and population center distance shall be fulfilled with respect to each reactor individually. The envelopes of the plan overlay of the areas so calculated shall then be taken as their respective boundaries.

(2) If the reactors are interconnected to the extent that an accident in one reactor could affect the safety of operation of any other, the size of the exclusion area, low population zone, and population center distance shall be based upon the assumption that all interconnected reactors emit their postulated fission produce releases simultaneously. This requirement may be reduced in

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zone is one factor in determining whether a given site is suitable for a proposed reactor. 10 CFR 100.10(a).

The Licensing Board credited evidence “that all safety-related systems for the two Black Fox units are designed with sufficient independence, redundancy, and physical separation that a postulated accident in one reactor would not cause an accident in the other reactor, nor would it impair the ability to shut down the second reactor.” 8 NRC at 112, Paragraph 15. The Board further found that “the only shared system necessary for safe shutdown of the reactors is the ultimate heat sink,” noted that this was “designed to provide adequate cooling water for a design basis accident in one unit and for the simultaneous shutdown of the other,” and concluded that the low population zone was therefore properly calculated on the basis of reactors that were “independent” for the purposes of 10 CFR 100.11(b)(1).⁹⁰ *Ibid.*

Intervenors attack these findings. They contend that site suitability must be evaluated under the more restrictive standards of Section 100.11(b)(2) if *any* safety system is shared.⁹¹ They are in error about this; the regulations do not impose that requirement. Section (b)(2) applies only “[i]f the reactors are interconnected to the extent that an accident in one reactor could affect the safety of operation of any other . . .”

The intervenors do not challenge the Board’s finding that the ultimate heat sink is the only shared system necessary for achieving a safe shutdown in the event of an accident. Our review of the record, the Preliminary Safety Analysis Report (PSAR) as well as the testimony and other exhibits, uncovered no means by which an accident at one Black Fox unit could affect the safety of the other because they share an ultimate heat sink system; intervenors themselves do not point to any. Nor could we find some mechanism by which any of the other (*i.e.*, non-safety) shared systems could generate simultaneous accidents at both Black Fox units.⁹² Again, intervenors

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relation to the degree of coupling between reactors, the probability of concomitant accidents and the probability that an individual would not be exposed to the radiation effects from simultaneous releases. The applicant would be expected to justify to the satisfaction of the Commission the basis for such a reduction in the source term.

⁹⁰ See fn. 89, *supra*.

⁹¹ *Intervenors’ Opening Brief* at 25.

⁹² The two units also share systems for fire protection, radioactive waste treatment, and offsite power. *Kantor*, fol. Tr. 1022, p. 3. A loss of offsite power could be experienced by both units simultaneously. But each is equipped with redundant onsite power sources. The likelihood of an accident in either plant resulting from a failure of onsite power is small. Because these onsite systems are independent of one another, the likelihood of simultaneous accidents resulting from their concurrent failure is even smaller. Thus, the degree of interconnection as a result of the shared offsite power system is not such that an accident in one reactor could affect the safe operation of the other. See Applicants’ Exhibit 2, PSAR Section 8.3; Staff Exhibit 6, SER Section 8.

suggest none. In the circumstances, their point is not well taken.

The intervenors' contention that the ultimate heat sink is inadequate for the "design basis" accident is also incorrect. The evidence demonstrates that the system was planned to accommodate heat loads associated with such an accident in one unit and a normal shutdown of the other. The intervenors' contrary claim simply reflects a misreading of the record.⁹³

3. Barge Explosion. Intervenors also contended below that the plant site adjacent to the Verdigris River, a commercial waterway, makes the Black Fox facility vulnerable to a possible explosion of a barge carrying fertilizers. They renew on appeal their assertions that this possibility was inadequately analyzed and that no analysis was made of the plant's ability to withstand such coincident disasters as a barge explosion occurring during a tornado.

In rejecting these contentions as without merit, the Licensing Board pointed to the testimony of knowledgeable witnesses that the probability of an explosion of a bargeload of commercial fertilizers on the Verdigris River is extremely remote.⁹⁴ They further testified that such an explosion would not reduce the plant's ability to shut down safely. The witnesses explained that the forces created by the explosion would be less than those of the tornado the plant is designed to withstand.⁹⁵

We also reject the argument that the plant must be designed to withstand simultaneous but unrelated events of extreme improbability. Commission regulations impose no such requirement. General Design Criterion 2, upon which the intervenors rely, does require plant structures, systems, and components important to safety to be designed to withstand the effects of

⁹³ The intervenors base their entire argument on the following testimony of the applicants' witness on cross-examination (Tr. 625):

Q. Can you tell me what the purpose or function of the heat sink cooling lake is?

A. It's to maintain a reservoir of water to be used for cooling of heat exchangers during a postulated accident condition.

Q. Is that postulated accident the same as the design basis accident?

A. Yes—well, a postulated accident is one of many. A design accident is one that results in the most severe consequences.

Any ambiguity attributable to the use of the phrase "postulated accident" is resolved by statements of Messrs. Robinson and Kantor that the ultimate heat sink was designed to provide sufficient cooling water during a design basis accident in one unit and a simultaneous shutdown of the other unit. *See, e.g., Robinson*, fol. Tr. 588 at p. 5; *Kantor*, fol. Tr. 1022 at p. 3.

⁹⁴ LBP-78-26, 8 NRC at 113. On the river-mile adjacent to the Black Fox Station, the applicants' witness estimated an overall probability of 8.8×10^{-8} incidents per year (*i.e.*, less than one chance in ten million). *Robinson*, p. 3, fol. Tr. 588. The staff also characterized the probability of a barge explosion of sufficient magnitude to adversely affect the Black Fox Station as "extremely remote." *Kantor*, p. 2, fol. Tr. 1022.

⁹⁵ *Robinson*, pp. 3-4, fol. Tr. 588; Tr. 616-22, 698-99; 1057-60.

natural phenomena such as earthquakes and tornadoes.⁹⁶ And its subsection (2) requires the design bases to reflect “appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena.” However, there must be some logical connection between events before it becomes “appropriate” to consider their effects in combination. While the effects of a tornado and any accidents it might cause at the plant must be guarded against in designing the plant,⁹⁷ a tornado would be extremely unlikely to precipitate a barge explosion or raise the chances of one occurring.⁹⁸ We therefore cannot find fault with the Licensing Board for rejecting intervenors’ contention that the plant must be designed to reflect the highly remote possibility of such coincident but unrelated events.

4. Shipments of radioactive material. Intervenors also question the feasibility of receiving and shipping radioactive materials to and from the Black Fox site. They contend that this matter has not received adequate attention. The Board below concluded otherwise, noting in passing that intervenors neither cross-examined the witnesses who testified on this subject nor proffered contrary evidence of their own. 8 NRC at 114⁹⁹ Intervenors point to nothing in the record and make no arguments in their brief that warrant disturbing the Board’s conclusions.

⁹⁶ 10 CFR Part 50, Appendix A. Criterion 2 reads as follows:

Criterion 2—Design bases for protection against natural phenomena. Structures, systems, and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The design bases for these structures, systems, and components shall reflect: (1) Appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena and (3) the importance of the safety functions to be performed.

⁹⁷ See Regulatory Guide 1.76.

⁹⁸ Tornadoes and fertilizer barge explosions are wholly independent events. Staff testimony indicated that an explosion might occur due to an increase in pressure were the decomposition products of ammonium nitrate not permitted to escape freely. The only other means of explosion would be by detonation of a dynamite charge or other primer in the ammonium nitrate. *Kantor*, p. 2, fol. Tr. 1022. Thus, the presence of tornado-generated missiles would not increase the probability of a barge explosion. Intervenors’ brief adverts to no evidence in the record suggesting otherwise.

The evidence reflects a conservative estimate of the occurrence of a tornado at the Black Fox site as once in 389 years. Appl. Exh. 2 at p. 2.3-4. The probability of a tornado strike in a given hour of any year is thus 3×10^{-7} (three in ten million). The random concurrence within that same hour of a barge explosion (fn. 94, *supra*) and a tornado has a probability of about 3×10^{-5} , a figure fairly characterized as incredibly unlikely.

⁹⁹ The FES (Staff Exhibit 1 at p. 9-18) notes that more than 50 possible locations were reviewed and transportation was one of the factors considered in the choice of this site for Black Fox.

Intervenors are not so much dissatisfied with the ability of transportation systems in Oklahoma to handle nuclear material as they are concerned that as yet there is no permanent place for nuclear waste to go. However, whether there is a reasonable probability that long-term waste-storage sites will be available when needed is a question common to all nuclear facilities. The Commission is addressing that generic issue now in rulemaking proceedings. See *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). Meanwhile, in light of the established policy against withholding individual licenses pending completion of those proceedings, the Licensing Board did not err in declining to withhold the LWA on this ground.¹⁰⁰

5. Water Supply. Intervenors question whether sufficient water is available for cooling and other purposes at the Black Fox Station. They contend that applicants' water supply contract with the City of Tulsa is inadequate and stress that the Oklahoma Water Resources Board has not granted the applicants permission to withdraw water from the Verdigris River. Intervenors also argue that the proposed use of sewage effluent from the City of Tulsa (rather than reservoir water) would yield insufficient water for the station. They further maintain that Tulsa will be without fresh water by 1983 and that the city's need for water outweighs the need for Black Fox. Finally, intervenors appeal the Licensing Board's refusal to reopen the record to consider the effect of the Kansas-Oklahoma Arkansas River Basin Compact on the available water supply.

We preface our discussion with the observation that the Licensing Board explained in some detail why it rejected intervenors' arguments about the sufficiency of the water supply for Black Fox. 8 NRC at 118-21. In challenging the Board's determinations, however, intervenors do not speak to its opinion. Instead, they have simply copied into their appellate brief the same proposed findings of fact they submitted to the Licensing Board without attempting to explain why, in their view, the Board's evaluation of the evidence was wrong. Nevertheless, because of the stress intervenors put on this point at oral argument as well as in their papers, we examined their contentions as closely as we were able.

(a) The Board found that the Black Fox Station will require water from the Verdigris River at a maximum rate of about 40 million gallons per day

¹⁰⁰ See, *Portland General Electric Company* (Trojan Plant), ALAB-531, 9 NRC 263, 268 (1979); *Northern States Power Company* (Prairie Island Plant, Units 1 and 2), ALAB-455, 7 NRC 41 (1978), *affirmed on this point and remanded sub nom. Minnesota v. NRC*, *supra*, 602 F.2d at 418-19. See also *NRDC v. NRC*, 582 F.2d 166 (2nd Cir. 1978).

Following the incident at Three Mile Island, the Commission issued modified procedures to insure that new construction permits, limited work authorizations, and operating licenses are not issued without prior Commission action. The LWA in this case was issued on July 26, 1978, however, before the interim procedures took effect. Future decisions in this case will be governed by those procedures.

(Mgal/d), or 62 cubic feet per second (ft³/s); the station will also replace some of this water by discharging about 4 Mgal/d, or 6 ft³/s.¹⁰¹ This consumption of water is attributable to its use for cooling purposes, for 36 Mgal/day (56 ft³/sec) will be lost to the atmosphere as vapor or drift.¹⁰² The applicants plan to obtain water under a contract with the City of Tulsa, Oklahoma.¹⁰³ In that state, the Oklahoma Water Resources Board controls the allocation of water rights. The Board has granted Tulsa an allocation of 141 Mgal/d for municipal and industrial uses, to be released from storage in the Oologah Reservoir.¹⁰⁴ This release rate requires 313,500 acre-feet of storage.¹⁰⁵ Tulsa had a contract with the Corps of Engineers for 38,000 acre-feet of storage and is negotiating a new contract for sufficient storage to yield the city's allocation.¹⁰⁶

As the Board below noted, a court has ruled that there is no contract *currently* in effect between Tulsa and the Corps of Engineers for water storage in the Oologah Reservoir. The Assistant District Counsel for the Tulsa District Corps of Engineers, however, represented to the Board in his testimony that the Corps fully intends to enter into a contract with Tulsa for the increased storage required to yield the full amount of the city's allocation.¹⁰⁷ We think the Board was entitled to credit this testimony as providing reasonable assurance that the water storage would be made available.

It is true, as intervenors say, that the applicants do not yet possess a permit to withdraw from the Verdigris River. But the applicants have applied for one and nothing in the record suggests that the Water Board will refuse to grant it. As the Licensing Board correctly recognized, "the Applicants are not required to have every permit in hand before an LWA is authorized."¹⁰⁸

(b) To the extent possible, Tulsa plans to fulfill its contractual obligation to supply water for Black Fox by furnishing sewage effluent.¹⁰⁹ Intervenors maintain that this is unacceptable because there will be insufficient effluent

¹⁰¹ 8 NRC at 119.

¹⁰² FES Section 5.2, at 5-1 (Staff Exhibit 1).

¹⁰³ *Daley*, p. 1, fol. Tr. 3776.

¹⁰⁴ Tr. 3725.

¹⁰⁵ *Cornett*, pp. 3, 6, fol. Tr. 3509; *Daley*, p. 2, fol. Tr. 3776; Tr. 3534, 3726.

¹⁰⁶ 8 NRC at 119; Tr. 3726.

¹⁰⁷ 8 NRC at 119; see Tr. 3729. The Board referred to *League of Women Voters v. Corps of Engineers*, No. 77-C-54 (N.D. Okla. Nov. 8, 1977), in which the court granted plaintiff's motion for summary judgment and found the Corps' proposed contract with Tulsa to be subject to the National Environmental Policy Act and, therefore, required the Corps to draft an environmental impact statement.

¹⁰⁸ 8 NRC at 120-21 (citing *Cleveland Electric Illuminating Company* (Perry Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 748 (1977)); accord, *Wisconsin Electric Power Company* (Koshkonong Plant, Units 1 and 2), CLI-74-45, 8 AEC 928, 930 (1974).

¹⁰⁹ *Daley*, fol. Tr. 3776, attachment 3.

available to meet the total water needs of the Black Fox station. Sewage effluents are expected to be released at the rate of approximately 35 Mgal/d. The Board below found (and the record supports) that these effluents will supply about five sixths of the station's maximum water requirements.¹¹⁰ Because Tulsa may supply Black Fox with any combination of effluent and reservoir water that equals the quantity for which the parties contracted,¹¹¹ intervenors' concern regarding the insufficiency of sewage effluent is misplaced.

(c) Intervenor challenge the adequacy of the contract between Tulsa and Public Service Company of Oklahoma, the lead applicant. Their main concern is that the city may (on twelve months notice) interrupt or terminate the agreement, should its Board of Commissioners resolve that Tulsa requires the water for its own use.¹¹² However, the Licensing Board found that

the contract between the city of Tulsa and PSO provides reasonable assurance of adequate water supply for [Black Fox] The Board sees no evidence to indicate that the interruptability clause is a serious impediment. Tulsa does not need the water being sold, the water being sold is of questionable quality for a public water supply, the city of Tulsa is proceeding in good faith, and most of the needs of Black Fox may be met by using sewage effluents.¹¹³

We see no reason to disagree with the Board's findings in this respect.

Intervenor further argue that Tulsa will be without water by 1983 or 1985,¹¹⁴ citing the Holway Report (Intervenor's Exhibit 6) as support for this claim. But, as the Board below concluded,

[t]his is not an exact representation of that report. The report does project a demand exceeding yield by 1983 to 1985 (p.11), but it proposes improvements in the present system and the development of additional supplies to meet the anticipated demands (pp. 15-43).¹¹⁵

¹¹⁰ 8 NRC at 119; see Tr. 3636. The expected maximum demand for make-up water from the river is 28,000 gallons per minute (gpm), or 40.32 Mgal/d. The estimated average demand 22,600 gpm, or 32.54 Mgal/d. FES Table 3.1 at 3-4 (Staff Exhibit 1). Thus, sewage effluents will be adequate to supply the station's average demand for make-up water.

¹¹¹ *Daley*, fol. Tr. 3776, attachment 2.

¹¹² *Id.* at 8, 10 (Article XI, Section 5; Article XIII, Section 2).

¹¹³ 8 NRC at 120, Paragraph 45.

¹¹⁴ Intervenor also argue that the contract between Tulsa and PSO is inadequate because the other applicants were not made parties to the agreement. Because the contract clearly states that the water to be sold to PSO is for use at the Black Fox station, this argument is not worthy of further comment.

¹¹⁵ 8 NRC at 120.

Furthermore, the report recommends limiting the use of water from the Oologah Reservoir to industrial purposes only; its taste and odor would require costly treatment to render it acceptable for human consumption.¹¹⁶ Finally, as the Board noted, "Tulsa had this report in hand at the time it executed the contract to supply water to PSO."¹¹⁷

Applicants' witness Mr. Cornett explained that in preparing the report, his firm evaluated the dependable yield of the Oologah reservoir and concluded that the available water supply storage space was sufficient to meet all postulated allocations, even under conditions associated with the worst drought of record.¹¹⁸ Staff witness Mr. Beskid reviewed the Holway report and approved this conclusion regarding the reservoir's dependable yield.¹¹⁹ Intervenors presented no evidence to the contrary. In these circumstances we see no basis for disturbing the Licensing Board's finding that sufficient water will be available for Black Fox.

(d) Much of intervenors' argument about water availability deals with the alleged impact of the Kansas-Oklahoma Arkansas River Basin Compact.¹²⁰ On March 29, 1978, five months after the hearings on environmental and site suitability had been completed, intervenors moved to reopen the record to consider the compact's possible effect on the availability of water in the Oologah Reservoir. The gravamen of the motion, as we understand it, was a renewed attempt by intervenors to establish that upstream use of the Verdigris River by Kansas may deplete the Oologah Reservoir to a point where it would not be available as a source of cooling water for Black Fox.

¹¹⁶ Intervenors' Exhibit 6, pp. 12-14.

¹¹⁷ 8 NRC at 120 (citations omitted).

¹¹⁸ This drought lasted roughly five years (July 1952 through May 1957). Weather records are available beginning in 1923. Cornett, p. 5, fol. Tr. 3509.

¹¹⁹ Tr. 2200-201. Mr. Beskid's testimony also concerned the staff's analysis of records of flow rates for the Verdigris River. Beskid, fol. Tr. 2122; Tr. 2145 *et seq.* In this regard we should note that in the FES the staff erroneously reported the minimum 30 day average flow to be 379 ft³/sec. In commenting on the FES, the Corps of Engineers explained that 379 ft³/sec. is the estimated flow that would be needed on the Verdigris River if barges were locking through at the maximum physical capacity of the locks. Mr. Beskid acknowledged this error (Tr. 2148) and submitted supplemental testimony which fixed the 7-day, 2-year low flow at 65 ft³/sec. Assuming that the Corps would maintain a flow of 40 ft³/sec. below the Black Fox site to preserve navigation downstream, the staff estimated that a minimum flow of 100 ft³/sec. would be required (because of the station's consumption of 60 ft³/sec). Analysis of flow duration curves revealed that flows of 100 ft³/sec. should occur at least 76% of the time and that flow augmentation (in the form of supplemental releases from upstream projects for navigation or water quality control, area runoff, or sewage effluents) would be required during three months of each year at most. Postulated increases in effluent from the Tulsa metropolitan area would obviate the need for flow augmentation even during the 7-day, 2-year low flow. Because a flow of 36 ft³/sec. would be required to meet all downstream allocations for water (Tr. 2148), the staff's supplemental analysis supports the conclusion that sufficient water will be available during periods of low flow.

¹²⁰ 82 Okla. Stat. Section 1401.

Both the applicants and the staff opposed the motion. The Licensing Board denied it as unjustifiably late—noting that the compact was entered into in 1965 and hardly “newly discovered—and for failing to demonstrate with competent affidavits how implementation of the compact might have the results intervenors attribute to it.¹²¹

To be sure, “a matter may be of such gravity that the motion to reopen should be granted notwithstanding that it might have been presented earlier.”¹²² A board need not reopen the record, however, if the issues sought to be presented are not of “major significance.”¹²³ The issue of water availability was fully litigated below and there was no need to reopen absent a “showing that the outcome of the proceeding might be affected thereby.”¹²⁴ We note that, while the Compact mentions the Verdigris River, it does not suggest that Kansas may retain that River’s entire flow for its own purposes; rather it appears on its face to limit that State’s right to additional waters.¹²⁵ In the circumstances, we hold that the Board did not abuse its discretion in declining to reopen the record.

B. Need for Power.

The demand for electricity is of course the justification for building any power plant. Satisfaction of that demand is the principal beneficial factor weighed against the environmental costs in striking the balance the National Environmental Policy Act requires. In other words, “‘[n]eed for power’ is a shorthand expression for the ‘benefit’ side of the cost-benefit balance which NEPA mandates for a proceeding considering the licensing of a nuclear plant.”¹²⁶

Intervenors questioned applicants’ need for electric power from Black Fox. At the hearing below they asserted (among other things) that the demand forecasts used were inaccurate, that the applicants’ rate structure promotes unnecessary use of electric power, that the effect of energy conservation measures had been ignored, that solar and wind power alternatives were improperly discounted, and that the substitution of a coal-fired plant for a nuclear one was not adequately considered. The Licensing Board explored intervenors’ arguments and found them wanting, explaining at length why power from Black Fox would be needed when the plant is scheduled for

¹²¹ Licensing Board’s unpublished order of May 3, 1978.

¹²² *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Station), ALAB-138, 6 AEC 520, 523 (1973) (citations omitted).

¹²³ *Ibid.*

¹²⁴ *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 64 fn. 35 (1977) (citing *Vermont Yankee*, *supra* fn. 122).

¹²⁵ 82 Okla. Stat. Section 1401, Article V, par. B.

¹²⁶ *Rochester Gas and Electric Corp.* (Sterling Project, Unit 1), ALAB-502, 8 NRC 383, 388 fn. 11 (1978, quoting *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 90 (1977)).

completion. 8 NRC at 152-74.

Intervenors excepted to those “need for power” findings and purport to challenge them before us. But their brief is simply a verbatim restatement of the proposed findings of fact and conclusions of law they had submitted to the Board below.¹²⁷ Needless to say, such a brief does not deal with the Licensing Board’s decision. It attempts neither to demonstrate how that Board erred nor to “specify . . . the precise portion of the record relied on in support of [each] assertion of error” as the Rules requires. 10 CFR 2.762(a)(2).¹²⁸

This is a serious failing, evidencing a misapprehension of the nature of the review process.¹²⁹ We have stressed before that we may not “make an appellate determination on a clean slate without regard to the Licensing Board’s opinion” and do not “weigh each piece of evidence *de novo*.” Rather, “the decision below is ‘part of the record’; we may, indeed must, attach significance to a licensing board’s evaluation of the evidence and to its disposition of the issues.”¹³⁰ By neglecting to address their brief to the decision under review and by omitting adequate record citations, intervenors leave us (and the appellees) guessing about the precise nature of their arguments and ignorant of the evidence they rely on to support them.

¹²⁷ Compare *Intervenors’ Opening Brief*, pp. 60-62; 87-101; and 105-12, with *Intervenors’ Proposed Findings of Fact* (January 3, 1978), pp. 102-03; 87-92; and 96-100.

¹²⁸ To give an example, intervenors did not contend that a coal-fired plant would be environmentally superior to a nuclear one. The Board therefore saw no need to compare their economic costs because, “as far as NEPA is concerned cost is important only to the extent it results in an environmentally superior alternative.” 8 NRC at 162 (citing *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 163 (1978)). Instead of addressing that ruling, intervenors ignore it. Their appellate brief merely repeats *in haec verba* the economic comparison submitted below. See *Intervenors’ Opening Brief* at 87 *ff*.

In this connection, after correctly following our *Midland* ruling, the Board below went on to consider whether the economic cost of Black Fox would be “substantially more than [the plant] is worth when considered as a social benefit.” 8 NRC at 163. We are doubtful that considerations of this sort are appropriate where there is a need for power from the plant and no preferable alternative from an environmental standpoint. “[N]either NEPA nor any other statute gives us the authority to reject an applicant’s proposal solely because an alternative might prove less costly financially. Monetary considerations come into play in only the opposite fashion—*i.e.*, if an alternative to the applicant’s proposal is environmentally preferable, then we must determine whether the environmental benefits conferred by that alternative are worthwhile enough to outweigh any additional cost needed to achieve them.” *Midland, supra*, ALAB-458, 7 NRC at 163 *fn.* 25. See also *id.* at 162-63 (*fns.* 21-24 and accompanying text); *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Station) ALAB-179, 7 AEC 159, 171-76 (1974), *reversed on other grounds sub nom. NRDC v. NRC*, 547 F.2d 633 (D.C. Cir. 1976), *reversed sub nom. Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519 (1978).

¹²⁹ We have held that submission of proposed findings in lieu of an appellate brief is grounds for a motion to strike. *Public Service Gas and Electric Company* (Hope Creek Station, Units 1 and 2), ALAB-394, 5 NRC 769, 770 (1977).

¹³⁰ *Duke Power Company* (Catawba Station, Units 1 and 2), ALAB-355, 4 NRC 397, 404 (1976), citing (*inter alia*) *Greater Boston Television Corp. v. FCC*, 444 F.2d 841 (D.C. Cir.) *certiorari denied*, 403 U.S. 923 (1971).

Even in criminal cases the record need not be searched for unspecified error.¹³¹ The circumstances described would justify our treating the issue of need for power as abandoned.¹³² And the temptation to do so is strong because the primary responsibility for determining the existence of that need belongs to state public utility commissions or similar bodies.¹³³ Nevertheless, we have reviewed the record and the Licensing Board's findings and conclusions on this topic. We are satisfied that the Board's determination that power from the Black Fox facility is needed is supported by the weight of the evidence; accordingly, no occasion arises for us to disturb it.¹³⁴

C. Adequacy of the radiation monitoring program.

Applicable regulations and license conditions require the applicants to monitor natural background radiation and other instances of radioactivity in the area so that any increases following inception of plant operations may be measured and their causes and consequences dealt with appropriately.¹³⁵ Intervenor's attacks on the sufficiency of the proposed radiological and biological monitoring programs were rejected by the Licensing Board, which found that (8 NRC at 150, para. 149):

[T]he preoperational and operational programs proposed are adequate and meet NRC regulatory guidelines. Initiation of the preoperational monitoring at least 2 years prior to startup is sufficient time to establish baseline environmental conditions to evaluate the influence of Black Fox. The various media samples proposed appear to be sufficient even though the plant does not include every conceivable item of food that may be consumed. The Board finds that monitoring food and other media will provide data that can be used to modify operations quickly should any concentrations appear in

¹³¹ *United States v. Haldeman*, 559 F.2d 31, 78 (D.C. Cir. 1976) (*in banc*), *certiorari denied*, 431 U.S. 933 (1977).

¹³² See, e.g., *Chicago and W.I.R. Company v. M/S Buko Maru*, 505 F.2d 579 (7th Cir. 1974).

¹³³ *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 550 (1978); *Midland*, *supra*, ALAB-458, 7 NRC at 162; *Carolina Power and Light Company* (Shearon Harris Plant), ALAB-490, 8 NRC 234, 241 (1978); *Rochester Gas and Electric Corp.* (Sterling Project, Unit No. 1), ALAB-502, 8 NRC 383, 387-89 (1978).

¹³⁴ Intervenor's were particularly dissatisfied with the load growth forecasts sponsored by the other parties. Intervenor's own projections, however, when adjusted with more recent data, provide similar results. See 8 NRC at 155-158. To the extent there are discrepancies, they are not significant ones. See, *Carolina Power and Light Company* (Shearon Harris Plant), CLI-79-5, 9 NRC 607, 609-10 (1979).

¹³⁵ Details of the monitoring program in the Final Environmental Statement (Staff Exhibit 1), Sections 6.1.2 and 6.2.2 and Table 6.1. The program is also discussed in the prepared testimony of the applicants' witness Dr. Robinson, fol. Tr. 597 at 5-7; and staff witness Mr. Emch, fol. 1022 at 1-4.

these items that would cause concern, and thus prevent unacceptable exposures to people.

Intervenors excepted to these findings. But, like the portion of their brief dealing with "need for power", their arguments to us are virtually a word-for-word repetition of the proposed findings they submitted below.¹³⁶ These were fully considered by the Licensing Board. 8 NRC at 147 fn. 16 and 148-50. By not submitting a brief that specified where, in their judgment, the Board went astray, intervenors left us little choice other than to review generally the evidence underlying this portion of its decision. We find it amply supported by the record and intervenors' arguments to the contrary unpersuasive. We therefore note our concurrence in the Board's rejection of them for the reasons it assigned.¹³⁷

D. The remaining exceptions.

Intervenors' remaining "propositions" are also repetitions of the proposed findings they submitted below. With the exception of the "radon" issue, we are satisfied the Licensing Board dealt with them adequately in its opinion. Nothing would be gained by our restating its conclusions in our words. Additionally, in accordance with our practice, we have examined on our own initiative the portions of the initial decision from which no exceptions were taken. We find no error that would invalidate the Board's conclusion that issuance of an LWA was warranted.

There remains the matter of the environmental effects of radon emissions attributable to the mining and milling of uranium to fuel these (and other) nuclear power reactors. The Licensing Board dealt with this question at length in its decision and found "that the environmental impact of radon-222 is negligibly small and has had no effect on the environmental cost-benefit balance." 8 NRC at 144. For reasons we have previously explained, however, our review of this conclusion must abide the completion of separate proceedings. See, *Philadelphia Electric Company, et al.* (Peach Bottom Station, Units 2 and 3), ALAB-480, 7 NRC 796 (1978); ALAB-562, 10 NRC 437 (Sept. 10, 1979) (appeal pending).

¹³⁶ Compare *Intervenors' Opening Brief*, pp. 37-41, with *Intervenors' Proposed Findings of Fact* (January 28, 1978), pp. 34-38.

¹³⁷ Intervenors also challenge the Licensing Board's conclusions about the effects of radiation on Black Fox employees. Here again, they repeated the findings they proposed below instead of addressing the Board's disposition of them. 8 NRC at 150-52. We think it sufficient to note our general concurrence in the Board's decision on this point. Intervenors' assertion that dividing the 800-1000 man-rem per year exposure levels projected for the 2-unit Black Fox station by the regular plant staff of 135 persons (see 8 NRC at 151, para. 152) results in a per-person radiation level for plant workmen in excess of the 5 rem per year allowable, rests on a misconception of the situation. Much of the personnel exposure attributable to a plant is incurred by employees who are not part of the regular operating crew. These enter the plant only for maintenance, repairs, and similar incidental work. Permissible exposure levels are not exceeded when this factor is taken into consideration Tr. 745-76.

CONCLUSION

For the reasons stated, we (1) *certify to the Commission* the question of the role of Appendix I in individual licensing proceedings (see pp. 788-789, *supra*); (2) *direct the staff to apprise the Commission* whether it believes Class 9 accidents should be considered in this case (see pp. 790-792, *supra*); and (3) *retain jurisdiction* over the radon issue. Except for the retained issue, the decision of the Licensing Board is *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Concurring Opinion of Dr. Johnson on the Appendix I Issue:

The applicants except to the Licensing Board's failure to grant their motions for summary disposition of intervenors' Contention 36, which questioned the effect on the health of the general public of radioactive effluents emitted during normal operation of a nuclear power plant. The applicants argue that this contention amounted to a challenge to Appendix I of 10 CFR Part 50 and therefore was prohibited by 10 CFR 2.758(a).¹ After hearing the issue on the merits, the Licensing Board ruled in the applicants' favor and we have upheld that ruling (see p. 788 *supra*). Nevertheless, in view of the issue's significance and the likelihood of its recurrence in future cases, I believe that we should resolve the question raised by the applicants: whether Appendix I precludes, in individual licensing cases, litigation of the health effects of radioactive emissions. I set forth below a discussion of this issue and my reasons for concluding that the applicants' position on appeal is correct.

Intervenors' Contention 36 states that:

the Applicant and the Regulatory Staff have not adequately assessed the somatic and genetic effects of the low level gaseous and liquid radioactive discharges which will result from the normal operation of Black Fox, [Units] 1

¹ Section 2.758(a) provides generally that any rule or regulation of the Commission shall not be subject to attack in any adjudicatory proceeding involving licensing. At this juncture it is appropriate to point out the remedy available to any party in a licensing proceeding who is dissatisfied with a Commission rule. 10 CFR 2.758(b) provides that a party to an adjudicatory hearing may petition the Commission for a waiver or exception to a rule. Such a petition must set out with particularity the circumstances being relied upon as the bases for such a waiver or exception.

and 2 on humans, including but not limited to, persons engaged in shipping operations on the McClellan/Kerr Navigation Channel, as well as the plants, fish, waterfowl, and wildlife.²

After hearing evidence on this question from all parties, the Licensing Board found that the applicants and staff had adequately assessed the health effects of radioactive effluents.³ The Board explained:

Even were the estimates too low by a factor of ten or more, . . . the somatic effects would be miniscule.

We see no reason why the genetic effects anticipated should weigh strongly against Black Fox either in the environmental balance or in the comparison with alternatives.⁴

Despite this favorable ruling, applicants "appeal" the Board's failure summarily to discuss Contention 36.⁵ Anticipating a potentially significant impact on future NRC proceedings, they argue that:

it is never appropriate in an individual licensing proceeding to adjudicate the genetic and somatic effects of the routine releases of radioactive materials in the liquid and gaseous effluents from a light-water-cooled nuclear power reactor. An applicant for a Commission license must always demonstrate compliance with Appendix I, and to require more undermines the validity of Appendix I.⁶

Commission regulations require the use of design objectives and technical specifications to keep releases of radioactive materials in effluents and to unrestricted areas of nuclear power plants during normal operations "as low as is reasonably achievable."⁷ Because when read in isolation this standard is susceptible to differing interpretation, the Commission initiated a rulemaking proceeding to provide additional guidance in the form of quantitative values. Following that proceeding, the Commission promulgated Appendix I to 10

² 8 NRC at 144.

³ *Id.* at 144-47.

⁴ *Id.* at 147, Paragraphs 135, 139.

⁵ For reasons explained in our main opinion, pp.788-790 *supra*, the issue is fairly before us should we choose to reach it.

⁶ *Applicants' Brief* at 7.

⁷ 10 CFR Sections 50.34a and 50.36a, respectively. An "unrestricted area" is "any area access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, and any area used for residential quarters." 10 CFR Section 20.3(17).

CFR Part 50, which sets forth numerical guides for meeting the "as low as is reasonably achievable" criterion.⁸

Early in the proceedings below, it became apparent that the Black Fox station would meet the provisions of Appendix I. Thus, the Licensing Board granted the applicants' motion for summary disposition of intervenors' Contention 11, which questioned the adequacy of applicants' showing that Black Fox would satisfy those requirements.⁹

Throughout these proceedings, the Licensing Board's view of applicants' position seems to have differed from that of the applicants themselves. The applicants maintain that

[u]nfortunately, the Licensing Board consistently misinterpreted Applicants' motion to dispose of Contention 36 as an attempt to preclude the Licensing Board from considering the health effects of routine releases of radioactive materials in the cost benefit balance of the Black Fox Station or in the Board's consideration of alternatives to the Black Fox Station (See: [Partial Initial Decision], pp. 68-69 and "Order Ruling on Motions for Summary Disposition and Listing Board Questions," dated July 20, 1977, pp. 4-6). Applicants have never taken such a position. Applicants have expressly stated their belief that [the National Environmental Policy Act] requires that the Licensing Board consider the impacts of the routine release of radioactive material from the Black Fox Station in considering the cost/benefit balance for the Station and in considering alternatives to the station [citations omitted].

Applicants simply disagree with the Licensing Board's apparent belief that because it must consider a particular environmental *impact it must of necessity permit the magnitude of that impact to be litigated in an individual licensing proceeding*. Contention 36 questions the determination of the magnitude of those health effects.¹⁰

Compliance with the provisions of Appendix I is deemed a conclusive showing that radiation doses resulting from normal liquid and gaseous effluents from a nuclear power plant are as low as reasonably achievable.¹¹ Thus, applicants' appeal presents the issue whether such compliance establishes and quantifies the radiological environmental impact (*e.g.*, health effects) of normal plant effluents such that these somatic and genetic effects are unassailable in individual licensing hearings by virtue of 10 CFR 2.758(a).

Before addressing the specific matters presented by the applicants'

⁸ For additional discussion of the provisions of Appendix I, see pp. 799-801 *infra*.

⁹ LBP-77-46, 6 NRC 167, 168-69 (1977) (ruling on motions for summary disposition). We have affirmed that ruling See p. 788 *supra*.

¹⁰ *Applicants' Brief* at 19-20 (emphasis added).

¹¹ 10 CFR Part 50, Appendix I, Section 1.

interpretation of Appendix I, it would be helpful to outline the sequence of operations that might be followed in assessing the environmental impact of any emissions to the environment. Using radioactive effluents from a nuclear power plant during normal operation as an example, the sequence would consist of the following steps:¹²

- A. Determine the magnitude of radioactive effluents.
- B. Determine the expected human exposure to those effluents.
- C. Calculate the human health effects resulting from this exposure.
- D. Quantify those health effects in terms which facilitate comparison with other impacts and benefits.

In Step A, the expected radioactive releases from a nuclear plant are calculated in terms of curies per year of various isotopes found in liquid or gaseous effluents (see fn. 12 *supra*). Through the use of analytical models, these isotopes can be traced through various environmental "pathways" until they reach humans either through ingestion or by direct exposure to external radiation. These models include factors to represent specific plant and site characteristics in the calculations. From these results, the Step B determination of radiation exposure (dose) can be calculated for various organs of the body (see, e.g., Regulatory Guide 1.109).

At this point, the accuracy of the calculated results—organ doses—is limited by the validity of assumptions and estimates which must be made regarding such variable factors as isotope release rate, wind direction frequency, rainfall, and population density, among others. Nevertheless, during normal plant operations the radiological monitoring program can be relied upon to verify calculations of concentrations of radioactive material and the resulting radiation exposures.¹³

¹² This sequential approach was also followed in Section 5.4 of the Black Fox Final Environmental Statement (Staff Exhibit 1, pp. 5-14 *et seq.*), which outlines the radiological impact calculations made for that plant. Radioactive effluents from normal operations are listed in Tables 3.4 and 3.5 of that document, and Appendix C gives an outline of the "NEPA Population Dose Assessment." Regulatory Guides 1.111 and 1.109 are cited for details of the atmospheric dispersion model and dose models respectively. For an example of the use of this same basic sequence in another context, see "Impact Assessment of High-Level Wastes," U.S. Environmental Protection Agency, Office of Radiation Programs, pp. 113-140, at 127, *published in Nuclear Waste Management: Hearings Before the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs*, 96th Cong., 1st Sess. (January 25 and 26, 1979) (Joint Statement of Dr. James E. Martin and Mr. Daniel J. Egan, Jr.).

¹³ In this regard, the Licensing Board made the following findings with respect to the proposed radiological monitoring programs at the Black Fox Station (8 NRC at 149-50):

The Board finds that the proposed pre and post-operational radiological monitoring programs consider the most likely pathways to humans and that the intermediate media are

(Footnote continued on next page)

Step C involves predicting the health effects attributable to the radiation exposures calculated in Step B. This process is less well-suited to direct analytical modeling than that of the first two steps. The staff alluded to this difficulty in the environmental statement prepared for the Commission's promulgation of Appendix I.¹⁴ With regard to estimates of biological risk, the staff commented:

The levels of radiation doses resulting from releases of radioactivity in effluents from nuclear power stations discussed in this Statement are substantially below the levels where biological damage has been observed in humans. This is not to say that there is no effect at these dose levels. However, if there is an effect at these levels, it is such that it has not been detected and measured with existing techniques. Studies of large groups of humans who have received doses of radiation hundreds of times higher than dose limits recommended by the ICRP, NCRP, and FRC for individual members of the public at very high dose rates have shown a statistical increase in the incidence of leukemia and other malignant diseases. Thus, while it is known that ionizing radiation can induce genetic and somatic effects at high doses and dose rates, the evidence at the present time is insufficient to justify precise conclusions on the nature of the dose-effect relationship at low doses and dose rates. For the induction of some diseases such as cataract of the lens of the eye and impairment of fertility, there is evidence that implies little or no risk of inducing such effects at doses and dose rates in the range of natural background radiation and recommended dose limits.

For the induction of cancer, however, existing evidence does not permit the exclusion of a linear non-threshold dose-effect relationship even to the lowest dose levels. It is prudent to assume for purposes of radiation protection, therefore, a direct linear relationship between biological effect and the amount of dose. Proceeding from this premise, very low doses can then be related through extrapolation of data from high

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ones most apt to affect concentration in the food chain. The Board sees no objection to using data from other plants in other locations in the design of monitoring programs.

The Board finds that the preoperational and operational programs proposed are adequate and meet NRC regulatory guidelines. Initiation of the preoperational monitoring at least 2 years prior to startup is sufficient time to establish baseline environmental conditions to evaluate the influence of Black Fox. The various media samples proposed appear to be sufficient even though the plan does not include every conceivable item of food that may be consumed. The Board finds that monitoring food and other media will provide data that can be used to modify operations quickly should any concentrations appear in these items that would cause concern, and thus prevent unacceptable exposure to people.

¹⁴ Final Environmental Statement, WASH-1258 (July 1973).

doses to an assumed biological effect even though it is not detectable. The estimates of somatic effects in humans set forth in Table 1-1 are based on the BEIR Report¹⁵ which uses this conservative assumption. This assumption may lead to overestimates of the incidence of effects from chronic low-level doses in the range of the Appendix I guides.¹⁶

As the staff indicates, the values set forth in the BEIR Committee report form a basis for the dose-to-health effects conversion. Although this report was published in 1972 and an updated edition is soon due for publication, the 1972 version is still widely used for health effects assessments. Staff witness Goldman's testimony on Contention 36, which the Licensing Board seems to have found persuasive,¹⁷ was based largely on the BEIR Committee report.¹⁸

Finally, Step D in the environmental assessment requires transforming the impact—here, radiation-induced health effects—to a common unit (e.g., dollars) to enable comparison or combination with other impacts in the NEPA balancing process. In actuality, this step is seldom performed and the balancing is often accomplished by subjectively assessing various impacts expressed in quite different terms (see, for instance, the Black Fox FES, Table 10.13 at p. 10-35).

Commission rules, however, contain one instance of a factor for converting an environmental impact, calculated as a population dose in man-rem, to a dollar amount. As noted above, p. 809 *supra*, Section 50-34(a) requires the use of design objectives for equipment to control radioactive releases from nuclear power plants in order to keep levels of radioactive material in such effluents "as low as is reasonably achievable" (ALARA). The Section also explains that the values set out in Appendix I provide numerical guidance on design objectives to meet the ALARA requirement. As used in Part 50, the latter means

as low as is reasonably achievable taking into account the state of technology, and the economics of improvements in relation to the benefits to the public health and safety and other societal and socio-economic considerations, and in relation to the utilization of atomic energy in the public interest.¹⁹

¹⁵ *The Effects on Populations of Exposure to Low Levels of Ionizing Radiation*, Report of the Advisory Committee on Biological Effects of Ionizing Radiation, Division of Medical Sciences, National Academy of Sciences, National Research Council (BEIR Report) November 1972.

¹⁶ WASH-1258, fn. 14 *supra*, pp. 1-17 through 1-19 (citation for BEIR report omitted; see fn. 15 *supra*).

¹⁷ 8 NRC at 145-47.

¹⁸ *Goldman* at 4-7, fol. Tr. 1022. Dr. Goldman, however, characterized the health effects estimates of the BEIR report as conservative.

¹⁹ 10 CFR 50.34(a).

The Commission adopted the guidelines of Appendix I as a “quantitative expression of the meaning of the requirement that radioactive material in effluents . . . be kept as low as [is reasonably achievable].”²⁰ Enhanced effluent treatment systems must be employed if reduced doses to the population located within 50 miles of the plant can be achieved at a cost of less than \$1000 per man-rem.²¹

By the terms of its definition, the ALARA standard necessarily invokes a cost-benefit balancing process. The Commission recognized that in order to facilitate this balancing, there must be some means of expressing the dose unit, man-rem, in monetary terms. To that end, the values \$1000 per man-rem and \$1000 per man-rem thyroid were chosen.²²

With this introduction in mind, I turn to the question the applicants sought to raise: whether, in light of their compliance with Appendix I, that rule establishes the quantum of environmental impact associated with routine radiological releases; thus leading to the conclusion that 10 CFR 2.758(a) precludes, in any particular licensing proceeding, litigation of the health consequences of those releases.

The staff opposes the applicants’ position. It maintains, in effect, that despite an applicant’s showing of compliance with the provisions of Appendix I, the magnitude of health effects due to routine radioactive releases is not explicitly prescribed by that rule. Thus, it contends that these effects are open to challenge in individual cases.²³ The staff also argues that the health effects considerations appearing in WASH-1258 (the environmental statement prepared in conjunction with the Appendix I Rulemaking, fn. 14 *supra*) may not be incorporated by reference in the rule because specific notice to that effect was not given as required by 5 U.S.C. Sections 552(a) and 553, provisions of the Administrative Procedure Act.²⁴

Finally, the staff contends that contrary to the applicants’ argument, our ruling in *Potomac Electric Power Company* (Douglas Point Station, Units 1 and 2), ALAB-218, 8 AEC 79 (1974), is not applicable to this case. In *Douglas Point* we held that a challenge to the data underlying a Commission rule is a

²⁰ CLI-75-5, 1 NRC 275, 279 (1975). The original wording, in Section 50.34a and the Commission opinion, was “as low as practicable.” Later in its opinion, the Commission explicitly adopted the revised wording, (*i.e.*, as low as is reasonably achievable) recommended by the International Commission on Radiological Protection (ICRP). *Id.* at 280-81.

²¹ 10 CFR Part 50, Appendix I, Section II D.

²² 1 NRC at 282-84, 315-18. The Commission expressly noted that the hearing record provided no clear guidance as to what the dollar per man-rem should be, and adopted the \$1000 value as an interim measure. Because this value was slightly higher than any proposed at the hearings (suggestions ranged from \$10 to \$980), the Commission characterized it as conservative. *Id.* at 284.

²³ *Staff Response to Applicants’ Brief in Support of Exception 3*, at 10.

²⁴ *Id.* at 11.

attributable to each nuclear plant. We explained that: challenge to the rule itself.²⁵ The rule in question was Table S-3, which when first published codified the environmental costs of the uranium fuel cycle attributable to each nuclear plant. We explained that:

the environmental values assigned in Table S-3 . . . reflect the Commission's considered evaluation and quantification of the adverse environmental effects of the uranium fuel cycle attributable to individual reactors. The figures were developed in public rulemaking proceedings convened by the Commission specifically to consider such matters. 37 F.R. 24191 (1972). They form an integral part of the new regulation. *To go behind them and challenge the basis on which they rest is in effect a challenge to the regulation itself.* It may well be that these values rest on unfirm footing. The Licensing Board, however, is not the proper forum for consideration of such matters. The Commission's regulations provide that "any rule or regulation of the Commission, or any provision thereof, . . . shall not be subject to attack . . . in any adjudicatory proceeding involving initial licensing . . ." 10 CFR 2.758 (1974 rev.)²⁶

The staff cites significant differences between *Douglas Point* and this case. It argues that whereas the underlying "raw data . . . used to quantify values ultimately became part of Table S-3," the Final Environmental Statement which sets forth health effects for Appendix I (WASH-1258, fn. 14 *supra*) is not the underlying basis for that Appendix.²⁷ The staff also notes that the clarifying amendment to Table S-3 expressly provides that health effects are not considered in the Table itself and may be dealt with in individual licensing cases.²⁸

Notwithstanding the staff's arguments, I believe that our *Douglas Point* decision is apposite in this instance, and in fact provides precedential support for applicants' position that intervenors' Contention 36 should have been summarily dismissed. To be sure, there are differences between Table S-3 and Appendix I. But, in my view, these differences tend to support rather than detract from the pertinence of *Douglas Point* to this case.

The Appendix I rule, promulgated after a lengthly rulemaking hearing, quantifies the "as low as is reasonably achievable" requirement for power reactor effluents. And that requirement is explicitly defined in terms of a balance which involves, *inter alia*, "the public health and safety."²⁹ Appendix I-

²⁵ 8 AEC at 89.

²⁶ *Ibid.* (footnote omitted, emphasis added).

²⁷ *Staff Response* at 12-13.

²⁸ 43 Fed. Reg. 15613 (April 14, 1978). *Also see* 10 CFR 51.20, Table S-3, Note 1.

²⁹ *See* p. 813-814 *supra*. Here it might be noted that while the phrase "public health and safety" is most often used in connection with radiation releases resulting from nuclear plant accidents, in 50.34(a) these words contemplate the effects of radioactive effluents during normal plant operation (*i.e.*, health effects).

requires that the annual radiation exposure to the maximally exposed individual, as well as to the entire population surrounding the nuclear power plant, be calculated using effluent rates and other data pertinent to the facility and proposed site. For individuals, these calculated exposures must be within certain limits.³⁰ For the population as a whole, steps must be taken to reduce calculated doses if the cost of doing so falls within the \$1000 per man-rem ratio.³¹ I can conceive of no purpose for the Commission's promulgating Appendix I other than that of minimizing the radiation-induced health effects resulting from the operation of nuclear power plants by limiting the direct cause of such effects—radiation exposure.

³⁰ Table 5.12 of the Black Fox FEX (Staff Exhibit 1) is reproduced here to demonstrate the extent to which the calculated doses to individuals predicted for Black Fox comply with the guideline values.

Table 5.12. Comparison of Calculated Doses to a Maximum Individual from Operation of Each Unit of Black Fox Station with Appendix I Design Objectives^a

Criterion	Appendix I Design Objectives	Calculated Dose
Liquid Effluents		
Dose to total body from all pathways	3 mrem/yr	0.016 mrem/yr
Dose to any organ from all pathways	10 mrem/yr	1.6 mrem/yr
Noble Gas Effluents		
Gamma dose in air	10 mrad /yr	0.75 mrad /yr
Beta dose in air	20 mrad /yr	0.60 mrad /yr
Dose to total body of an individual	5 mrem/yr	0.49 mrem/yr
Dose to skin of an individual	15 mrem/yr	1.0 mrem/yr
Radioiodine and Particulates ^b		
Dose to any organ from all pathways	15 mrem/yr	6.2 mrem/yr

^a Appendix I Design Objectives from Sections II.A, II.B, II.C of Appendix I, 10 CFR Part 50; considers doses to maximum individual per reactor unit. From Federal Register V. 40, p. 19442, May 5, 1975.

^b Carbon-14 and tritium have been added to this category.

³¹ At oral argument before us, staff counsel emphasized that in satisfying Appendix I, applicants availed themselves of an option provided by Section II D of the appendix. Under that option, the cost balancing of population doses against augmented effluent treatment system is not required if the applicants' projected maximum individual doses fall within more restrictive limits set forth in the Concluding Statement of Position of the Regulatory Staff (Docket RM-50-2), which is annexed to Appendix I.

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While it is true that the Appendix I guides are phrased in terms of units of radiation exposure—rems or man-rems—rather than a myriad of specific somatic and genetic effects, three points emerge from the Commission decision regarding their promulgation.³² First, the health effects of radiation exposure are fundamental to Appendix I. Second, the Commission believed that the health effects attributable to implementation of the Appendix I guidelines would be minimal. Finally, and of considerable significance to the matter at issue, the Commission clearly believed that the relationships expressed in the BEIR Committee Report, which were used by the Staff in the Environmental Impact Statement for Rulemaking (WASH-1258, fn. 14 *supra*), provided the connecting links between radiation exposure and health effects.

The Commission began its opinion with a discussion of the scope of the Appendix I guides, noting that they were not radiation protection standards. The Commission explained:

The Commission's radiation protection standards, which are based on recommendations of the Federal Radiation Council (FRC) as approved by the President, are contained in 10 CFR Part 20, "Standards for Protection Against Radiation," and remain unchanged by this Commission decision. As in the case of parallel recommendations of the National Council on Radiation Protection and Measurements (NCRP) and the International Commission on Radiological Protection (ICRP), these FRC standards which have been previously adopted give appropriate consideration to the overall requirements of health protection and the beneficial use of radiation and atomic energy. The Commission believes that the record clearly indicates that any biological effects that might occur at the low levels of these standards have such low probability of occurrence that they would escape detection by present-day methods of observation

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While it is true that the applicants used this option, their Environmental Report for the Black Fox Station clearly indicates that human population doses (as well as doses to other biota) within 50 miles of the plant were indeed calculated for conditions relevant to the Black Fox plant and site. Tables 5.2-13 and 5.2-14 of the Report summarize these results, which indicate that the population whole body dose due to liquid and gaseous effluents would be about 1 man-rem per year. Environmental Report, Construction Permit Stage, Black Fox Station (Units 1 and 2), Vol. IV, pp. 5.2-25 and 5.2-26 (see 10 CFR 51.20). The staff's estimate of the 50-mile population dose is 1.6 man-rem. *Emch*, fol. Tr. 1022 at 1.

Therefore, while the balancing called for by Appendix I was not performed, the population doses were calculated for the Black Fox Station. As expected, meeting the very restrictive limits on individual doses resulted in very low doses to the entire surrounding population. In comparison, it is shown by the staff's estimate that the annual dose to the population within 50 miles of Black Fox due to natural background radiation is 110,000 man-rem. *Ibid*.

³² *Rulemaking Hearing* (Docket No. RM-50-2), CLI-75-5, 1 NRC 277 (1975).

and measurement.³³

That the health effects resulting from effluents of plants which meet Appendix I are expected to be minimal is evident in the Commission's opinion. Following a discussion of the fact that persons living closer to the plant might receive somewhat larger radiation exposures than those farther away, the Commissioners expressed the judgment that:

total equality of risk, however desirable, can seldom be realized in our modern industrial society. Wherever power plants, either nuclear or non-nuclear, are constructed, persons living near those plants will be exposed to marginally greater amounts of emissions than those residing farther away, and the same situation obtains in regard to other types of industrial facilities. *We believe, however, that the design-objective guides which we adopt assure that even those individuals living closest to nuclear facilities will be exposed to emissions at exceedingly low levels, with consequent risks which are acceptable from a social as well as legal standpoint.*³⁴

Later in the decision, the Commission specifically refers to the BEIR Committee Report.³⁵ In discussing the cost-benefit balancing required to determine whether additional radwaste systems are needed and how to evaluate the cost of dose reductions, the Commissioners state:

A recent and generally accepted evaluation [the BEIR Report] of the effects of ionizing radiation is available; it was used by the Regulatory Staff in preparation of its Final Environmental Statement. It is accordingly possible to estimate in a straight-forward and almost certainly conservative way the benefits to the public health obtained by decreasing the radiation doses to the population. The casting of these benefits into monetary terms—as the dollar value of decreasing by a total-body man-rem and by a man-thyroid-rem (or other essentially equivalent quantities) the dosage to the population—is, therefore, the only missing information required to strike the cost-benefit balance.³⁶

Thus, there remains little doubt that the Commission intended to adopt the BEIR Committee's recommendations as a means of evaluating health effects. In terms of the four-step sequence outlined earlier—(p. 811 *supra*), the Commission had at this point proceeded through Steps A, B, and C; it was then seeking the conversion factor for Step D which would allow radiological

³³ *Id.* at 279-80 (footnotes omitted). The discussion at this point pertains to radiation protection standards issued by various groups; health effects to populations exposed at these levels would be unmeasurable. Radiation exposure levels established by the Appendix I guidelines are even lower than those standards.

³⁴ *Id.* at 300 (emphasis added).

³⁵ *Id.* at 311 fn. 72. (The Report is cited in fn. 15, *supra*).

³⁶ *Id.* at 311 (footnotes omitted).

releases to be evaluated in monetary terms.

In my opinion, the Appendix I decision indicates quite clearly the Commission's view that implementation of those guidelines would reduce the health effects of radioactive effluents to acceptably low values. Further, I believe the decision firmly incorporates in Appendix I the values for converting doses to health effects set out in the BEIR Committee Report.³⁷

There is at hand yet another example of the Commissions' view of the environmental impact of radiation. To recall a point made in the staff's argument, pp. 814-815 *supra*, the Commission has expressly permitted litigation in individual cases of health effects due to radioactive effluents prescribed in Table S-3 (see p. 815 *supra*). In that table the radiological impact of the uranium fuel cycle is set forth merely in terms of the quantity of radioactive material released, with no assessment of how these materials would or could affect humans. Thus, Table S-3 accomplishes only the first step of the four-step environmental impact evaluation discussed above. In contrast, the Commission has not included a similar proviso to allow case-by-case litigation of health effects in relation to Table S-4, which established the "Environmental Impact of Transportation of Fuel and Waste To and From One Light-Water-Cooled Nuclear Power Reactor."³⁸ The difference between the two tables is significant; whereas Table S-3 establishes only the amount of material released, Table S-4 expresses the radiological environmental impact of fuel and waste shipments in units of man-rems—*i.e.*, dose to humans. One reasonably may surmise that in the Commission's view, such specification of impact necessarily embodies the health effects estimates of radiation exposure expressed in the BEIR Report, thus alleviating the need to litigate such effects in individual licensing proceedings.

I therefore conclude that while the guideline values of Appendix I are set forth in units of radiological dose (*i.e.*, rems and man-rems), it is reasonable to assume that the Commission intended these dose guidelines to limit resulting health effects as determined by the relationships set forth in the BEIR Report. I am also of the opinion that the Commission's characterization of the magnitude of these effects as very low should apply in deliberations under the National Environmental Policy Act as well as in evaluations of reactor systems.³⁹ There is no question that these effects should be considered on the

³⁷ As mentioned previously (fn. 1 *supra*), a party to an adjudicatory proceeding who is dissatisfied with a Commission rule may petition for a waiver or exception. 10 CFR 2.758(b). The alleged existence of information tending to refute data which provided the underlying basis for the rule (in the case of Appendix I, the BEIR Committee Report on health effects) would surely provide grounds for such a petition.

³⁸ 10 CFR 51.20, Summary Table S-4.

³⁹ The Licensing Board's findings in this case respecting the health effects of normal effluents are in essence those of the Commission at the conclusion of its Appendix I rulemaking. This is not

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cost side in the environmental balance. However, when a nuclear plant meets the “as low as is reasonably achievable” requirement of Appendix I, the magnitude of population radiation doses and their resultant health effects is small enough that the cost/benefit balance would indeed have to be in “virtual equipoise”⁴⁰ before the impact of releases of radioactive effluents would be sufficient to require abandonment of the plant.

To be sure, if more recent data or changed circumstances should question the validity of either the Appendix I guidelines or the relationships used to evaluate their resultant health effects, Commission regulations provide an immediate source of remedy. Any party to a licensing proceeding may petition for a waiver or exception if special circumstances exist such that application of a Commission rule would not serve the purposes for which the rule was adopted. 10 CFR 2.758(b). If the petitioner makes *prima facie* showing that a waiver or exception is justified, the presiding officer certifies the matter directly to the Commission for determination. *Id.* at 2.758(d). Regardless of the availability of a waiver, a party to an initial licensing proceeding may also petition for rule making pursuant to 10 CFR 2.802. *Id.* at 2.758(e).

Thus, the regulations provide adequate means for challenging Commission rules in appropriate circumstances. I would hold that in individual licensing cases, Appendix I precludes litigation of the health effects of radioactive emissions from a nuclear plant whose liquid and gaseous effluents are in compliance with the Appendix I guidelines.

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surprising as both bodies were dealing with the same sets of facts—Appendix I dose guidelines and the BEIR Committee Report. I believe this case provides a good example of how generic rules, established in an effective rulemaking proceeding, could reduce litigation time and expense in individual proceedings and why contentions that challenge proceedings and why contentions that challenge such rules should not be allowed in such cases.

⁴⁰ *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 104 (1977).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Chairman
Dr. Richard F. Cole
Frederick J. Shon

In the Matter of

**SACRAMENTO MUNICIPAL
UTILITY DISTRICT**

Docket No. 50-312 (SP)

**(Rancho Seco Nuclear
Generating Station)**

December 14, 1979

The Licensing Board reaffirms its earlier ruling admitting for litigation certain contentions on emergency response and refers the ruling for consideration by the Appeal Board under 10 CFR Section 2.785.

**REFERRAL OF A LICENSING BOARD RULING TO
THE ATOMIC SAFETY AND LICENSING APPEAL BOARD**

On October 24, 1979, California Energy Commission (CEC) filed a motion requesting the Board to reconsider its ruling of October 9, 1979, that the issue of emergency response will not be considered or in the alternative, certify the question to the Commission. CEC stated that the Board specifically found that the emergency response issues were within the scope of the proceeding but was in error when it determined the *Douglas Point*¹ decision relative to rulemaking did not permit hearing the issue.²

On November 8, 1979, Sacramento Municipal Utility District (SMUD) stated that it did not oppose reconsideration since it took the position that the emergency response was outside the scope. It also pointed out that the proposed contention used the terminology "emergency planning procedures." SMUD stated that the Commission in its May 7 and June 21, 1979, Orders

¹ *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974).

² The question of CEC's responsibility of going forward on issues will be the subject of a separate Order.

“revolve purely around assuring that the facility will respond safely to feedwater transients.⁸ This may include consideration of the Licensee’s organization and personnel and even certain actions that could be labelled as in-plant emergency response⁹ as it relates to that assurance” [Footnotes omitted]. SMUD contends the Board need not reach the question of applying *Douglas Point* since emergency planning is beyond the scope. SMUD asked the Board to stay its ruling if on consideration it determined that emergency planning was acceptable and refer the matter to the Appeal Board. SMUD also stated in this special proceeding it was unsure if the next level of review was the Appeal Board or the Commission.

On November 13, 1979, the NRC Staff responded by reiterating its position that off-site emergency planning issues were beyond the scope of the proceeding. The Staff also contended that if the Board determined the issue was within the scope, the Advance Notice of Rulemaking read in conjunction with the Commission’s Statement of Policy—Modified Adjudicatory Procedures, November 5, 1979, does not preclude the Board from hearing the emergency plan issue if otherwise appropriate. The Staff stated it had no objection to referral if the Board adheres to its ruling on the emergency planning issues.

The Board has considered the position of the parties on this question and the majority of the Board affirms the ruling stated in its Order of October 9, 1979, for the reasons stated; to wit, the emergency plan issue is within the scope of this proceeding but barred by the planned rulemaking on that subject. The rationale for this position is stated in the attached separate opinion of Dr. Cole and Mr. Shon. Mrs. Bowers also reached the conclusion that the emergency plan issue should not be heard but on the basis that it is outside the scope of the proceeding.

A schedule is in place for discovery, etc. and the hearing (February 26, 1980) which recognizes that if the emergency plan becomes an issue there will be a subsequent discovery period followed by an evidentiary hearing on that issue.

Although CEC requested the Board to certify this question directly to the Commission, we believe the appropriate action is to refer it to the Appeal Board under 10 CFR 2.785 for consideration.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD

Richard F. Cole, Member
Frederick J. Shon, Member
Elizabeth S. Bowers, Chairman

Dated at Bethesda, Maryland
this 14th day of December, 1979.

SEPARATE OPINION OF DR. COLE AND MR. SHON

We hold to the Board's previous thinking that there is a reasonable nexus between emergency planning/response and occurrence of feedwater transients. Because of that nexus, emergency planning/response should not be outside the scope of this proceeding. We also hold to the previous Board ruling¹ that because the Commission obviously intends to conduct rulemaking^{2,3} on this issue then the Douglas Point and Vermont Yankee lines of cases⁴ apply and preclude our consideration of off-site emergency planning/response. Were it not for the issue of Commission rulemaking on emergency planning and the Douglas Point and Vermont Yankee ALAB decisions, we would accept for hearing those contentions dealing with off-site emergency planning/response.

The California Energy Commission⁵ (CEC) and NRC Staff⁶ argue that Douglas Point does not apply. CEC takes the view that the *Douglas Point* precedent applies, if at all, to preclude consideration of "generic" issues but that a rulemaking proceeding will *not* address the *site-specific* contentions which can only be decided in the context of this adjudicatory proceeding. We agree that Douglas Point dealt with a generic issue (environmental effects of the nuclear reactor fuel cycle) while site-specific issues may be involved here. Nevertheless, the rationale of Douglas Point is applicable for the following reasons:

1. The Commission has recognized the importance of emergency planning/response and is already moving forward with its plans for rulemaking.
2. The Commission's Policy Statement of October 23, 1979, demonstrates the depth of Commission-level interest in the subject by directing the NRC Staff "to incorporate the planning basis guidance into existing

¹ Board Order ruling on scope and contentions (October 9, 1979).

² Advance Notice of Proposed Rulemaking . . . Adequacy and Acceptance of Emergency Planning Around Nuclear Facilities (44 *Fed. Reg.* 41483, July 17, 1979).

³ NRC Policy Statement Planning Basis for Emergency Responses to Nuclear Power Reactor Accidents (44 *Fed. Reg.* 61123, October 23, 1979).

⁴ *Potomac Electric Power Company* (Douglas Point), ALAB-218, 8 AEC 79 (1974); *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee), ALAB-56, 4 AEC 930 (1972); *Long Island Lighting Company* (Shoreham, ALAB-99, 6 AEC 53 (1973).

⁵ Motion of the California Energy Commission for Reconsideration Or, In the Alternative For Certification to the Commission dated October 24, 1979.

⁶ NRC Staff Response to CEC's "Motion . . . For Reconsideration or, in the Alternative, for Certification to the Commission" dated November 13, 1979.

documents used in the evaluation of state and local emergency response plans to the extent possible.”⁷ The policy statement also indicates that “Additional guidance will be provided following this rulemaking. This additional guidance can be expected to consider how local conditions such as demography, land use, and meteorology can influence the size and shape of the EPZs and to address other issues such as evacuation planning.” Clearly the intent here is to defer consideration of site-specific issues until the rulemaking is complete.

3. The Commission’s Policy Statement further states that “*Specific implementation dates* for full implementation of the task force recommendation and any others that are developed *will be established as part of the ongoing rulemaking effort.*” (Emphasis added.)
4. Because of the above three factors, we would be forced to evaluate CEC’s contention in the context of evolving regulatory standards, standards which will, when finally promulgated, be applied to this plant. Under the circumstances, our consideration of this contention, and our resolution of it, would be of limited utility. Further, it would need to be duplicated once the new regulatory standards are in place.

As we see it, the real value of the Douglas Point teachings is in avoidance of unnecessary duplication. The following quotation from the Douglas Point decision strongly indicates that thrust:

“Our consideration in adjudicatory proceedings of issues presently to be taken up by the Commission in rulemaking would be to say the least a wasteful duplication of effort.

In short the *Vermont Yankee* line of cases stands for the proposition that licensing boards should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission.”⁸

We cannot agree with the NRC Staff’s position that Commission actions subsequent to its Advance Notice of Rulemaking have released us from any of the Douglas Point-Vermont Yankee rulings. The Commission’s Policy Statement of October 23 seems to us to be merely a demonstration that the Commission did not want to wait until the rulemaking was over to begin some improvements in off-site emergency planning. The second Commission action cited by the NRC Staff as indicative of our release from Douglas Point, et al. was the Commission’s statement - “Modified Adjudicatory Procedures.”⁹ The

⁷ The Commission here referred to a joint EPA/NRC task force report entitled “Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants. NUREG-0396, EPA 520/1-78-016 dated December, 1978.

⁸ ALAB-218, 8 AEC 79, 85 (1974).

⁹ Modified Adjudicatory Procedures . . . Suspension of 10 CFR 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings dated November 5, 1979. (44 Fed. Reg. 65049, November 9, 1979).

procedures described in this Commission statement, which at least temporarily suspend the "immediate effectiveness" rule, apply only to Initial Decisions authorizing LWAs, CPs, or OLs and do not apply to proceedings of this type of case which is, in effect, an enforcement proceeding.

We further feel that the Commission's latest action in this rulemaking matter¹⁰ bolsters our opinion to the effect that the Commission meant the *Vermont Yankee* line of cases to apply to our procedures. In its Proposed Rule, the Commission offers several alternatives, all of which would, in effect, postpone any formal adjudicatory consideration of shutting down operating reactors because of non-conformity to the proposed rule until 180 days after conclusion of the current rulemaking (or January 1, 1981, whichever is earlier). This surely indicates that the Commission does not intend us to apply the Proposed Rule, or the report on which it is based, in any present adjudication.

One final note: It is true that the Commission has directed the TMI-1 instand Board to hear emergency planning matters,¹¹ but that case is a special one in many ways. It is, for example, the only hearing on TMI-2-inspired modifications in which the Commission has directed that the reactor remain shut down *pendente lite*.

For the reasons stated above, we would deny CEC's contentions dealing with the off-site emergency planning issue. Because of the importance of the issue, we support the request for referral.

Dr. Richard F. Cole

Frederick J. Shon

Dated at Bethesda, Maryland,
this 14th day of December, 1979.

¹⁰ Emergency Planning, *Proposed Rule*, (44 Fed. Reg. 75167, December 19, 1979).

¹¹ Order and Notice of Hearing, *In the Matter of Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), August 9, 1979.

SEPARATE OPINION OF ELIZABETH S. BOWERS

The CEC issue (contention) before this Board is contained in CEC's filing entitled "Revised Statement of Issues of Concern to the California Energy Commission." ¹ It reads as follows:

"4. Whether, notwithstanding measures taken and contemplated to deal with feedwater transient problems, the facility should be required to revise emergency planning procedures so that, in the event of future problems, persons in the immediate reactor area and in the facility's reasonable impact area will not be exposed to danger. [Footnote deleted]. As stated in NUREG-0569: 'Although some improvements can and should be made to feedwater system reliability and to identify and correct design deficiencies, the occurrence of feedwater transients cannot be eliminated . . . The emphasis should be on coping and mitigating the consequences of feedwater transients.' This issue will encompass certain of the same concerns raised in NUREG-0396 and a U.S. GAO Report EMD 78-110, March 30, 1979. This issue will require analysis of whether the facility's current emergency plans and the state and local plans associated therewith are adequate, or whether changes should be required within a definite timeframe or before the facility is permitted to operate further. This issue will also require inquiry into:

- Whether the scope of accidents covered by the facility's emergency planning procedures should be expanded to cover planning for protection of Class 9 accidents, TMI-level incidents, and other more serious events not currently covered?

- Whether accident notification procedures such as the criteria for requiring NRC notification used by SMUD should be revised?"

It is my opinion that the issue of off-site emergency plans is clearly outside the scope of this special proceeding and I need not reach the ruling in Douglas Point on rulemaking.² The Commission did not consider the scope of Rancho Seco in a vacuum. It had before it the consideration of other Babcock and Wilcox design operating plants. The Commission Orders stating the specific issues and offering a hearing were issued for Rancho Seco on May 8, 1979; for Davis-Besse on May 16, 1979; and for Three Mile Island I on August 9, 1979.³ The Commission effectively modified the Rancho Seco Order on July 11, 1979 by adding the issue of management competence (which was set forth in the Davis-Besse Order).

¹ Undated but serviced on August 20, 1979.

² If I felt compelled to reach the question of rulemaking, I would concur with the rationale of Dr. Cole and Mr. Shon on this matter.

³ *Toledo Edison Company* and *Cleveland Electric Illuminating Company* (Davis-Besse Nuclear Power Station) Docket No. 50-346-OL; *Metropolitan Edison Company, et al.* (Three Mile Island Nuclear Station, Unit 1) Docket No. 50-289.

Both Rancho Seco and Davis-Besse are silent with regard to the issue of off-site emergency planning although that issue was set forth explicitly in TMI-I as follows:

"3. The licensee shall improve his emergency preparedness in accordance with the following:

- (a) Upgrade emergency plans to satisfy Regulatory Guide 1.101 with special attention to action level criteria based on plant parameters.
- (b) Establish an Emergency Operations Center for Federal, State, and Local Officials and designate a location and an alternate location and provide communications to plant.
- (c) Upgrade offsite monitoring capability, including additional thermoluminescent dosimeters or equivalent.
- (d) Assess the relationship of State/Local plans to the licensee plans so as to assure the capability to take emergency actions.
- (e) Conduct a test exercise of its emergency plans."

Considering the Commission's action in enlarging the issues to be considered in Rancho Seco by the addition of the issue of management competence, I am confident that the Commission would have taken similar action on the off-site emergency plan issue if it determined it was appropriate for the Rancho Seco Board to consider this issue. No such action has been taken by the Commission in order to bring this issue within the scope of this proceeding.

I do not know of any Commission Policy Statements which would change my opinion in this matter.

I recognize that the present issues, including management competence, require evidence on the procedures to be followed by SMUD relating to on-site emergency response.

I support the request for referral.

Elizabeth S. Bowers, Chairman

Dated at Bethesda, Maryland
this 14th day of December 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Ivan W. Smith, Chairman
Dr. Walter H. Jordan
Dr. Linda W. Little

In the Matter of

Docket No. 50-289

METROPOLITAN EDISON COMPANY

(Restart)

(Three Mile Island Nuclear
Station, Unit 1)

December 18, 1979

The Licensing Board issues a prehearing conference order in this restart proceeding, ruling on various contentions advanced by intervenors, admitting certain intervenors as parties, encouraging voluntary consolidation efforts among the parties, and adopting a schedule for discovery.

FIRST SPECIAL PREHEARING CONFERENCE ORDER

Pursuant to the Board's order of September 21, 1979 and the Notice of Special Prehearing Conference and Opportunity for Limited Appearance Statement, (44 *Federal Register* 58008, October 9, 1979), and in accordance with the Commission's Order and Notice of Hearing of August 9, 1979 and 10 CFR 2.751a, the board conducted several sessions of a special prehearing conference in Harrisburg and Hershey, Pennsylvania on November 8 through 10, and 14 through 17. The sessions on November 8, 9, 10, and 14 were devoted to a discussion among petitioners and participating Commonwealth agencies concerning the scope of the proceeding, the identification of issues, admissibility of contentions, the standing of petitioners to intervene, the consolidation of parties, the schedule for discovery, and further actions in the proceeding. Each petitioner or representative attended and participated in at least some of the sessions.¹ The Commonwealth of Pennsylvania, the Pennsylvania Public Utilities Commission, and the Pennsylvania Consumer

¹ Ms. Margorie J. Aamodt, Anti-Nuclear Group Representing York (ANGRY), Coalition for Nuclear Power Plant Postponement (CNPPP), Chesapeake Energy Alliance (CEA), Environmental Coalition on Nuclear Power (ECNP), Ms. Jane Lee, Mr. Marvin I. Lewis, Newberry Township TMI Steering Committee (Newberry Petitioners), People Against Nuclear Energy (PANE), Mr. Steven C. Sholly, Three Mile Island Alert, Inc. (TMIA), Union of Concerned Scientists (UCS).

Advocate also participated. No representative of Dauphin County appeared.²

Many members of the public attended the sessions set aside for public limited appearance statements on November 15 and 16 in Hersey, and on November 17 in Harrisburg. Although the Board had announced that because of the many requests to make oral statements, a five minute time limitation might be required, it was not necessary to limit the oral statements. Each person attending was provided an unrestricted opportunity to present his or her views orally, and many did so.³ The Board has received (and continues to receive) more than one thousand written limited appearance statements, petitions, letters, and other written communications, which we are still reading and considering. These statements will be placed on the public record.

The following determinations are based upon the considerations at the special prehearing conference and the briefs of the parties:

SCOPE OF THE PROCEEDING

The licensee would have the Board follow a narrowly charted course in delineating the scope of the proceeding. In its broad definition, licensee states that the issues to be considered relate to the concerns identified by the Commission as the bases for the suspension of the operation of TMI-1. Licensee Response to Petitioners' Amended Petitions, October 31, 1979, p. 4, and Tr. 118-20, 143-49. Addressing the Commission's suspension order of July 2, licensee acknowledges that the major basis for suspending operation is the lack of reasonable assurance that TMI-1 can be operated without endangering the health and safety of the public in view of a "variety of issues raised by the accident" at TMI-2 as of that date. "Variety" is quite broad, but licensee points out that the Commission, as it said it would, later specified the bases for its concerns and the suspension in its order of August 9.

As to the August 9 order, licensee asserts that the only reasonable reading is that the issues to be considered "... relate only to the necessity and sufficiency of the [NRR] Director's recommendations to resolve the concerns identified by the Commission as the bases for suspension of operation of TMI-1." Response, p. 4. The recommendations and concerns, which bound the issues, according to licensee, are those related to the suspension of all Babcock and Wilcox reactors and those related to TMI-1 in particular.

As to the former category, all B&W reactors, licensee states that we may consider only those concerns reflected in the August 9 order, pages 2 through 4 and the documents referenced in the order, namely the various I&E bulletins, and the Staff's Status Report of April 25. Tr. 119. By inference, we believe that counsel for licensee also intended to include referenced portions of NUREG-

² The Board has been informed by counsel for Dauphin County by letter dated November 14, that on that date, he was present in the audience and listened to a portion of the proceeding. He believed that the discussion among intervenors was a waste of time for Dauphin County, so he withdrew from the audience.

³ In a few instances, speakers who had very lengthy statements were urged to return at the end of the session to conclude if necessary.

0578, TMI-2 Lessons Learned Task Force Status Report, into this category, although we recognize that counsel has reservations about the relevance of some of the recommended actions in that document. Tr. 120.

As to the latter category, those concerns and recommendations relating particularly to TMI-1, licensee states simply that only those issues specifically incorporated into the Commission's August 9 order in pages 4 and 5, may be considered in this hearing.⁴ Tr. 119.

In sum, we view licensee's position to be that this Board may consider only those individual factual issues which are expressly stated in the Commission's August 9 order, or in the documents referenced in that order. For the reasons stated below we do not accept that argument. We view the scope to be broader. But before we move on to the positions of the other parties, licensee makes another point requiring mention. Counsel states that the Commission did not mean to encompass in this proceeding all of the lessons which have been, or some day may be learned from the TMI-2 accident. Tr. 147. We agree that the scope is not that broad. This accident will doubtless be examined and reexamined far beyond the time contemplated by the Commission in its recommended schedule for this proceeding. We have taken licensee's observation into account as we have ruled upon contentions below.

The NRC staff submits for the scope of the proceeding a test that there must be some clear and close analogue, [and/or] some reasonable nexus between the issue sought to be raised and the TMI-2 accident. Tr. 152. The NRC staff also recognizes that the scope of the proceeding is whatever the Commission says it is in its August 9 order, which includes by reference NUREG-0578, the Lessons Learned Report. Tr. 764-65.

Counsel for UCS describes its view of the scope quite directly and simply: What you ought to consider when you look at each of these contentions one by one and decide on its admissibility I think is whether the issue raised can be related to the Three Mile Island Unit 1 can be safely operated without posing an undue threat to the public health and safety. I think that's clearly the standard before you now.

Tr. 133.

Both conditions must exist in UCS's standard. *Id.* UCS is joined in this view by intervenors ANGRY (Tr. 135), Sholly, (Tr. 138) and Aamodt (Tr. 139).

Intervenors ECNP, PANE, CEA, and TMIA state that no connection to the TMI-2 accident is required, that any issue pertaining to health and safety is appropriately cognizable in this hearing. Tr. 128-129, 138-141. The principal foundation for this view is the language in the August 9 order setting forth subjects to be heard in the hearing. These subjects are whether the short term

⁴ (1) Potential interaction between Unit 1 and the damaged Unit 2, (2) questions about the management capabilities and technical resources of Metropolitan Edison, including the impact of the Unit 2 accident on these, (3) the potential effect of operations necessary to decontaminate the Unit 2 facility on Unit 1, and (4) recognized deficiencies in emergency plans and station operating procedures. Pp. 4-5.

and long term actions recommended by the Director of NRR are necessary and sufficient to provide reasonable assurance that TMI-1 can be operated without endangering public health and safety and whether the actions should be required before resumption of operation. August 9 order, p. 12.

The key here is whether the short term and long term actions are *sufficient*. Licensee mentions briefly in passing that the "sufficiency" of the Director's recommendation must be considered in the proceeding but provides no analysis of the reach of that mandate. Response, pp. 4-5. We believe that the charge to consider the sufficiency of the recommended short and long term actions clearly draws the scope of the hearing beyond the limits urged by the licensee.

We see an additional fallacy in licensee's position. To accept its view, we would have to conclude that as of the August 9 order and notice of hearing, the Commission already had in mind all possible factual issues to be considered in the hearing, and that the Lessons Learned report was the final word on the subject. This is not the case, of course. The Lessons Learned Final Report, NUREG-0585 has since issued, other inquiries continue, and in fact this very hearing is a form of NRC investigation into the relationship between the TMI-2 accident and the operation of TMI-1.

On the other hand we do not believe that the Commission intended an unrestricted inquiry into all possible safety questions as urged by ECNP, PANE, CEA, and TMIA. The concerns specified by the Commission and the mandatory issues all relate to the accident at TMI-2. The phrase "necessary and sufficient" pointed to by these intervenors applies to the Director's recommended actions referred to elsewhere in the order which, in turn, are all somehow related to the accident.

We see little practical difference between the staff's definition of scope and the definition by those sharing UCS's view. We could accept either as reasonable. The problem lies in applying the test once it is defined. Even though the staff seems to agree with intervenors UCS, Sholly, ANGRY, and Aamodt on scope, the staff has objected to many of their contentions, which we see to be a matter of judgment. Our ruling too have required some judgment. We have resolved doubts in favor of including safety-related issues. We have also adopted some practical tests in evaluating the litigability of some contentions.

There is a pattern in many of the contentions where the petitioner asserts an example said to be related to the accident and from there seeks to enlarge the contention to embrace all possibilities in the class of events or circumstances represented by the example. For example, UCS in its Contention 9 specifies that there was no system to inform the operators that the auxiliary feedwater system valves were open. From this UCS seeks to justify a contention that operators should be informed when any safety system has been disabled.⁵

⁵ Other samples are in UCS Contention 10 where premature shutting off of the ECCS is alleged to base a contention that no operator action should prevent the completion of a safety function once initiated. ECNP Contention 1(c) follows the same pattern with respect to a false signal that the PORV was closed.

This class of contentions has been difficult to evaluate. On one hand we do not expect intervenors now to be able to specify each circumstance related to the TMI-2 accident which should be considered, nor do we believe that only these system components alleged to have contributed directly to the accident may now be considered. On the other hand practical evidentiary considerations and due process require that there be some reasonable bounding of the example-type contentions. Frequently we have permitted a broadening of the contention to include the class of system components in the major safety system involved, most often the core cooling system and the containment isolation system. However, intervenors must be aware that this broadening may not produce the showing sought by the contention. The specificity of the contention will necessarily shape the specificity of the evidence produced in response. The discovery process should be used to refine these contentions so that only those circumstances reasonably related to the accident are identified for hearing.

In its August 9 order the Commission requires compliance with Category A recommendations specified in Table B-1 of NUREG-0578 as a part of the short-term actions and Category B recommendations in the same table as part of the long-term actions. Order, pp. 7, 8. One recommendation, Section 2.1.9, Transient and Accident Analysis, is in neither Category A nor B. It is designated by a double asterisk which refers to a time schedule in Table B-2 of NUREG-0578. To avoid question about the scope of this proceeding we now rule that Section 2.1.9 should be viewed as a long-term action to be included inferentially in the "long-term actions" No. 3, page 8 of the August 9 order. Section III(2), p. 9, of the Commission's order anticipates the completion of all long term actions listed in Table B-1. Section 2.1.9 is one of the longer term recommendations of the Table. The staff and the licensee agree that Section 2.1.9 of Table B-1 is appropriately within the scope of this proceeding. Tr. 756-66.

Class 9 Contentions

There are several contentions advanced by intervenors which in effect seek to litigate generally the consequences and/or risks of so-called "Class 9" accidents.⁶ For the reasons set forth, the board concludes that except for the approach outlined in our Discussion below of UCS Contention 13, it would be too broad and non-specific and inconsistent with still viable Commission precedent to open up this proceeding to the extent of embracing generally the litigation of unspecified Class 9 accidents. Such an approach would be particularly inappropriate in this proceeding, since as we state above, the Board must be able to find at least a reasonable nexus between the TMI accident and matters sought to be litigated. However, we do not construe Commission precedent, particularly in the light of more recent events and issuances, as precluding the litigation of certain specified accidents which

⁶ E.G., UCS Contentions 13, 16, and 20; ECNP Contentions 4(d) and 14; ANGRY Contention 6.

heretofore may have been regarded as Class 9 accidents unsuitable for litigation in individual proceedings.

The historical framework of the consideration of Class 9 accidents has been well presented in pleadings submitted to us by the parties⁷ and in decisions in other NRC proceedings.⁸ Accordingly, there is no need to rehearse that history in detail here. To briefly highlight, however, the term "Class 9 accident" stems from a 1971 proposed rule issued for "interim guidance." That proposed rule, now codified as a proposed Annex to 10 CFR Part 51, still exists as of this writing and has been relied upon in AEC and NRC decisions⁹ and by Courts of Appeals.¹⁰

Pursuant to the proposed Annex, a nuclear power plant must be designed either to preclude or minimize the occurrence, or to mitigate the consequences, of accidents up through Class 8. Accidents so classified are "design basis accidents" which are considered the most serious accidents sufficiently credible to be considered in environmental and safety design analyses.

"Class 9 accident" is a term which cannot be defined with reference to any particular sequence of events or types of failure. Rather, the class encompasses the residual totality of accidents more severe than the "design basis accidents" of Class 8—consisting of an indefinable number of conceivable sequences of postulated successive failures. Because of their improbability, nuclear power plants need not be designed to guard against their occurrence and the consequences need not be considered in environmental analyses. *Offshore Power Systems*, ALAB-489, *supra*, at 209-210.

Even without recent promulgations, the somewhat older precedent assembled in *Offshore Power Systems*, *supra*, and *Susquehanna*, *supra*, and referred to above, provides sufficient support for the reasoning expressed by the *Susquehanna* licensing board. We agree with that reasoning and the conclusion that the occurrence of the accident at TMI Unit 2 constitutes a *prima facie* showing as to the probability of occurrence of that specific accident (particularly at the similar Unit 1 reactor) sufficient at least to form the basis for an admissible contention.

⁷ NRC Staff Brief on the Effect of Rulemaking upon the Issues of the TMI-1 Suspension Proceeding, November 16, 1979, pp. 5-7; Licensee's Response to NRC Staff Brief on the Effect of Rulemaking upon the Issues of the TMI-1 Suspension Proceeding, November 30, 1979, pp. 2-4.

⁸ *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 209-25 (1978). *Pennsylvania Power and Light Company* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-29, 10 NRC 586, Memorandum and Order Concerning Class 9 Accident Contention, October 19, 1979. In view of the fact that we believe this *Susquehanna* order to be well articulated and well reasoned, our approach here substantially parallels that of the *Susquehanna* licensing board. Copies of the *Susquehanna* Slip Opinion have been previously served in this proceeding by the NRC staff.

⁹ See the decisions cited in *Offshore Power Systems*, ALAB-489, *supra*, 8 NRC at 210, n. 52. The special case of floating nuclear plants is not applicable to this proceeding. Accordingly, our discussion is limited to the context of land-based nuclear power plants.

¹⁰ See, e.g., *Hodder v. NRC*, Nos. 76-1709 and 78-1149 (D.C. Cir., December 26, 1978); *Lloyd Harbor Study Group v. NRC*, *Chapter of the Izaak Walton League v. AEC*, 533 F.2d 1011 (7th Cir.), *cert. denied* 429 U.S. 858 (1976); *Carolina Environmental Study Group v. United States*, 510 F.2d 796 (D.C. Cir. 1976).

The proposed Annex itself does not preclude the possibility that accident assumptions other than those specified in the Annex "may be more suitable for individual cases." The Appeal Board has historically implemented this flexibility by permitting parties to attempt such a showing in individual cases. See cases referred to in footnote 9, *supra*. For example, *Shoreham, supra*, 6 AEC at 836, recognized this flexibility by holding:

In the absence of a showing that, with respect to the reactor in question, there is a reasonable possibility of the occurrence of a particular type of accident generically regarded as being in Class 9, NEPA does not require a discussion of that type of accident.

We rule that contentions which use the actual events at TMI as a base and then add or change a credible specific occurrence or circumstance, set forth sufficiently specific accidents which have a close nexus to the TMI accident. These contentions, therefore, are admissible. As is obvious under NRC adjudicatory procedures, the admissibility of contentions which involve the specific TMI accident or other specific accidents with a close nexus to the TMI accident does not imply any view whatsoever as to the merits of such contentions.

More recent promulgations have added weight to the correctness of our rejection of an approach which would narrowly construe Commission precedent so as to exclude contentions because they involve consideration of Class 9 accidents. The recent statement by the Commission relating to modified adjudicatory procedures for licensing proceedings cautions:

In reaching their decisions the Boards should interpret existing regulations and regulatory policies with due consideration to the implications for those regulations and policies of the Three Mile Island accident. In this regard it should be understood that as a result of analyses still underway the Commission may change its present regulations and regulatory policies in important respects and thus compliance with existing regulations may turn out to no longer warrant approval of a license application.¹¹

In this particular TMI Unit 1 proceeding, we apply the Commission's guidance to hold that no further special showing is required of intervenors to admit a contention alleging a specific Class 9 accident which is either the same as or closely related to the actual accident which took place at TMI Unit 2.

In addition, as pointed out by a recent decision of the Appeal Board,¹² the Commission has indicated that it is rethinking the policy, formulated in proposed Annex A, against considering Class 9 accidents. *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257 (September 14, 1979). Specifically, in the interim before a formal rulemaking proceeding on this subject is completed, the Commission has directed the staff to:

¹¹ Suspension of 10 CFR 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings, p. 5 (November 5, 1979) (44 *Fed. Reg.* 65049, at 65050, November 9, 1979).

¹² *Public Service Company of Oklahoma, et al.* (Black Fox Units 1 and 2), ALAB-573, 10 NRC 759 (December 7, 1979).

- (1) provide it with recommendations on how the guidance of the Annex might be modified on an interim basis pending completion of the rulemaking to reflect recent developments and current staff policy;¹³ and to
- (2) bring to the Commission's attention any individual cases in which the staff believes the environmental consequences of Class 9 accidents should be considered.

At this time, we take these recent and still evolving developments to be consistent with and indeed supportive of our rulings on Class 9 contentions. However, it is possible that events as a result of the Commission's Class 9 rulemaking proceeding may overtake us and require adjustments to our approach of admitting Class 9 contentions which set forth a specific accident within the scope of this proceeding.

Finally, we note that the Appeal Board in *Black Fox, supra*, ALAB-573, 10 NRC 759 has applied the Commission's directive to the staff in *Offshore Power Systems, supra*, to mean that the staff must advise the Commission promptly (within thirty days in the *Black Fox* case) of the reasons why it believes the consequences of Class 9 accidents should or should not be considered in that individual licensing proceeding. Consistent with this approach and our approach with respect to UCS Contention 13, we direct the staff to inform this Board and the Commission whether or not (and the reasons therefor) any specific accident sequence, which has a reasonable nexus to the TMI-2 accident and which heretofore may have been regarded as a Class 9 accident, should be considered in the analyses of the acceptability of returning TMI Unit 1 to operation. This should be done as soon as possible, and not later than February 1, 1980.

Deferral of Rulings

The intervenors who submitted emergency plan contentions are in the process of reviewing the licensee's recently issued plans for dealing with emergencies. They will be submitting revised contentions as a result of that review by December 19, 1979. Tr. 864. Accordingly, the Board will defer ruling on emergency plan contentions until we have had an opportunity to consider the revised contentions. We agree with both the Staff and the Licensee that the Board should consider the issue of emergency planning notwithstanding the pending rulemaking. See NRC Staff Brief on the Effect of Rulemaking Upon the Issues of the TMI-1 Suspension Proceeding, pp. 7-9 (November 16, 1979); and Licensee's Response, pp. 8-9 (November 30, 1979).

¹³ We are aware of an information report from the staff to the Commission (SECY-79-594, October 31, 1979), entitled "Class 9 Accident Considerations." This report is apparently intended, in part, as a preliminary outline of the staff response to the Commission's *Offshore Power Systems* decision. In it, the staff states its intention to develop for Commission consideration, by January 1980, a policy statement which as an interim measure would withdraw the old proposed Annex and instead abandon the system of classes of accidents in favor of a continuum representation of the probability of exceeding selected consequences based upon developments in quantitative risk assessment techniques and in the light of the TMI-2 accident.

Pursuant to the Commission's Order and Notice of Hearing of August 9, 1979, p. 13, the Board in the future will certify the question to the Commission of whether psychological distress contentions advanced by the parties should be considered in the proceeding, with our recommendation, if any. Accordingly, rulings on psychological distress contentions are deferred at this time.

As pointed out below in the context of ruling upon contentions, we are at this time deferring our ruling on the admissibility of contentions which involve the post-accident generation of combustible gas. We expect to rule shortly. That ruling in part involves the question of whether 10 CFR 50.44 bars the contention, and if so, whether the application of the regulation as such a bar should be waived. Pending that ruling, and for reasons to be explained in that ruling, we are permitting discovery to proceed on those contentions as if they were admitted by this order.

UCS Contentions

UCS Contentions Nos. 1 and 2 relate to the adequacy of natural circulation to remove decay heat. Contention No. 2 is essentially the basis for Contention No. 1. The licensee objects to these contentions as being outside the scope of the proceeding. The Board accepts the contentions over licensee's objection. Tr. 192-202.

UCS Contentions Nos. 3 through 8 are not objected to and are accepted by the Board.

UCS Contention No. 9 refers to a need for a system to inform operators that a safety system has been disabled. Licensee does not oppose the example provided in the contention but objects as to other unspecified safety systems. The Board accepts the contention but limits the contention to the core cooling and containment isolation systems. Tr 205-215.

UCS Contention No. 10 asserts that the safety systems must be modified so that an operator cannot prevent the completion of a safety function once initiated. The licensee would accept the contention with respect to the example submitted (the ECCS) but objects to unspecified systems. The Board accepts the contention but limits it to the core cooling and containment isolation systems. Tr. 215-19.

UCS Contention No. 11 challenges the assumption that the design of the hydrogen control system may assume that only five percent of fuel cladding will react. This contention is the subject matter of a petition under 10 CFR 2.758 by petitioner Sholly and will be ruled upon at the time the Board rules upon Mr. Sholly's petition. In the meantime, however, discovery may proceed under Contention No. 11 over the objection of the NRC staff and licensee who assert that the contention is a challenge to 10 CFR 50.44. Tr. 220-34, 240-52.

UCS Contention No. 12 asserts that the environmental qualification of safety related equipment at TMI is deficient. The licensee has no objection to the specific example which relates to the pressurizer level instruments functioning in an accident environment, but objects to the balance of the contention on the basis of specificity. This contention differs from the other

contentions which go from the specific to the general in that it depends upon a common initiating event—the environment created by the accident. Even so, the contention is too broad in that its reference to GDC-4 would extend it to structures, systems, and components without further limitation. The Board will permit the contention to be expanded beyond the example to the equipment important to safety in the containment building and auxiliary building. The Board is particularly interested in the aspect of the contention which relates to instrument reliability within the containment building. Tr. 235-39.

UCS Contention No. 13 brings into question the staff's methods of determining which accidents, in the realm of possible accidents, fall within the design basis. Both licensee and staff objected to the contention as originally framed on the grounds that it lacked the necessary specificity for litigation and was outside the scope of the hearing. After lengthy oral argument (Tr. 252-283) we suggested that the contention be redrafted so as to better define the petitioners' concerns and to challenge the staff's methods. The amended contention has been objected to by licensee for much the same reasons that were advanced against the original contention. It is petitioners' position that TMI-2 has demonstrated that there are accident sequences which lead to core damage that are not included in the design basis accidents addressed by the licensee—that some of these sequences may be so likely that TMI-1 should not be allowed to restart. They charge that staff has failed to identify such sequences.

We recognize and share some of the petitioners' concerns but we do not see how the licensee or staff can precisely respond to such a broad charge. Moreover, we recognize that Robert D. Pollard is the technical advisor to the Union of Concerned Scientists and that UCS has other people with expertise in the field of nuclear safety. UCS can better specify its concerns. We are, as of now, admitting the contention for the purposes of discovery. We believe that UCS can further define its contention, yet keep it within the scope of this proceeding and relate it to the accident at TMI-2. The sooner UCS specifies the areas or sequences that must be addressed by licensee and staff, the greater will be the showing required in response to that specificity. Regardless of the final specificity of this contention, the board itself expects the staff to provide evidence addressing the general method by which the staff has determined whether accidents within the scope of this proceeding fall within or outside the design basis.

UCS Contention No. 14 relates to components presently classified as non-safety related which can have an adverse effect upon the integrity of the core. Licensee objects because of lack of specification of the non-safety related systems and because it is outside the scope of the proceeding. We accept the contention despite licensee's objections but we limit the consideration to the core cooling system. Tr. 330-32.

UCS Contention No. 15 states that the short and long term recommendations of the staff specified in the Commission's order of August 9 should all be implemented before TMI-1 is permitted to resume operation. Neither the

licensee nor the staff object. Even so, the Board is unwilling to accept this contention as an issue in the hearing. If the contention is meant to question the basic concept of the Commission in its order of August 9 concerning the short-term, long-term approach to the proposed restart we reject the contention because it is beyond our jurisdiction. If, as counsel stated at the prehearing conference, the contention is meant to cover all of the issues which have not been independently challenged by UCS as a catch all contention, we reject it on the basis that, without any justifications, it lacks specificity.

UCS Contention No. 16 asserts that emergency planning, specifically evacuation, should be based "on a worst case analysis of the potential accident consequences of a core melt with breach of containment." For the reasons set forth in our introductory discussions of Class 9 accidents, we rule that the assumption of such an unspecified Class 9 accident upon which the contention depends is too vague, of insufficient bases and lacks nexus to the accident at TMI-2. However, emergency planning will be addressed in this proceeding in the context of other contentions which will be later specified and as a mandatory issue to be considered by the Board pursuant to the Commission's Order. As part of the inquiry on emergency planning, and consistent with our introductory Class 9 discussion, evidence may have to be presented on the question of whether evacuation plans adequately consider the credible consequences of an accident. As an emergency planning contention and the consideration of the matter shall be deferred as provided for other emergency planning contentions above. Tr.333-47.

UCS Contention No. 17 relates to the so-called "generic unresolved safety issues" and contends that all of those which may be applicable to TMI-I must be resolved before operation is permitted to resume. *Virginia Electric Power Company* (North Anna Nuclear Power Stations, Units 1 and 2), ALAB-491, 8 NRC 245, (1948). The UCS provides two examples of the unresolved safety issues: 1) the failure of the pressurizer power operated relief valve as a failure of non-safety systems as contributors to the accident and 2) the qualifications of safety related equipment in an accident environment. These have been identified as generic issues A-17 and A-24, respectively. The staff would accept the two examples but objects to the balance of the contention because it is not specific. Licensee makes a general objection with respect to insufficient bases. The Board would be able to accept the contention limited to the specific examples cited except that these examples are adequately covered in other UCS contentions. UCS Contentions Nos. 5 and 12 together relate to PORV valves and environmental qualification of safety related equipment. UCS Contentions Nos. 7 and 14 relate to water level in fuel assemblies and the interrelation of non-safety related equipment on the integrity of the core. Given the lack of specificity of Contention No. 17, it is rejected. The issues stated therein are adequately covered. Tr. 347-56.

UCS Contentions No. 18 would require that licensee demonstrate conformance with each regulatory guide presently applicable to plants of the same type. Both the staff and the licensee object because, except for the example, the contention is too broad. The example given, which relates to the

indication system as required by Regulatory Guide 1.47, is already the subject of UCS Contention No. 9. Apart from this example the contention is too broad for litigation and is therefore rejected in its entirety. Tr. 356-58.

UCS Contention No. 19 is centered around the possibility that a postulated fire may damage both redundant divisions of shutdown systems but is without further specificity. It is objected to on that basis. The Board rejects the contention because it is without specificity and is outside the scope of the proceeding in that no relationship to the TMI-2 accident has been demonstrated. Tr. 359-67.

UCS Contention No. 20 asserts that there has been no accurate assessment of the risks associated with the operation of TMI-1; that the Commission's withdrawal of endorsement of WASH-1400 leaves no technical basis for concluding that the actual risk is low enough to justify its operation and, by implication, that a NEPA analysis of Class 9 accidents is required before TMI-1 may be permitted to resume operation. We have above discussed our standards for accepting Class 9 contentions. Contention No. 20 is too vague and unfounded. The Board has before it the issue of the need for an environmental impact statement which will be addressed in a later order of this board. In the meantime, the contention is rejected.

TMIA Contentions¹⁴

TMIA Contentions Nos. 1 and 2 are addressed to potential cumulative effects on the offsite population if gaseous and liquid effluents from restart of TMI-1 are added to those which have already been released in normal operation of TMI-1 and 2, during the accident at TMI-2, and which will be released during cleanup of TMI-2. Licensee objected to these contentions asserting that they challenge Appendix I to 10 CFR 50 which considers radiation releases on an individual reactor basis, *i.e.*, that releases of radiation from TMI-1 are to be considered independently from those at TMI-2. Staff originally asserted that 10 CFR 20 barred consideration of these contentions, but in the course of the prehearing conference decided that licensee's analysis, *i.e.*, opposing the contentions as attacking Appendix I was the better approach. Tr. 394.

Neither 10 CFR 50 nor 20 can be construed so as to eliminate TMIA Contentions Nos. 1 and 2. Section 50.34a is addressed to numerical design objectives applicable to effluents from *normal* operations or expected operational occurrences; specifically, these guidelines "are not to be construed as radiation protection standards." Part 20 of 10 CFR does set forth standards for protection against radiation. Cumulative exposures are addressed in 20.102 but apply to individuals in restricted areas. Section 20.106 sets forth regulations applicable to limitations on radioactivity in effluents to unrestricted areas; however, these regulations are framed in terms of average exposures over a period not exceeding one year. Further, the tabulated numerical limits are not in themselves restrictive since higher limits are

¹⁴ "Revised" contentions.

acceptable if the licensee can demonstrate "... a reasonable effort to minimize the radioactivity discharged in effluents to unrestricted areas." Thus, it appears that the matters addressed in 10 CFR Parts 20 and 50 fail to include that matter which is the main thrust of TMIA Contentions Nos. 1 and 2, *i.e.*, cumulative effects including the effects of releases during the accident. Therefore, these sections cannot be construed to bar consideration of these contentions.

The "necessary and sufficient" language of the Commission's August 9 order relates to the "health and safety" of the public, terms usually associated with the Atomic Energy Act. Order, p. 12. For this reason, the Board is uncertain of the reach of its jurisdiction in the matter of cumulative or residual risks. The Board takes note of the strong public interest in this very matter, as abundantly indicated in the numerous limited appearances received during the prehearing conference. The Board also notes that, in the matter of *Maine Yankee Atomic Power Company*, (Maine Yankee Atomic Power Station), CLI-74-2, 7 AEC 2, 1974, the Commission considered the statutory bases for consideration of residual effects and stated, "The real question turns not upon a choice of statutory labels, but upon the requisite weighing of the residual risks at some point of the licensing process." *Id.* at 4.

In consideration of the above points the board exercises its discretion and accepts TMIA Contentions Nos. 1 and 2.

TMIA Contention No. 3 is a psychological stress issue and consideration is deferred.

TMIA Contention No. 4 was revised on November 13 to make it clear that the contention relates to plant security and is not a psychological issue. This contention predicts that if TMI-1 is restarted, wide-spread civil disruption would occur threatening the security of Three Mile Island with a consequence that there would be a release of high levels of radiation into the air and into the water causing sickness and death.

Licensee and NRC staff oppose this contention on the dual grounds that the allegation is beyond the scope of the proceeding and it is without basis. We see sufficient connection between the accident and the predicted effect on the safe operation of TMI-1, but reject the contention because it is without basis. TMIA Contention No. 4 would depend upon four essential assumptions. The first is that a group of demonstrators would seek to invade Three Mile Island. We do not reject this assumption out of hand; it has happened at other nuclear stations.

Second, the contention requires us to assume that there is a collapse of the TMI-1 security system and that law enforcement authorities have lost control. As the staff points out in its opposition to the contention, even in a case worse than that predicted by TMIA, *i.e.*, an assault by well-armed and trained saboteurs, there is no need to assume that "... settled and traditional governmental assistance . . ." will not meet the occasion. *Consolidated Edison Company of New York* (Indian Point Station, Unit No. 2) ALAB-197, 7 AEC 826, 830.

Third, TMIA would, by implication, have us assume that in the event of an intrusion upon the plant site, and a breach of security, TMI-1 would not be shut down safely, as compared to continued operation in the face of the threat. Finally, the contention would require an assumption that demonstrators, assertedly opposed to nuclear energy and the operation of TMI-1, would seek, and cause a result opposite to their very purpose,—the release of radiation.

To the extent that the contention raises issues about the threat upon the TMI-2 cleanup operations, the contention is beyond the scope of this hearing.

TMIA Contention No. 5 is accepted without objection because TMIA modified the concluding phrase to change “revoked” permanently to “suspended” permanently. Tr. 415-16.

TMIA Contention No. 6 raises an issue of the financial capability of the licensee. Licensee objects to paragraph numbered (1) on the basis that it is so unbounded as to exceed the scope of the proceeding. We disagree. The scope on financial qualifications is quite broad as it is set forth in the Commission’s order. Commission’s order, pages 7, 12, and 14. Paragraph numbered (2) is not accepted as a part of Contention No. 6 because it is only a basis for paragraph numbered 1. Tr. 416-31.

TMIA Contention No. 7 is not objected to and is accepted.

TMIA Contention No. 8 asserts the need for an environmental impact statement. This will be considered in a separate order.

Ms. Aamodt Contentions

Ms. Aamodt Contention No. 1 would require a program of psychological testing and counselling for TMI-1 operator personnel and management. The contention is rejected because it is without basis and is outside the scope of the proceeding. Tr. 432-39, 446.

Ms. Aamodt Contention No. 2 is accepted without objection.

Ms. Aamodt Contention Nos. 3 through 6 relate to emergency planning. Consideration is deferred pending the revised emergency contentions.

Ms. Aamodt Contention No. 7 would require an assessment of the “nuclear environment” of the petitioner’s family including TMI-2, Peach Bottom, and Salem. The contention is rejected as being beyond the scope of the proceeding. Tr. 459-60.

Ms. Aamodt Contention No. 8 relates to the effect of radwaste management upon the operation of TMI-1. At the special prehearing conference Mr. Aamodt explained that the contention was intended to refer to short term recommendation 5. Commission’s August 9 order, pages 6 and 7. So limited the board accepts this contention. Tr. 453-57.

Ms. Aamodt Contention No. 9 this contention as originally presented and as explained by Mr. Aamodt asserts that the perceived effect upon the products produced by the Aamodt farm by the accident at TMI-2 and the operation of TMI-1 would have real and direct economic effects upon the Aamodts and therefore upon their health. Despite Mr. Aamodt’s disclaimer, this contention depends directly upon psychological stress. Therefore it is deferred. Tr. 461-63.

Ms. Aamodt Contention No. 10 would require that representatives of licensee and the NRC who interface with the public must be subject to criminal prosecution for false statements as a condition for restart of TMI-1. This contention is beyond NRC jurisdiction and is beyond the scope of the proceeding.

Ms. Aamodt Contention No. 11.1. is essentially an argument that there must be a cost-benefit balancing and an environmental impact statement. The Board defers this consideration until a future order.

Ms. Aamodt Contention No. 11.2. asserts that the routine operation of TMI-1 denies the public the opportunity for life, liberty, and the pursuit of happiness. This contention is rejected as beyond the scope of the proceeding.

Ms. Aamodt Contention No. 12 is a restatement of her Contention No. 11 but with a different direction. Aamodt Contention No. 12 includes many allegations and was not discussed by Mr. Aamodt. Tr. 468. In its entirety the contention is unacceptable for litigation because it goes to the ultimate legal conclusions. The individual allegations relate, in some instances, to mandatory issues which, in any event, will be given consideration during the proceeding.

Mr. Sholly Contentions

Mr. Sholly Contention No. 1 relates to the adequacy of the TMI-1 containment isolation system. Mr. Sholly defined the scope of his contention to the satisfaction of the licensee who withdrew its objection. Tr. 560-562.

Mr. Sholly Contention No. 2 is accepted subject to his explanation at Tr. 563.

Mr. Sholly Contentions Nos. 3, 4, and 5 are not objected to and are accepted.

Mr. Sholly Contention No. 6 is not opposed in the form in which he has redrafted it for clarity. We accept this contention as it has been redrafted at Tr. 563-567, and by his communication dated December 11, 1979.

Mr. Sholly Contention No. 7 is accepted without objection.

Mr. Sholly Contentions Nos. 8 and 9 refer to emergency preparedness and consideration is deferred.

Mr. Sholly Contention No. 10 is accepted without objection.

Mr. Sholly Contention No. 11 challenges the cladding failure assumptions of 10 CFR 50.44. He has now filed a petition under 10 CFR 2.758. The Board will act upon this petition in the very near future. In the meantime the parties may proceed to discover on the issues raised by this contention.

Mr. Sholly Contention No. 12 asserts in general that an environmental impact statement is required and, in particular, that the psychological impact of the Unit 1 restart must be evaluated in an EIS. Both the general and specific portions of this contention will be deferred until further order.

Mr. Sholly Contention No. 13 deals with the adequacy of the Unit No. 1 computer system. Licensee objects to the contention on the basis that it was not included in the Commission's bases for suspension. For the reasons set

forth above, (Scope of the Proceeding) the board accepts the contention over licensee's objections.

Mr. Sholly Contention No. 14 brings into question the management and administrative capabilities of licensee. Both the licensee and the staff agree that the subject matter is within the scope of the proceeding but would require greater specificity. Mr. Sholly has agreed that, in the course of discovery, the contention will be further defined. Tr. 577. With this commitment the Board accepts the contention.

Mr. Sholly Contention No. 15 is not objected to. The Board accepts it.

Mr. Sholly Contentions Nos. 16 and 17 were not submitted until November 29. The staff has not yet responded to these contentions. The Board will rule upon them in a future order.

ANGRY Contentions

ANGRY Contention No. 1 is a statement, not challenged by anyone, that adequate emergency response plans should be made a precondition to the restart of TMI-1. It is therefore consolidated with ANGRY's Contention No. 2. Tr. 578-586.

ANGRY Contentions Nos. 2 and 3 pertain to emergency planning. Consideration is deferred.

ANGRY Contention No. 4 relates to management capability. Licensee has no objections. The staff believes that the contention is inadmissible because it lacks specificity. We accept the contention over the staff's objections. We note that ANGRY has added an additional basis for the contention which is accepted. Tr. 597.

ANGRY Contention No. 5 in general would require four modifications to the design of the TMI-1 reactor. 5(A) relates to the hydrogen recombiner and is challenged by the licensee on the basis of 10 CFR 50.44. As we did with Mr. Sholly's Contention No. 11, we will accept this contention for discovery pending our ruling upon the motion under Section 2.758. ANGRY's Contention 5(B) and (C) are not objected to and the Board accepts them. Tr. 599-601. Licensee withdrew its objection. Tr. 600. ANGRY's Contention 5(D) is objected to by the licensee on the basis of specificity. It would require rapid filtration of large volumes of contaminated gases and fluids in effluent pathways. The contention is lacking in specificity but the Board will accept it with the understanding that ANGRY must specify in the source of discovery.

ANGRY Contention No. 6 is a generalized contention the essence of which would require that all safety related systems in TMI-1 must be subjected to thorough analysis and modification to show their ability to withstand hypothetical accident scenarios that reflect all conceivable combinations of human and mechanical failures. For the reasons we have discussed in the section on the scope of the hearing we reject this contention. However, we will permit ANGRY to adopt UCS Contention 13.

ECNP Contentions

ECNP Contentions Nos. 1 through 10 were contained in a supplement to its petition dated October 22, 1979. That petition incorporated by reference the ECNP Contentions 1 through 12 filed on October 5. The October 5 contentions have been renumbered to begin as Contention 11 running through Contention 22.

ECNP Contention 1(a) refers to the adequacy of the TMI-1 computer. Licensee objects to the contention as being beyond the scope of the proceeding. The contention is accepted over licensee's objection because it compares the computer with that at Unit 2 and alleges that the computer at Unit 2 was involved in the accident.

ECNP Contention 1(b) is accepted without objection.

ECNP Contention 1(c) alleges that electronic signals sent to the control room record the wrong parameters, giving as an example the electromatic relief valve. The licensee does not object to the specific part of the contention but objects to the generalized challenge to unidentified control systems. The Board observes the contention is properly limited to signals sent to the control room. The Board will further limit the contention to core cooling systems and containment isolation systems. This contention is regarded by the Board as being parallel to and complementary to UCS Contention No. 9.

ECNP Contention 1(d) alleges that many monitoring instruments are of insufficient indicating range for their assigned purposes. ECNP modified its contentions during the special prehearing conference to limit the contention to all important safety related monitoring instruments and to important safety related radiation monitoring equipment. Tr. 641. With respect to paragraph 1 of Contention 1(d) the Board accepts the contention but limits it to core cooling and containment isolation systems. The references in both paragraphs to the worst case and worst possible accidents are not accepted for the reason specified in the Class 9 discussion above.

ECNP Contention 1(e) is accepted to the extent that it relates to a further analysis of the spectrum of small break loss-of-coolant accidents. The balance of the contention is too broad for litigation. The contention as a whole is closely related to UCS Contention No. 8 which we will permit ECNP to adopt.

ECNP Contention 1(f) raises the issue of many vital instrument controls and other components failing to function properly because they were not considered "safety related." The example given, pressurizer level indicators, are alleged to have failed in accident conditions and environment. The Board rejects ECNP Contention 1(f) as written but will permit the intervenor to substitute in its place related UCS Contentions Nos. 12 and 14.

ECNP Contention 1(g) is not objected to as it was modified at the special prehearing conference. Tr. 665-66. It is therefore accepted with the deletion of the words "substantially more than."

ECNP Contention 1(h) is accepted without objection.

ECNP Contention 1(i) raises issues concerning the design of the control room panel. The licensee withdrew its objection to this contention and joined

the staff in its position that it will seek a better definition of the problem later in the proceeding. We note that this contention raises the same issues through slightly different approaches as does Mr. Sholly's Contention No. 15.

ECNP Contention No. 2 pertains to emergency planning and consideration is deferred.

ECNP Contention No. 3 alleges a lax management attitude on the part of licensee. Licensee does not object to the contention except for the language "which lead to the wholesale rush to get TMI-2 into commercial operation." The Board agrees that this may not be an appropriate part of the contention; however, it is not inappropriate to consider the allegation as a possible basis for the contention.

ECNP Contention No. 4 asserts that the range of possible consequences of an accident such as the one at TMI-2 must be considered in light of four additional postulated circumstances:

ECNP Contention 4(a) raises the question of operator skills. The Board rejects this contention because it is not a quantifiable question and ECNP offers no guidelines. We note however that the subject matter will be included in evidence submitted in this proceeding under Section 2.1.9 of NUREG-0578, Item 3, Transients and Accidents, page A-45 which requires that failures of operators to perform required control manipulations shall be given consideration for permutation of the analyses.

ECNP Contention 4(b) postulates the TMI-2 accident in a reactor with a full inventory of fission products and is accepted over the objections of the licensee and the staff.

ECNP Contention 4(c) postulates a site evacuation during an accident and the Board accepts the contention. We wish to consider evidence on the contention addressing the need to evacuate the site in an accident situation.

ECNP Contention 4(d) assumes a core meltdown during the TMI-2 accident which is rejected for the reasons stated under our Class 9 discussion above.

ECNP Contention No. 5 relates to the cumulative impact of radiation exposure and is accepted over the objection of the licensee and the staff on the same basis that the Board has accepted TMIA Contentions 1 and 2. Although we accept this contention for discovery the Board notes that the contention is intertwined with bases and argument. We will expect the contention to be redrafted in the course of discovery curing the defect. Tr. 674-77.

ECNP Contention No. 6 raises psychological stress issues and consideration will be deferred.

ECNP Contention No. 7 was originally framed immediately following the TMI-2 accident. It charges that the ECCS design is inadequate in that it will not limit core temperatures in accordance with 10 CFR 50.46. The contention was objected to by licensee on the grounds that the basis for the contention was incorrect. Further explanation (Tr. 796-800) by the petitioner brought out its view that operator actions were responsible for the failure of the ECCS and left the thrust of their contention in doubt. Rather than reject the petitioners' right to litigate their concerns, we will allow them to adopt UCS Contention

No. 10 which addresses the allegation of misoperation of the ECCS.

ECNP Contention No. 8 asserts that operation of TMI-1 or TMI-2 under any circumstances would subject the people involved to double jeopardy and would constitute cruel and unusual punishment. The contention is rejected because it raises no litigable issue and because it is beyond the jurisdiction of the Board and beyond the scope of the proceeding. Tr. 800.

ECNP Contention No. 9 asserts that the regulation and enforcement processes of the NRC are fundamentally inadequate and specifies that the practice of "regulation by audit" is not reliable. The contention continues in the vein that, to allow TMI-1 to operate, other operators of nuclear plants will not be deterred from unsafe operation. The contention is rejected because it is beyond the scope of the proceeding and the jurisdiction of the Board. Tr. 801, 806.

ECNP Contention No. 10 follows the same theme started in its Contention No. 9 and is denied for the same reasons.

ECNP Contentions Nos. 11 through 13 each relate to various aspects of the fuel cycle and are rejected as being beyond the scope of the proceeding.

ECNP Contention No. 14 would require TMI-1 to remain shut down until the full range of accidents including risk of Class 9 accidents have been fully analyzed for the TMI site. We will reject this contention for the reasons set forth in our discussion of Class 9 accidents above but we will permit ECNP to adopt UCS Contention No. 13 relating to the staff's methods for analyzing such accidents. Tr. 650-65.

ECNP Contention No. 15 contends that TMI-1 should remain shut down until investigation has been completed inquiring into whether perjury was committed by various witnesses in the licensing of either Unit 1 or Unit 2. ECNP concedes that this contention as stated is not litigable; that it is in function more closely related to a motion for such an investigation. Tr. 813. As a motion, the Board denied it because such an investigation is beyond the board's jurisdiction. Tr. 833-34.

ECNP Contention No. 16 asserts that the emissions from the *normal* operation of TMI-1 had had adverse effect upon the reproductive success of farm and domestic animals which effect was worsened by the accident at TMI-2. The Board rejects the contention because it is premised upon the normal operation of TMI-1 which is a consideration beyond the scope of this proceeding. Tr. 814-16. ECNP may, however, adopt TMIA Contentions 1 and 2.

ECNP Contention No. 17 relates to licensee's emergency planning and consideration is deferred. Tr. 816.

ECNP Contention No. 18 asserts in advance that the testimony of representatives of licensee cannot be accepted as credible by the Licensing Board. During the special prehearing conference the Board identified this contention as a motion to determine in advance that witnesses in the proceeding will not be credible. Upon further discussion ECNP's representative recognized that Contention No. 18 is not a suitable matter for litigation in this proceeding. Tr. 818.

ECNP Contention No. 19 is accepted without objection.

ECNP Contention No. 20 alleges that larger-than-design basis aircraft and smaller aircraft crashing into the site should be considered because of a loss of protective barriers as a result of the accident. Tr. 819-830, 837-853. The Appeal Board in the TMI-2 operating license proceeding has made determinations bearing upon this issue. ALAB-486, 8 NRC 9, 25-49 (1978); ALAB-570 (November 2, 1979.)

It has been determined that at *present* levels at Harrisburg airport the probability of a crash of heavy aircraft is less than one chance in ten million. ALAB-570, p. . . ¹⁵Therefore this board need not consider a larger-than-design design basis aircraft crash into the facility in the short term while fission products released from the core remain in the containment. There is no basis upon which we can expect that purging of fission products from the containment will extend significantly into the period when the probabilities of a large aircraft crash remain undetermined. Events may prove us wrong on this point, but if that should be, it is still premature to consider the large aircraft possibility now. The determination by the TMI-2 Appeal Board on longer term probabilities can be later considered in our proceeding.

By definition of the contention and by determination, the safety-related structures in normal configuration are designed to withstand the effects of a crash of a small airplane weighing 200,000 pounds flying at 200 knots. ALAB-570, n. p. 2. ECNP would bring this possibility into issue by its assertion that protective barriers between the fission and activation products and the outside environment have been diminished, thus a crash could affect the safe operation at TMI-1. If the protective barriers referred to in the contention are the plant's vital structures, power supplies and cooling water sources, ECNP has provided absolutely no basis indicating that the TMI-2 accident has affected these barriers, nor can we envision any basis for such an assumption.

There remains, however, one other issue—whether fission products on the site unprotected by the containment or other safety-related structures exposed during the course of cleanup of TMI-2, (e.g. the EPICORE II, process), could be dispersed by a crash of any size aircraft. The probability of a crash of any size aircraft into the site has not been adjudicatively determined. Nevertheless the board declines to accept this aspect of the contention as an issue because ECNP has provided no basis to assume that the chain of crash probability, overall consequences and specific effect on TMI-1 creates a credible danger to the health and safety of the public. First, the exposure of an aircraft crash into radioactive materials outside of safety-related structures will be during a relatively short time period. We can identify no basis for assuming that the release of radioactive material being processed outside of safety-related structures would be in amounts and intensity to result in crash consequences so severe that the operators of TMI-1 could not safely shutdown the reactor. This consideration, of course, differs from the environmental effects of a

¹⁵ The surviving aircraft issue before the Appeal Board relates to the probability of heavy aircraft crashes over the normal life of the reactor.

release of radiation during TMI-2 clean up, which is beyond the scope of this proceeding. The Board has accepted ECNP's Contention 4(c) relating to the need to evacuate the TMI site. This contention, we believe, embraces the basic thrust of any cognizable portion of ECNP's aircraft contention. ECNP has withdrawn the second paragraph of its Contention 20, relating to EPICOR II. Tr. 820.

ECNP Contention No. 21 alleges construction irregularities particularly with respect to the concrete of the TMI-1 containment building. It is beyond the scope of this proceeding and is rejected.

ECNP Contention No. 22 is a conclusionary contention asserting that for a variety of reasons Met-Ed has demonstrated that it should not be permitted to operate TMI-1 because it has no concern for the safety and the health of the public. This vague contention is not acceptable. ECNP seems to have withdrawn it. Tr. 818.

CEA Contentions

CEA Contention No. 1 is a general contention arguing for an environmental impact statement. Consideration is deferred.

CEA Contention No. 2(a) would require evacuation planning within 100 miles because of radiation emanating from a core meltdown and breach of containment. The Board does not accept this contention for the reasons set forth with respect to UCS Contention No. 16. Contentions 2(b), (c), and (d) which relate to general emergency planning will be considered separate from Contention 2(a) which is tied to a core meltdown and breach of containment. 2(b), (c), and (d) are accepted without objection but consideration will be deferred pending CEA's consideration of the licensee's revised emergency plans. However we note that Contention 2(c) which relates to adequate emergency measures to prevent dumping of highly radioactive water into the Susquehanna, CEA has intertwined the possible dumping with the economic consequences of such dumping and possible measures to guard against such consequences. Upon resubmitting this contention CEA is urged to break it into specific declarative statements.

CEA Contention No. 3 relates to offsite monitoring and CEA has agreed to reconsider this contention in light of the revised emergency plans. Tr. 708-09.

CEA Contention No. 4 as originally drafted challenged the accuracy of the licensee's offsite radiation monitoring and the perception by the public of that accuracy. During the special prehearing CEA explained that the reach of the contention was primarily addressed to the public's perception of the accuracy of the licensee's monitoring. To the extent that the contention is concerned with the public's perception of licensee's truthfulness we regard the contention as being one potentially cognizable under psychological stress issues. To the extent that it relates to the accuracy of the offsite monitoring the determination will be deferred pending CEA's consideration of licensee's revised emergency preparedness plans. Tr. 709,711.

CEA Contention No. 5 contends that TMI-1 should not be permitted to resume operations until radioactive water from TMI-2 is disposed of. This contention is within the scope of the proceeding and is accepted. However, only the first sentence of CEA Contention 5 is suitable for litigation, the remainder of the contention is basis.

CEA Contention No. 6 is not objected to considering the amendment by CEA during the special prehearing conference. Tr. 713. On that basis, it is accepted.

CEA Contention No. 7 is accepted without objection.

CEA Contention No. 8 relates to licensee's management capability. The contention is accepted without objection except that the last sentence relating to the show-cause requirement as a result of the accident has been deleted by CEA. Tr. 715-16.

CEA Contention No. 9 alleges that the licensee has inadequate financial resources to operate TMI-1 safely. We will accept this contention as being one of the mandatory issues required by the Commission in its order of August 9. Only the first sentence of the contention however raises any issue, the balance is bases and, as such, it is separated from the contention.

CEA Contention No. 10 would require consideration of spent fuel and other waste from TMI-1, Table S-3, Radon 222 and the possible theft of enriched uranium destined for TMI-1. No subject matter within the scope of this proceeding is identified. CEA's attempt to withdraw Contention No. 10 and add it to Contention No. 1 will not serve to salvage the subject matter of the contention which is rejected.

CEA Contention No. 11 challenges the fundamental regulatory process in NRC licensing. It is rejected as being too vague and, in large part, beyond the scope of this proceeding. Tr. 722-24.

CEA Contention No. 12 would require an evaluation of all possible sequence of events that could occur at TMI-1. It is totally unbounded and without specificity and the Board cannot accept it as an issue. However, CEA will be permitted to adopt UCS Contention No. 13 on the basis discussed by the Board above. Tr. 724-40.

CEA Contention No. 13 is accepted without objection.

Newberry Petitioners Contentions

Newberry Petitioners Contentions Nos. 1 and 2 raise issues of psychological stress and are therefore deferred.

Newberry Petitioners Contention No. 3 refers to evacuation planning. The counsel for Newberry has agreed to consider the licensee's revised emergency plans and to specify its concerns by December 19.¹⁶ This is the agreement which was adopted by the Board for all emergency plan contentions. In the meantime, however, the Board rules that Newberry Petitioners Contention

¹⁶ An extension until December 24 was granted by telephone on December 17. Counsel expects to file by December 20, however.

No. 3 satisfies the requirements of 10 CFR 2.714(b) in that it has lasted at least one contention suitable for litigation.

PANE Contentions

PANE Contentions Nos. 1 and 2 are psychological stress issues, consideration of which is deferred.

PANE Contention No. 3 relates to emergency planning. However, by motion dated December 15, 1979, PANE moved to withdraw its Contention No. 3. It is PANE's prerogative to withdraw the contention; board permission is not required.

Because PANE has not submitted at least one contention presently acceptable for litigation, the Board defers ruling upon PANE's status as an intervenor until the Commission determines whether psychological stress issues may be considered.

In the course of ruling on the contentions of the petitioners discussed above, we have in each case, except for PANE, admitted at least one contention as an issue in this proceeding. Accordingly, each of the other petitioners ruled upon above has now satisfied the contention requirements of 10 CFR 2.714(b) and is admitted as an intervenor in this proceeding.¹⁷

Petition of Ms. Jane Lee

Ms. Jane Lee wrote to the Commission on August 14, 1979 requesting permission to "participate in testifying" in these hearings. The Board and the licensee regarded the letter to be a request to make a limited appearance statement. No action was taken on her communication. Ms. Lee reinforced the thought that her request was to make a limited appearance statement when in her "Notice . . ." dated October 11, she protested what she perceived to be a five minute limitation on limited appearances. On October 15, Ms. Lee filed an "Amendment to Intervention" in which she stated that her purpose was to intervene pursuant to 10 CFR 2.714(a). Her amendment recited the following "contentions" in their entirety:

1. I reside within three miles of Three Mile Island.
2. Medical and Environmental information indicating the feasibility or prudence of pursuing the operation of nuclear power at the Three Mile Island Station.
 - (a) Birds
 - (b) Farm Animals
 - (c) Plant Life

¹⁷ We have previously ruled that each of these intervenors had satisfied the standing requirement of 10 CFR 2.714. Memorandum and Order Ruling on Petitions and Setting Special Prehearing Conference (September 21, 1979); and, with respect to Ms. Aamodt, at the special prehearing conference. Tr. 46. In addition, at the special prehearing conference (Tr. 46), we ruled that the Pennsylvania Consumer Advocate has demonstrated his right to participate as a representative of an interested governmental agency pursuant to 10 CFR 2.715(c).

3. Malfunctions of Unit 1 prior to the Unit 2 accident.

I will take the position that any resumption of nuclear power plants in the vicinity of Three Mile Island will intensify the on-going detrimental effects on the environment and animals. These adverse conditions will increase the degenerating health problems for the animals and eventually affect the human populous in the same area.

The licensee objected to Ms. Lee's intervention on the basis of timeliness and lack of specificity of her contentions.¹⁸ The NRC staff also opposed her petition for essentially the same reasons but proposed that she be heard at the special prehearing conference on these issues.¹⁹

On November 3, Ms. Lee filed a written reply to the staff's response in which she addressed the question of timeliness by observing that her "original petition" was filed August 17, 1979. The board accepts Ms. Lee's explanation and notes that no harm has resulted from the timing of her filing. Her contentions were filed before the date set by the board for the filing of contentions in final form, October 22.

The Board announced at the special prehearing conference that Ms. Lee had demonstrated "standing" to intervene because she had shown the requisite interest in the proceeding. Tr. 45-46.

Ms. Lee was cautioned, however, that she was not then accepted as an intervenor because the Board had not yet ruled that at least one of her contentions were filed before the date set by the Board for the filing of conference session on November 8, 9, and 10. On November 10, when it appeared that the business of the special prehearing conference would have to be carried over to November 14, Ms. Lee indicated that she would prefer to return then to address the objections to her contentions because she wanted to discuss her intervention on the basis of ECNP's Contention 16. Tr. 697-98, 741.

Ms. Lee did not appear on November 14, having been called out of town unexpectedly. Tr. 853. She did not, however, ask anyone to speak for her, (Tr. 853-54) nor has she communicated with the Board since. ECNP indicated that it expected to use Ms. Lee as a witness on its Contention 16. *Id.*

The Board infers from these events that Ms. Lee had intended to adopt ECNP's Contention 16, which contention has now been rejected. Ms. Lee is left then with the contentions quoted above. They lack the specificity and bases required to be accepted as issues. Also, our ruling on ECNP's Contention 16 would apply to Ms. Lee's contentions. They are beyond the scope of the proceeding. Therefore the Board rules that Ms. Lee has not qualified as an intervenor in this proceeding. She has not listed any contention acceptable as an issue as required by 10 CFR 2.714(b). This ruling means that Ms. Lee's petition for leave to intervene is wholly denied and it is therefore

¹⁸ Licensee response dated October 31, 1979

¹⁹ NRC Staff's response dated October 31.

appealable to the Commission within ten days after the service of this order. Commission Order of August 9, p. 15; 10 CFR 2.714a.

In rejecting ECNP's Contention No. 16, the Board noted that issues raised by TMIA's Contentions Nos. 1 and 2 are related and we permitted ECNP to adopt them. It is possible that Ms. Lee may yet make a contribution to this proceeding by assisting the intervenors on these issues, and she may qualify to testify with respect to her concerns, but it is premature for the Board to make a ruling to that effect now.

Petition of Marvin I. Lewis

In our memorandum and order of September 21 ruling on petitions, we noted that Mr. Lewis resides about 90 miles from the TMI facility, and that, despite his several communications and many arguments, he had failed to demonstrate that he has standing to intervene. Subsequently we received from Mr. Lewis a 9-page undated amendment received by the Secretary of the Commission on September 27; a 12-page amendment dated September 26; 9 pages of undated draft contentions which he states were mailed on October 1; a 2-page letter dated October 3 with additional draft contentions; a letter dated October 9; three pages of additional contentions dated October 11; and 19 pages of final contentions dated October 22. We have reviewed all of Mr. Lewis's communications and his arguments at the special prehearing conference to determine whether he has now established his standing to intervene.

As with his earlier written submittals, many of his points are argumentative and difficult to relate to this proceeding. He asserts that there is a pattern of conduct by the various elements of the Commission designed to frustrate his participation; (Final Contentions, pp. 2-3) that the NRC is violating Pennsylvania statutes against murder and equal rights when men (to which subgroup Mr. Lewis belongs) are not included in evacuation plans. Final Contentions, pp. 4-7. He has devoted many pages of his filings to a detailed discussion of the Silkwood episode and litigation. Final Contentions, Appendix, pp. A4-A10. He has twice referred to intervenors' burden in responding to discovery requests in the *Susquehanna* proceeding involving another utility. Undated letter, p. 8; Final Contentions, p. 3. He also discusses cruel treatment of slaves in the pre-civil war era, and again refers to Nazis and Germany. Undated amendment, pp. 8-9.

In distilling his arguments, the Board sees three areas which arguably could be said to relate to Mr. Lewis's cognizable interest in the proceeding. He states very generally several times that in the event of a Class 9 accident at TMI-1 his life is in danger. *E.g.*, Amendment dated September 26, pp. 2-4; Tr. 772. Above we have ruled upon the unacceptability of generalized Class 9 contentions. Mr. Lewis, residing 90 miles away, has not attempted to particularize how his direct personal interest would be affected by any specific Class 9 accident, and given his lack of proximity, we discern no obvious basis to support "standing."

His effort to establish a personal interest as a member of the subgroup not included in the TMI-2 evacuation is without bases as it applies to the TMI-1 proceeding, and, at 90 miles away, Mr. Lewis's interest cannot be seen to be affected whether he is included in the population to be evacuated or not. *Final Contentions*, pp. 4-7.

He again raises the allegation that his interests are affected because he consumes milk and explains this earlier statement of interest: "6. Improper dose to public analysis. Many food pathways are ignored. Even a major release produces no deaths if you don't look for them. This was my point about I [drink] milk, but was misinterpreted by the Staff and Board." Amendment dated September 26, p. 11. The statement adds nothing to his earlier inadequate statement about milk to establish his interest in the proceeding.

Accordingly, the Board rules that Mr. Lewis has not shown that he has standing to intervene pursuant to the requirements of 10 CFR 2.714(2). We do not comment upon these inadequate or digressive statements of interest by Mr. Lewis as a disparagement of his attempts to intervene. His efforts in the public interest are commendable. He devoted at least four days of his time attending the special prehearing conference where he demonstrated that he has worked to familiarize himself with the proceeding. Tr. 772-94.

In its response to amended petitions dated October 31, 1979, the NRC staff separated and described Mr. Lewis's various contentions and numbered them 1 through 11. *Id.*, pp. 17-19. Mr. Lewis accepted staff's numbering and description. Tr. 780 in particular, Tr. 772-94 generally. The licensee also discussed Mr. Lewis's contentions in accordance with the staff's designation. Tr. 790. The staff in general believes Lewis contentions 4, 5, 6, and a portion of 11 raise appropriate issues. The licensee agrees that Lewis contentions 4, 5, and 6 are within the scope of the proceeding, although licensee believes that specificity is lacking in some instances.

The Board agrees that Mr. Lewis's contentions 4, 5, and 6 pertain to issues within the scope of the proceeding.²⁰ Contentions 4 and 6 are covered by contentions of other intervenors. Mr. Lewis's contention 5 concerning filters and preheaters, however, is not advanced by any other party. It is set forth as Item B on page 8 of Mr. Lewis's amended petition of October 22. (See Appendix). The Board believes that this contention is important and should be included in the issues to be determined at the hearing. We believe that Mr. Lewis can make a contribution to the record with respect to that contention, which hereafter we will refer to as the Lewis Contention. Accordingly as a matter of discretion, Mr. Lewis will be admitted as an intervenor on a strictly limited basis pursuant to 10 CFR 2.714(e). He may engage in discovery and present evidence on that one contention. Since his petition does not demonstrate his interest in the proceeding, he may not cross-examine

²⁰ No. 4, control room design; No. 5, filter and filter preheaters; No. 6, need for TMI-1 storage tanks for TMI-2 clean-up. Contention No. 11 restates his contention NO. 6 and adds an issue of ultimate waste disposal which is beyond the scope of the proceeding.

witnesses on the contentions of other intervenors or on board-initiated issues. He may however, cross-examine on his contention. Since this ruling partially grants a petition for leave to intervene, it is appealable to the Commission within ten days after service of the order by any party other than Mr. Lewis on the issue of whether the petition should have been wholly denied. August 9 order, p. 15; 10 CFR 2.714a.

Petition of Ms. Frieda Berryhill

In the Board's memorandum and order of September 21 we ruled that Ms. Frieda Berryhill, representing herself to be the chairman of the Coalition of Nuclear Power Plant Postponement, had failed to demonstrate her interest and standing to intervene. She supplemented her original terse statement of interest and aspects as to which she seeks to intervene by her letter dated September 24, 1979. We regard her letter as an amended petition and as a supplemental petition listing contentions under 10 CFR 2.714(a)(3) and (b).

The Board had expressed the view that if, as it appeared, Ms. Berryhill resides in Wilmington, Delaware, her residence would be 75 miles to TMI. Ms. Berryhill is uncertain about the distance from her home to Three Mile Island, but at the special prehearing conference she reported that her residence is in Newark, Delaware, not Wilmington as her address suggests. Tr. 180-82. We are therefore able to calculate the distance on a Rand McNally Road Atlas as 65 miles directly from the facility.

In the discussion of her interest in the amended petition, Ms. Berryhill states that, as chairman of CNPPP, she has a mailing list of 9,000 people whom she serves as a symbol. She was consulted about TMI-2 by the news media on March 28, 1979 and, in turn, she contacted the Delaware Civil Defense Office and others concerning communication. She states that she had an "awesome" responsibility to conduct herself as an example to hundreds of people to avoid a panic following the TMI-2 accident. For these reasons she resents any requirement that she must now present a petition to intervene in "legalese" language of bureaucrats.²¹

Even taking into consideration Ms. Berryhill's service to the people who look to her for guidance, the Board is without authority to waive the requirements of the Commission's Order and Notice of Hearing concerning intervention standards, and the requirements of the Commission's intervention rules as they pertain to interest and standing to intervene. Order and Notice of Hearing, August 9, 1979, pp. 15-16; 10 CFR 2.714(a)(2). Ms. Berryhill identifies none of the persons she serves as a symbol, and in fact does not even assert that she has been authorized to represent any of these persons in this proceeding. There is no information from which derivative standing may be inferred. Ms. Berryhill was provided an opportunity to expand upon

²¹ Intervention petitions are not required to be in technical or legal language. Other petitioners in this proceeding have succeeded in intervening with uncomplicated and direct statements.

her statement of standing to intervene at the special prehearing conference but she provided no further bases. Tr. 173-74.

Mr. Bernard J. August, writing under the letterhead of the Committee Against Atomic Power, has requested that Ms. Berryhill be granted intervenor status on behalf of the thousands of Delaware citizens, none of whom are identified except for Mr. August who also has a Wilmington address. Letter, August to Secretary, September 22, 1979.

Ms. Berryhill's residence 65 miles from TMI-1, with nothing more, does not establish her standing to intervene.²² Considering this distance in light of the activities she asserts to be the basis of her interest, she has still failed to demonstrate her standing to intervene. She has not identified any person or group of persons represented by her who have a greater interest in the proceeding than her own. She may not on her own without authorization undertake to represent the interests of third persons. *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2) ALAB-413, 5 NRC 1418, 1421 (1977).

Ms. Berryhill's petition for leave to intervene is also defective in that it fails to list any contentions which are acceptable as issues for litigation. Contentions Nos. 1 and 3 pertain to generic issues relating to Table S-3 of 10 CFR Part 51. These issues are outside the scope of the proceeding. In addition, except for the issue of Radon 222 raised in Contention 3, they are not acceptable because they attack the Commission's regulations. 10 CFR 2.758. Contention No. 2 is simply a complaint that hearings in TMI-2 were scheduled after the facility was licensed to operate, a point irrelevant to this proceeding.

Her Contention No. 4 is a generalized statement that ". . . Class 9 must be introduced in these proceedings." As we have ruled previously, such contentions are not acceptable for litigation.

Ms. Berryhill states that the remainder of her contentions ". . . are self explanatory and it was my intention to present documentation that Emergency Evacuation, Waste Disposal, and Radiation Monitoring are woefully inadequate."²³ These contentions, lacking in stated bases and specificity, are not self explanatory. As stated, they are inadequate as issues to be litigated.

Ms. Berryhill apparently would also have this Board adopt as one large contention the subject matter of Commissioner Bradford's address of August 2, 1979 at East Lansing, Michigan. This short reference to the Commissioner's remarks does not sufficiently identify any issue germane to the Order and Notice of Hearing, nor does her passing reference to civil disruptions in the final paragraph of her supplement of September 24. By letter received by the

²² See a discussion of the relationship of distance to facility and standing to intervene in our memorandum and order of September 21, p. 8, n. 3.

²³ At the special prehearing conference, Ms. Berryhill briefly discussed the contentions contained in her supplemental petition but added nothing to qualify her contentions as issues in this proceeding. Tr. 173-78.

Secretary on November 2, Ms. Berryhill added a new contention by enclosing her letter to the Commission of October 29, and she discussed this contention at the special prehearing conference. Tr. 178-80. This contention challenges the need to intervene in this and other proceeding until there is a cost benefit balancing of permanent waste disposal and it raises other aspects of the uranium fuel cycle. It is outside the scope of this proceeding.

Having failed to establish her standing to intervene and having failed to list at least one contention acceptable for litigation, Ms. Berryhill's petition to intervene is wholly denied on two bases. She may appeal this order to the Commission within 10 days after its service. Commission Order of August 9, p. 12; 10 CFR 2.714a.

Consolidation

The Commission instructed the Board to consolidate the participation of the parties pursuant to 10 CFR 2.715a to the maximum extent possible pursuant to that section. August 9 order, p. 10. The Board and the participants extensively discussed the possibility of consolidations at the special prehearing conference. Tr. 477-520. Petitioners for intervention and Commonwealth agencies were virtually unanimous that consolidation of parties would not be workable in view of the disparity of interests and the fact that relatively few contentions are shared by petitioners. Even the licensee, who has the greatest interest in an expeditious hearing, did not urge consolidations under Section 2.715a, but proposed a single spokesman approach as authorized by Section 2.714(e). Letter from Trowbridge to board members, November 2, 1979. This procedure, on a voluntary basis, was generally favored by the petitioners. Overall the Board believes that a single spokesman, lead counsel, or lead intervenor approach has merit. Intervenors are urged to work toward designating a single spokesman, lead counsel, or lead intervenor approach has merit. Intervenors are urged to work toward designating a single spokesman or lead spokesman on major issues, and in particular designations of a single or lead person for the cross-examination of witnesses. Voluntary agreement on lead persons will serve the intervenors better than board designation and the traditional board controls used to avoid cumulative and repetitious cross-examination.

In the event a voluntary approach which satisfies the goal of efficiency without sacrificing substance is not agreed upon and found acceptable by the Board, the Board will take mandatory consolidation measures. The intervening parties are directed to furnish the Board with their voluntary plan not later than ten days before the prehearing conference pursuant to 10 CFR 2.752, which will be later scheduled. Negotiations among intervening parties pursuant to this directive shall begin no later than the close of general discovery.

Discovery

At the special prehearing conference the Board authorized informal discovery to begin immediately on contentions not objected to and on

mandatory issues. Tr. 520-24. Formal discovery pursuant to 10 CFR 2.740-2.742 is now authorized. In at least two instances as of this writing interrogatories have already been served. The date of service of interrogatories or other formal discovery requests already served shall be deemed to be the date of the service of this order. General discovery shall be *completed* no more than sixty days after the service of this order. Discovery on new matters contained in the staff's Safety Evaluation Report (SER) is authorized, and must be completed no later than 30 days following service of the SER. The staff predicts that the SER will issue in January, 1980. Tr. 553.

Summary Disposition

The Board will entertain motions for summary disposition pursuant to 10 CFR 2.749. As discovery draws to a close, a deadline for the filing of summary disposition motions will be set, probably 30 days following the close of discovery. This deadline may not be the same as the 45 days before the time fixed for the hearing as set forth in Section 2.749. Motions for summary disposition may be filed any time before the established deadline. It may be that a party opposing a summary disposition motion cannot justify its opposition without further discovery. That answer, if reasonably supported, will be considered by the Board under Section 2.749(c).

Appendix

A reproduction of each contention as filed in final form is appended. Modifications tendered at the special prehearing conference are not shown.

Motions for Corrections

Motions for corrections of this order shall be filed within 10 days after its service.

FOR THE ATOMIC SAFETY AND LICENSING BOARD

Walter H. Jordan

Linda W. Little

Ivan W. Smith, Chairman

Dated at Bethesda, Maryland
this 18th day of December, 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

COMMONWEALTH EDISON
COMPANYDocket Nos. 50-373
50-374
(10 CFR 2.206)(LaSalle County Station,
Units 1 and 2)

December 4, 1979

The Director of Nuclear Reactor Regulation denies a petition filed under 10 CFR 2.206 of the Commission's regulations requesting the suspension or revocation of the construction permits for LaSalle County Station, Units 1 and 2 pending completion of confirmatory review of design modifications of the facilities' Mark II containment system.

DIRECTOR'S DENIAL OF REQUEST UNDER
10 CFR 2.206

By petition dated August 21, 1979, Jan L. Kodner, Esq., on behalf of Citizens Against Nuclear Power, *et al.*, (hereinafter CANP), requested, pursuant to 10 CFR 2.206 of the Commission's regulations, that the Director of Nuclear Reactor Regulation and/or the Director of the Office of Inspection and Enforcement institute a proceeding to suspend or revoke Commonwealth Edison Company's construction permits for the LaSalle County Station, Units 1 and 2. Because the nature of the request is more appropriately within the jurisdiction of this office, I have considered the request for possible action.

I

The basis of CANP's request is the fact that Commonwealth Edison did not explicitly consider, in the original design for the LaSalle facility, the hydrodynamic loads that result from the dynamic effects of drywell air and steam being rapidly forced into the suppression pool during a postulated loss-of-coolant accident. CANP requested the construction permits be revoked until confirmatory review of design changes being implemented to accommodate these newly analyzed hydrodynamic loads are completed. Their concern is that construction of the reactors may be proceeding without a determination by the Licensee and the Nuclear Regulatory Commission as to exactly which "vital design specifications" the plant should be built.

On the basis of the information submitted by CANP, I have conducted a review of our acceptance criteria for and the design modifications being made to the Mark II containment system in general and the LaSalle County Station

in particular. For the reasons set forth below, I have determined that no suspension or revocation of the construction permits for the LaSalle County Station is presently justified.

II

The containment system for the LaSalle County Station includes a Mark II type containment structure that utilizes the pressure suppression concept to mitigate the consequences of a postulated loss-of-coolant accident (LOCA), that is, a hypothetical accident which the plant is designed to withstand without causing harm to the public health and safety. During large scale testing of the Mark III containment system design in the period 1972 through 1974, new suppression pool hydrodynamic loads associated with a postulated LOCA were identified. These new loads had not been explicitly considered in the original design of the LaSalle or other Mark II containments. In response to the identification of these new loads, the Nuclear Regulatory Commission, in April 1975, requested each of the domestic utilities owning a boiling water reactor facility with the Mark II containment design to provide information which would demonstrate the adequacy of their containment designs. Commonwealth Edison Company, together with the owners of all the other nuclear power plants using the Mark II design, formed a group which developed a program consisting of both analytical and experimental tasks to support their pool dynamic loads application methods. In November, 1975, the Owners group submitted to the Commission *Revision 0 of the Dynamic Forcing Function Report* (NEDO-21062) describing the generic methodology which would be used to determine the Mark II system pool dynamic loads.

In May 1977, the Owners group divided their ongoing program into two parts: a Lead Plant Program (that includes the LaSalle, Zimmer, and Shoreham facilities) and a Long Term Program that includes the remaining Mark II plants. The purpose of the Lead Plant Program was to demonstrate that a sufficient understanding of the pool dynamic phenomena exists and to establish conservative estimates of the greatest hydrodynamic loads likely to be sustained by the Mark II system in the event of a LOCA. Commonwealth Edison and the other Mark II owners have now completed the Lead Plant Program and have established conservative estimates of the hydrodynamic loads of which the Mark II containment systems must be designed to withstand.

The second part of the Mark II Owners group program to study hydrodynamic loads, the Long Term Program (scheduled for completion in October 1980), has two basic objectives. First, it is designed to provide additional confirmation of certain loads developed and utilized in the Lead Plant Program. Secondly, it is designed to develop information, by means of tests and analyses, to support possible reductions in selected design basis loads which were used by the Lead Plants. Preliminary results from the Long Term Program indicate that the bounding load specifications established for the design of the Lead Plant containment systems are, indeed, conservative (See *Supplement 1 to NUREG-0487* to be issued in December 1979. A copy of this report will be forwarded when it is available.) These results also suggest that

many of the conservative loads required for use in the evaluation of the adequacy of the Lead Plants containment systems can be reduced at the conclusion of the Long Term Program for plants utilizing Mark II type containment.

The staff has reviewed and evaluated the information developed by the Mark II Owners group in its Lead Plant Program. The staff's evaluation and the acceptance criteria that were based on that evaluation are set forth in NUREG-0487, dated October 1978. A copy of this document is attached to this Decision. (A supplement to the above, Supplement 1 to NUREG-0487, will be issued in December of this year.) The LaSalle County Station, Units 1 and 2, is being designed to meet the Commission's acceptance criteria. Any modifications of the LaSalle facility will be reviewed by the staff and must be approved prior to issuance of the operating license.

III

Based on the foregoing, I have concluded that sufficient acceptable information now exists to establish conservative hydrodynamic loads and to evaluate the adequacy of the response of the LaSalle facility to these loads. The results of the Long Term Program confirmatory review are not required for an adequate evaluation of the Mark II design at the LaSalle facility. Consequently, CANP's request for suspension or revocation of the construction permits held by Commonwealth Edison Company for the LaSalle County Station, Units 1 and 2 is denied.

A copy of this Decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and the local public document room for the LaSalle County Station, located at Illinois Valley Community College, Rural Route 1, Oglesby, Illinois 16348. A copy of this Decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c) of the Commission's regulations, this Decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this Decision within that time.

FOR THE NUCLEAR REGULATORY
COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 4th day of December, 1979.

[Attachment has been omitted from this publication but is available in the Public Document Room, 1717 H Street, N.W., Washington, D.C.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

VIRGINIA ELECTRIC AND
POWER COMPANYDocket Nos. 50-338/339
50-280/281(North Anna Power Station,
Units 1 and 2; Surry Power
Station, Units 1 and 2)

December 20, 1979

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 requesting revocation of operating licenses for Units at the North Anna and Surry Power Station and requesting reversal of a decision denying a request for a hearing and environmental impact statement on the Surry steam generator repair program.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letter dated April 5, 1979, Mrs. June Allen, on behalf of the North Anna Environmental Coalition (Coalition), requested that the Nuclear Regulatory Commission revoke the operating licenses of the Virginia Electric and Power Company's (VEPCO) North Anna Power Station and Surry Power Station, and reverse my decision of February 1, 1979, denying the Coalition's request for a public hearing and environmental impact statement on the Surry Steam Generator Repair Program. The Commission referred Mrs. Allen's letter to the staff for treatment pursuant to 10 CFR 2.206 of the Commission's regulations.

The asserted bases for the request by the Coalition are (1) that in having just learned on March 23, 1978, that Westinghouse had discovered an error in its emergency core cooling system (ECCS) analysis, the NRC should not have licensed North Anna Unit 1 a few days later on April 1, 1978; (2) that the NRC staff should have acted more promptly on its December 5, 1978 Seabrook Board Notification concerning inadequate capacity in the refueling water storage tank and a similar potential occurrence at North Anna; and (3) condenser defects are causing serious steam generator deterioration.

Mrs. Allen's concern related to the metal-water reaction error in the Westinghouse ECCS model was discussed in detail in an expanded chronology which was forwarded to Mrs. Allen by letter dated October 31, 1979 from Secretary Chilk. This letter adequately explained that the North

Anna Plant was properly reviewed and no further discussion is considered to be necessary here.

Mrs. Allen stated that the NRC staff should have acted more promptly to notify the Boards in the case of the inadequate capacity of the refueling water storage tank (RWST) at Seabrook and the potential for a similar situation at North Anna. The Boards are notified whenever new information could reasonably be regarded as putting a new or different light upon an issue before a Board. The NRC staff is committed to a policy of notifying affected Boards in a timely manner when a safety issue related to matters before them is raised.

In the case of North Anna, only two issues remained before the Appeal Board, neither of which was related to capacity of the RWST. Nevertheless, the staff did not drop this matter. The staff evaluated the North Anna RWST and concluded that the same problem did not exist. A cursory look at the Seabrook situation and the North Anna RWST capacity as discussed in the North Anna Final Safety Analysis Report (FSAR) readily shows that the problem that developed at Seabrook does not exist at North Anna. The Seabrook RWST, at 375,000 gallons, had only a 1,000 gallon margin when, as a minimum to allow for measurement errors, transfer times and a single failure, it needed an additional margin of 62,000 to adequately provide for the demands of the injection and recirculation mode following a loss-of-coolant accident (LOCA). North Anna, on the other hand, had a much larger RWST with a capacity of 450,000 gallons. Based on a LOCA demand of 386,000 gallons as stated in the existing FSAR, it had a margin of 64,000 gallons. The staff believes that the RWST volume is adequate for injection and transfer modes of cooling following a LOCA. Thus, although Board notification was not mandatory, the NRC staff satisfied itself that the issue raised at Seabrook was not significant at North Anna.

Mrs. Allen also suggested that the Commission investigate the role of condenser defects in causing serious steam generator deterioration and to explore contradictory views regarding the role of a leaking condenser. It is not the staff's position that condenser leakage is not important. My letter to Mrs. Allen dated July 31, 1979, discusses the relationship of condenser leakage to steam generator deterioration, and concludes that condenser leakage should be minimized. The letter also states that steam generator deterioration may result from causes other than condenser leakage. The steam generator repair program is intended to eliminate or minimize steam generator deterioration from causes other than condenser leakage. However, we are stressing the need to maintain a close watch on secondary water chemistry to minimize the concentration of impurities which may result from condenser leaks.

Based on the foregoing discussion and the provisions of 10 CFR 2.206, I have determined that there exists no adequate basis for revoking the operating licenses for North Anna and Surry, nor for reversing my decision regarding holding a Show Cause hearing on the steam generator repair program and preparing an environmental impact statement. The request of the North Anna Environmental Coalition is hereby denied.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, the local public document room for Surry Power Station located at the Swem Library, College of William and Mary, Williamsburg, Virginia 23185, and the local public document rooms for North Anna Power Station located at the Alderman Library, Manuscripts Department, University of Virginia, Charlottesville, Virginia 22901 and the Board of Supervisor's Office, Louisa County Courthouse, Louisa, Virginia 23093. A copy of this decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

In accordance with 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 20th day of December, 1979

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
EXECUTIVE DIRECTOR FOR OPERATIONS

Lee V. Gossick

In the Matter of

Docket No. PRM-150-1

CHEM-NUCLEAR SYSTEMS, INC.

December 11, 1979

The Commission's Executive Director for Operations denies petition for rulemaking requesting the Commission to amend 10 CFR Part 150 by removing 10 CFR 150.20(b)(3), the reciprocity general license condition stating that any person who engages in activities in non-Agreement States under 10 CFR 150.20(a) shall not possess or use radioactive materials or engage in authorized activities for more than 180 days in any calendar year.

ATOMIC ENERGY ACT: AGREEMENTS WITH STATES

Under section 274b. of the Atomic Energy Act of 1954, as amended, the Commission is authorized to enter into an agreement with the Governor of any State providing for discontinuance of the regulatory authority of the Commission under Chapters 6, 7, and 8, and section 161 of the Act with respect to byproduct materials, source materials, and special nuclear materials (in quantities not sufficient to form a critical mass).

AGREEMENT WITH STATE: RECIPROCAL RECOGNITION OF LICENSES

The agreement entered into between the Commission and the Agreement State provides, among other things, that the Commission and the Agreement State will use their best efforts to develop rules, regulations, and procedures by which each will reciprocally recognize licenses covering agreement materials.

LICENSING: CONTROL OF LONG-TERM FIELD OPERATIONS

Long-term field operations should be controlled through specific licensing either by NRC or the Agreement States.

LICENSING: CONTROL OF SHORT-TERM OPERATIONS

It is appropriate and reasonable to give weight to Agreement State licenses by general licensing of operations which are clearly of a short term and transitory nature.

LICENSING: REGULATORY BURDEN OF SHORT-TERM OPERATIONS

The regulatory burden of processing every short-term operation of a specific licensee would be prohibitive and would not lead to any significant improvement in public health and safety.

RULEMAKING: RECIPROCAL RECOGNITION OF STATE LICENSES

The Commission first implemented the reciprocal recognition provision when it established on February 14, 1962 (27 FR 1351), new 10 CFR 150.20, "Recognition of State licenses," granting a general license to any person (holding a valid specific license from an Agreement State) to conduct the licensed activity in non-Agreement States.

RULEMAKING: 20-DAY TIME LIMIT FOR RECIPROCAL GENERAL LICENSE

One condition of the general license was that the general licensee must not, in any non-Agreement State, possess or use radioactive material or engage in activities authorized under the general license for more than 20 days in any period of 12 consecutive months.

RULEMAKING: INCREASE OF 20-DAY TIME LIMIT TO 180-DAY TIME LIMIT

Following a review of experience, the Commission proposed on December 20, 1969 (34 FR 19996), to amend 10 CFR 150.20 to increase the time from 20 days in any period to 12 consecutive months to 180 days in any calendar year.

RULEMAKING: SELECTION OF TIME LIMIT

When it adopted amended 10 CFR 150.20 (b)(3) to increase the time to 180 days in any calendar year for the conduct of activities in non-Agreement States, the Commission selected a balance point between a restrictive time limitation (20 days in 12 consecutive months) that discouraged use of the reciprocity general license and no time limitation (the effect if the petitioner's request were granted) that would have eliminated the need for multiple

specific licenses. In adopting the increased time limit, the Commission did not intend to eliminate entirely a licensee's administrative and financial burdens but rather to reduce them as much as possible consistent with protecting the public health and safety.

DENIAL OF PETITION FOR RULEMAKING

By letter dated December 9, 1977, Mr. John L. West, on behalf of Chem-Nuclear Systems, Inc., filed with the Nuclear Regulatory Commission a petition for rulemaking (PRM 150-1).

THE PETITION

Under the NRC's regulation, "Exemptions and Continued Regulatory Authority in Agreement States Under Section 274," 10 CFR Part 150, any person who holds a specific license from an Agreement State where the licensee maintains an office for directing a license and at which radiation safety records are normally maintained, is granted a general license to conduct the same activity in non-Agreement States (10 CFR 150.20(a)). Among the conditions imposed on the general license, 10 CFR 150.20(b)(3) states that any person who engages in activities in non-Agreement States under the general license shall not possess or use radioactive materials, or engage in authorized activities for more than 180 days in any calendar year.

In the letter of December 9, 1977, the petitioner requested that the Commission amend 10 CFR Part 150 by removing 10 CFR 150.20(b)(3).

BASIS FOR THE REQUEST

As the basis for the request, the petitioner stated that the 180 days per calendar year limitation creates additional paperwork and expense for Chem-Nuclear Systems and may in the future limit the performance of its services to public utilities.

The petitioner noted that if licensed activities are appropriate and in the public interest for 180 days of the year, they would remain so for the balance of the year as well, and as a matter of public policy, all of the reasons why such activities are considered proper for a substantial portion of the year tend to argue against the limit of 180 days on such activities.

REQUEST FOR COMMENTS ON PETITION

A notice of filing of petition for rulemaking was published in the Federal Register on February 8, 1978 (43 FR 5442). The comment period expired April 10, 1978. No letters of comment were received in response to the notice.

PREVIOUS ACTIONS

Under section 274b. of the Atomic Energy Act of 1954, as amended, the Commission is authorized to enter into an agreement with the Governor of any State providing for discontinuance of the regulatory authority of the Commission under Chapters 6, 7, and 8, and section 161 of the Act with respect to byproduct materials, source materials, and special nuclear materials (in quantities not sufficient to form a critical mass).

The agreement entered into provides, among other things, that the Commission and the Agreement State will use their best efforts to develop rules, regulations, and procedures by which reciprocal recognition of licenses covering agreement materials will be accorded.

The Commission first implemented the reciprocal recognition provision when it established on February 14, 1962 (27 FR 1351), new 10 CFR 150.20, "Recognition of State licenses," granting a general license to any person (holding a valid specific license from an Agreement State) to conduct the licensed activity in non-Agreement States. One condition of that general license was that the general licensee must not, in any non-Agreement State, possess or use radioactive material or engage in activities authorized under the general license for more than 20 days in any period of 12 consecutive months.

In the first 6 years of experience with the reciprocity general license, just over 100 notifications were filed by Agreement State specific licensees for conducting activities in non-Agreement States. Following a review of this experience, the Commission proposed on December 20, 1969 (34 FR 19996) to amend 10 CFR 150.20 to increase the time from 20 days in any period of 12 consecutive months to 180 days in any calendar year.

In the preamble to the proposed rule, the Commission addressed the issue of administrative and financial burdens:

The limitation of 20 days in 12 consecutive months has discouraged use of the general license by Agreement State specific licensees who are engaged in transient field operations of uncertain duration, and results in the issuance by the Commission and Agreement States of multiple specific licenses for the same activity. Thus persons conducting transient throughout the United States may obtain specific licenses covering the same activity from the AEC and each of the 21 Agreement States. Under such circumstances multiple specific licenses impose an administrative and financial burden upon licensees and the license-issuing agencies without significant improvement of the health and safety aspects of the transient operations.

The Commission, however, did not intend to eliminate entirely the administrative and financial burdens but rather to reduce them as much as possible consistent with protecting the public health and safety. Accordingly, it proposed to increase the time for engaging in activities in non-Agreement States under 10 CFR 150.20:

To facilitate use of the general license in Section 150.20 and to reduce the number of specific licenses which need to be issued by the Commission and Agreement States for the same activity, the Commission has under consideration amendments of the general license in Section 150.20 to permit Agreement State specific licensees to engage in activities in non-Agreement States up to 180 days in any calendar year.

The Commission provided additional discussion of the increase in time on May 20, 1970 (35 FR 7725), in the preamble to the final rule to amend 10 CFR 150.20:

This increase in time will encourage the use of the general license by Agreement States specific licensees who are engaged in transient field operations.

The Commission expects that the amendments of the general license in Section 150.20 will permit a greater number of Agreement State specific licensees to use the general license, reduce the need for multiple specific licenses, and reduce the number of reports required of persons proposing to engage in activities under the general license. The amendments will simplify licensing of radioactive materials without compromising health and safety.

Recently, about 130 Agreement State specific licensees per year (compared to 100 total in the first 6 years) have been conducting in non-Agreement States transient field operations such as industrial radiography, decontamination services, pickup and transportation of prepackaged radioactive wastes, well-logging, tracer studies, and similar services. Not all of the increased use of the reciprocity general license can be attributed to the increase in time to 180 days in any calendar year because the number of Agreement State specific licensees has increased significantly in the last 9 years.

In view of the Commission's statements when it adopted amended 10 CFR 150.20(b)(3) to increase the time to 180 days in any calendar year for the conduct of activities in non-Agreement States, the Commission selected a balance point between a restrictive time limitation (20 days in 12 consecutive months) that discouraged use of the reciprocity general license and no time limitation (the effect if the petitioner's request were granted) that would have eliminated the need for multiple specific licenses.

Long-term field operations of this type should be controlled through specific licensing either by NRC or the Agreement States. Conversely, it is appropriate and reasonable to give weight to Agreement State licenses by general licensing of operations which are clearly of a short term and transitory nature. The regulatory burden of processing every short-term operation to a specific license would be prohibitive, and would not lead to any significant improvement in public health and safety. The problem is to find the proper balance, that is, the proper breakpoint at which an operation ceases to be short term and begins to take on a more permanent character. Regulatory experience with the 180-day breakpoint previously adopted by the Commis-

sion would indicate that it is a reasonable breakpoint even though somewhat arbitrarily arrived at. Petitioner has not made a case to change this breakpoint nor does our re-examination of licensing experience lead to the conclusion that it should be changed.

GROUND FOR DENIAL

The Commission has given careful consideration to this petition for rulemaking (PRM 150-1) and has decided to deny the petition on the grounds that the limit of 180 days in any calendar year should not be removed from 10 CFR 150.20 because it is still appropriate to have a breakpoint between NRC's recognition of Agreement State licenses for transient field operations in non-Agreement States and issuance of NRC licenses for longer-term activities and transient operations throughout the United States.

Copies of the petition for rulemaking, the Commission's letter of denial, and the value/impact analysis prepared in connection with the denial are available for public inspection at the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C. Single copies of the value/impact analysis may be obtained from J. J. Henry, SD Task Leader, Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C.

For the Nuclear Regulatory Commission

Lee V. Gossick
Executive Director for Operations

Dated at Bethesda, Maryland
this 20th day of November, 1979.

[NOTICE PUBLISHED IN THE FEDERAL REGISTER ON
DECEMBER 11, 1979. 44 FR 71488]

CASE NAME INDEX

CAROLINA POWER AND LIGHT COMPANY

CONSTRUCTION PERMIT; SUPPLEMENTAL INITIAL DECISION ON REMANDED ISSUE

(Construction Permit); Dockets 50-400, 50-401, 50-402, 50-403; LBP-79-19, 10 NRC 37 (1979)

OPERATING LICENSE AMENDMENT; DECISION; Docket 50-261; ALAB-569, 10 NRC 557 (1979)

CONSTRUCTION PERMIT; ORDER; Dockets 50-400, 50-401, 50-402, 50-403; CLI-79-10, 10 NRC 675 (1979)

CHEM-NUCLEAR SYSTEMS, INC.

SPECIAL PROCEEDING; DENIAL OF PETITION FOR RULEMAKING; Dockets PRM-150-1; DPRM-79-7, 10 NRC 865 (1979)

CINCINNATI GAS AND ELECTRIC COMPANY, et al.

OPERATING LICENSE; MEMORANDUM AND ORDER ADMITTING NEW

CONTENTIONS; Docket 50-358OL; LBP-79-22, 10 NRC 213 (1979)

OPERATING LICENSE; MEMORANDUM AND ORDER DENYING MOTION TO DELAY DELIVERY OF FUEL TO THE SITE; Dockets 50-358OL, 70-2838; LBP-79-24, 10 NRC 226 (1979)

COMMONWEALTH EDISON COMPANY

CONSTRUCTION PERMIT; DIRECTOR'S DENIAL OF REQUEST UNDER 10 CFR 2.206;

Dockets 50-373, 50-374; DD-79-23, 10 NRC 859 (1979)

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. and POWER AUTHORITY OF THE STATE OF NEW YORK

SPECIAL PROCEEDING; MEMORANDUM; Docket 50-3, 50-247, 50-286; ALAB-561, 10 NRC 410 (1979)

CONSUMERS POWER COMPANY

OPERATING LICENSE AMENDMENT; SPECIAL PREHEARING CONFERENCE ORDER;

Docket 50-255SP; LBP-79-20, 10 NRC 108 (1979)

FLORIDA POWER AND LIGHT COMPANY

SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Docket 50-389; ALAB-553, 10 NRC 12 (1979)

OPERATING LICENSE; ORDER RULING ON THE PETITION OF MARK P. ONCAVAGE; Dockets 50-250(SP), 50-251(SP); LBP-79-21, 10 NRC 183 (1979)

ANTITRUST; ORDER; Dockets 50-335A, 50-389A; CLI-79-12, 10 NRC 767 (1979)

ANTITRUST; ORDER; Dockets 50-250A, 50-251A; CLI-79-12, 10 NRC 767 (1979)

GENERAL ELECTRIC COMPANY

SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Dockets 50-70, 70-754; LBP-79-28, 10 NRC 578 (1979)

GEORGIA POWER COMPANY

CONSTRUCTION PERMIT; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets 50-424, 50-425; DD-79-18, 10 NRC 617 (1979)

HOUSTON LIGHTING AND POWER COMPANY

SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Docket 50-466; ALAB-564, 10 NRC 451 (1979)

CONSTRUCTION PERMIT; MEMORANDUM; Docket 50-466; ALAB-565, 10 NRC 521 (1979)

HOUSTON LIGHTING AND POWER COMPANY, et al.

ANTITRUST; ORDER REGARDING MOTIONS BASED UPON DECISION OF UNITED STATES DISTRICT COURT; Dockets 50-498A, 50-499A; LBP-79-27, 10 NRC 563 (1979)

ANTITRUST; ORDER GRANTING PRODUCTION OF DRAFT TESTIMONY OF EXPERT

WITNESS; Dockets 50-498A, 50-499A; LBP-79-30, 10 NRC 594 (1979)

KANSAS GAS AND ELECTRIC COMPANY

CONSTRUCTION PERMIT; DIRECTOR'S DENIAL OF REQUEST UNDER 10 CFR 2.206;

Docket STN 50-482; DD-79-11, 10 NRC 136 (1979)

CASE NAME INDEX

CASE NAME INDEX

- LOUIS RAY URCIUOLO**
SPECIAL PROCEEDING; EXECUTIVE DIRECTOR FOR OPERATIONS DECISION UNDER 10 CFR 1.40(o); Dockets PRM-20-12; DPRM-79-5, 10 NRC 515 (1979)
- MAINE YANKEE ATOMIC POWER COMPANY**
OPERATING LICENSE; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Docket DPR-36; DD-79-15, 10 NRC 511 (1979)
- METROPOLITAN EDISON COMPANY**
SPECIAL PROCEEDING; ORDER AND NOTICE OF HEARING; Docket 50-289; CLI-79-8, 10 NRC 141 (1979)
SPECIAL PROCEEDING; FIRST SPECIAL PREHEARING CONFERENCE ORDER; Docket 50-289; LBP-79-34, 10 NRC 828 (1978)
- METROPOLITAN EDISON COMPANY, et al.**
SPECIAL PROCEEDING; DECISION; Docket 50-320; ALAB-562, 10 NRC 437 (1979)
SPECIAL PROCEEDING; MEMORANDUM; Docket 50-320; ALAB-566, 10 NRC 527 (1979)
SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Docket 50-320; ALAB-570, 10 NRC 679 (1979)
- NEW ENGLAND POWER COMPANY (NEP-1 and NEP-2)**
CONSTRUCTION PERMIT; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets STN50-568, STN50-569; DD-79-13, 10 NRC 251 (1979)
- NON DESTRUCTIVE TESTING MANAGEMENT ASSOCIATION**
SPECIAL PROCEEDING; DENIAL OF PETITION FOR RULEMAKING; Dockets PRM-7-1; DPRM-79-4, 10 NRC 253 (1979)
- NONDESTRUCTIVE TESTING MANAGEMENT ASSOCIATION**
SPECIAL PROCEEDING; DENIAL OF PETITION FOR RULEMAKING; Dockets PRM-71-7; DPRM-79-6, 10 NRC 667 (1979)
- NORTHERN INDIANA PUBLIC SERVICE COMPANY**
CONSTRUCTION PERMIT; MEMORANDUM AND ORDER; Docket 50-367; CLI-79-11, 10 NRC 733 (1979)
- NORTHERN STATES POWER COMPANY (MINNESOTA) AND NORTHERN STATES POWER COMPANY (WISCONSIN)**
SPECIAL PROCEEDING; DECISION; Docket STN 50-484; ALAB-562, 10 NRC 437 (1979)
- OFFSHORE POWER SYSTEMS**
SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Docket STN 50-437; CLI-79-9, 10 NRC 257 (1979)
- PACIFIC GAS AND ELECTRIC COMPANY**
OPERATING LICENSE; PARTIAL INITIAL DECISION; Dockets 50-275(OL), 50-323(OL); LBP-79-26, 10 NRC 453 (1979)
- PENNSYLVANIA POWER AND LIGHT COMPANY and ALLEGHENY ELECTRIC COOPERATIVE, INC.**
OPERATING LICENSE; MEMORANDUM AND ORDER; Dockets 50-387, 50-388; ALAB-563, 10 NRC 449 (1979)
OPERATING LICENSE; MEMORANDUM AND ORDER CONCERNING CLASS 9 ACCIDENT CONTENTION; Dockets 50-387, 50-388; LBP-79-29, 10 NRC 586 (1979)
SPECIAL PROCEEDING; MEMORANDUM AND ORDER ON DISCOVERY MOTIONS (II) (October 30, 1979); Dockets 50-387, 50-388; LBP-79-31, 10 NRC 597 (1979)
- PHILADELPHIA ELECTRIC COMPANY**
CONSTRUCTION PERMIT; MEMORANDUM AND ORDER REPETITION TO TERMINATE DOCKET AND TO QUASH PREAPPLICATION AND EARLY REVIEW OF SITE SUITABILITY; Dockets 50-463, 50-464; LBP-79-23, 10 NRC 220 (1979)
SPECIAL PROCEEDING; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets 50-352, 50-353; DD-79-16, 10 NRC 609 (1979)
- PHILADELPHIA ELECTRIC COMPANY, et al.**
SPECIAL PROCEEDING; DECISION; Dockets 50-277, 50-278; ALAB-562, 10 NRC 437 (1979)
SPECIAL PROCEEDING; MEMORANDUM; Dockets 50-277, 50-278; ALAB-566, 10 NRC 527 (1979)
- PORTLAND GENERAL ELECTRIC COMPANY**
SPECIAL PROCEEDING; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Docket 50-344; DD-79-14, 10 NRC 509 (1979)

CASE NAME INDEX

- PORTLAND GENERAL ELECTRIC COMPANY, et al.
SPECIAL PROCEEDING; MODIFICATION OF ORDER PERMITTING INTERIM OPERATION OF TROJAN NUCLEAR PLANT; Docket 50-344; LBP-79-32, 10 NRC 699 (1979)
- PUBLIC SERVICE COMPANY OF INDIANA, INC., WABASH VALLEY POWER ASSOCIATION
SHOW CAUSE; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets STN50-546, 50-547; DD-79-17, 10 NRC 613 (1979)
- PUBLIC SERVICE COMPANY OF INDIANA, INC., WABASH VALLEY POWER ASSOCIATION, INC.
CONSTRUCTION PERMITS; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets STN 50-546, STN 50-547; DD-79-10, 10 NRC 129 (1979)
CONSTRUCTION PERMITS; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets STN 50-546, STN 50-547; DD-79-21, 10 NRC 717 (1979)
- PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al
CONSTRUCTION PERMIT; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets 50-443, 50-444; DD-79-20, 10 NRC 703 (1979)
- PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, et al.
SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Dockets 50-443, 50-444; ALAB-557, 10 NRC 153 (1979)
SPECIAL PROCEEDING; MEMORANDUM; Dockets 50-443, 50-444; ALAB-561, 10 NRC 410 (1979)
- PUBLIC SERVICE COMPANY OF OKLAHOMA et al.
CONSTRUCTION PERMIT; DECISION; Dockets STN-50-556, STN-50-557; ALAB-573, 10 NRC 775 (1979)
- PUBLIC SERVICE ELECTRIC AND GAS COMPANY
SPECIAL PROCEEDING; DECISION; Dockets 50-354, 50-355; ALAB-562, 10 NRC 437 (1979)
SPECIAL PROCEEDING; MEMORANDUM; Dockets 50-354, 50-355; ALAB-566, 10 NRC 527 (1979)
- PUGET SOUND POWER AND LIGHT COMPANY, et al.
CONSTRUCTION PERMIT; MEMORANDUM AND ORDER; Dockets STN 50-522, STN 50-523; ALAB-552, 10 NRC 1 (1979)
CONSTRUCTION PERMIT; MEMORANDUM AND ORDER; Dockets STN 50-522, STN 50-523; ALAB-556, 10 NRC 30 (1979)
CONSTRUCTION PERMIT; MEMORANDUM AND ORDER; Dockets STN 50-522, STN 50-523; ALAB-572, 10 NRC 693 (1973)
- PUGET SOUND POWER AND LIGHT COMPANY, et al.
CONSTRUCTION PERMIT; DECISION; Dockets STN50-522, STN50-523; ALAB-559, 10 NRC 162 (1979)
- RADIATION TECHNOLOGY, INC.
CIVIL PENALTIES; DECISION; Docket 29-13613-02; ALAB-567, 10 NRC 533 (1979)
- ROCHESTER GAS AND ELECTRIC CORPORATION, et al.
SPECIAL PROCEEDING; DECISION; Docket STN 50-485; ALAB-562, 10 NRC 437 (1979)
SPECIAL PROCEEDING; MEMORANDUM; Docket STN50-485; ALAB-566, 10 NRC 527 (1979)
- SACRAMENTO MUNICIPAL UTILITY DISTRICT
SPECIAL PROCEEDING; REFERRAL OF A LICENSING BOARD RULING TO THE ATOMIC SAFETY AND LICENSING APPEAL BOARD; Docket 50-312SP; LBP-79-33, 10 NRC 821 (1979)
- TENNESSEE VALLEY AUTHORITY
CONSTRUCTION PERMIT; DECISION; Dockets STN 50-518, 50-519, 50-520, 50-521; ALAB-554, 10 NRC 15 (1979)
CONSTRUCTION PERMIT; MEMORANDUM AND ORDER; Dockets STN50-518, 50-519, 50-520, 50-521; ALAB-558, 10 NRC 158 (1979)
- TEXAS UTILITIES GENERATING COMPANY
ANTITRUST; ORDER GRANTING PRODUCTION OF DRAFT TESTIMONY OF EXPERT WITNESS; Dockets 50-445A, 50-446A; LBP-79-30, 10 NRC 594 (1979)
- TEXAS UTILITIES GENERATING COMPANY, et al.
ANTITRUST; ORDER REGARDING MOTIONS BASED UPON DECISION OF UNITED STATES DISTRICT COURT; Dockets 50-445A, 50-446A; LBP-79-27, 10 NRC 563 (1979)

CASE NAME INDEX

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY et al.
ANTITRUST; DECISION; Dockets 50-440A, 50-441A; ALAB-560, 10 NRC 265 (1979)

THE TOLEDO EDISON COMPANY AND THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
ANTITRUST; DECISION; Dockets 50-346A, 50-500A, 50-501A; ALAB-560, 10 NRC 265 (1979)

VIRGINIA ELECTRIC AND POWER COMPANY
OPERATING LICENSE; MEMORANDUM AND ORDER; Dockets 50-338OL, 50-339OL;
ALAB-555, 10 NRC 23 (1979)
SPECIAL PROCEEDING; MEMORANDUM AND ORDER; Dockets 50-338SP, 50-339SP;
ALAB-568, 10 NRC 554 (1979)
OPERATING LICENSE; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets 50-280,
50-281; DD-79-19, 10 NRC 625 (1979)
OPERATING LICENSE; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Dockets 50-
338/339, 50-280/281; DD-79-24, 10 NRC 862 (1979)

VIRGINIA ELECTRIC AND POWER COMPANY (VEPCO)
SPECIAL PROCEEDING; ORDER GRANTING VEPCO'S MOTION FOR SUMMARY
DISPOSITION; Dockets 50-338-SP, 50-339-SP; LBP-79-25, 10 NRC 234 (1979)

WASHINGTON PUBLIC POWER SYSTEM
OPERATING LICENSE; MEMORANDUM; Docket 50-397OL; ALAB-571, 10 NRC 687 (1979)

WISCONSIN ELECTRIC POWER COMPANY
SHOW CAUSE; DIRECTOR'S DECISION UNDER 10 CFR 2.206; Docket 50-266; DD-79-22,
10 NRC 728 (1979) 0

LEGAL CITATIONS INDEX

CASES

- Aberdeen & Rockfish R. Co. v. SCRAP, 422 U.S. 289, . . . (1975)
significant environmental impact, steam generator, negative declaration, 2,206 petition denied; DD-79-19, 10 NRC 631 (1979)
- Addyston Pipe and Steel Co. v. United States, 175 U.S. 211, 241 (1899)
antitrust, territorial limitations, horizontal, per se rule allocation of customers; ALAB-560, 10 NRC 314 (1979)
- Aeschliman v. United States, 547 F.2d 622 (D.C. Cir. 1976), reversed sub nom
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Alabama Power Company (Farley Units 1 and 2), ALAB-182, 7 AEC 210, 216-17 (1974)
contentions, motions to dismiss, oral argument, merits not in issue; ALAB-565, 10 NRC 525 (1979)
- Alabama Power Company (Farley Units 1 and 2), CLI-74-12, 7 AEC 203-204 (1974)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 567 (1979)
- Alabama Power Company (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210 (1974), remanded on other grounds, CLI-74-12, 7 AEC 203 (1974)
antitrust proceedings, res judicata effect of federal court; LBP-79-27, 10 NRC 566 (1979)
antitrust proceedings, res judicata effect of federal court decision, party to prior litigation; LBP-79-27, 10 NRC 573 (1979)
- Alameda Mall v. Houston Power and Light Company, Trade Reg. Rep. (CCH) par. 61, 485 (S.D. Tex. 1977)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 285 (1979)
- Allied-General Nuclear Services (Barnwell Fuel Receiving and Storage Station), ALAB-328 (3 NRC 420, 422-23 (1976))
intervention, standing of organization, interest of one member; LBP-79-20, 10 NRC 113 (1979)
intervention, standing of organization, interest of one member, authority to represent; LBP-79-20, 10 NRC 113 (1979)
- intervention, standing, interest, particularity of petition; LBP-79-20, 10 NRC 116 (1979)
- American Tobacco Co. v. United States, 147 F.2d 93, 107 (6th Cir. 1944), aff'd. 328 U.S. 781 (1946)
antitrust, monopolization, de minimus argument, scheme; ALAB-560, 10 NRC 377 (1979)
- American Federation of Tobacco Growers v. Neal, 183 F.2d 869, 872 (4th Cir. 1950)
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 329 (1979)
- American Motor Inns, Inc. v. Holiday Inns, Inc. 521 F.2d 1230, 1252-54 (3rd Cir. 1975)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 316 (1979)
- Associated Press v. United States, 326 U.S. 1, 17 (1945)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 340 (1979)
- Atlantic City Electric Company (Hope Creek Generating Station, Units 1 and 2), ALAB-429, (6 NRC 229 (1977))
testimony, conflicting, licensing board choices, aircraft crashes; LBP-79-26, 10 NRC 462 (1979)
- Atlantic Refining Co. v. FTC, 381 U.S. 357, 369-70 (1965)
antitrust proceedings, res judicata effect of federal court decision, scope of 105 review; LBP-79-27, 10 NRC 571 (1979)
- Babcock & Wilcox, CLI-77-18, (5 NRC 1332 (1977))
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 445 (1979)
- Bates v. State Bar, 433 U.S. 350, 362 (1977)
antitrust, defense state anti-pirating law; ALAB-560, 10 NRC 308 (1979)
- Beall Const. Co. v. OSHRC, 507 F.2d 1041, 1046 (8th Cir. 1974)
civil penalties, absolute uniformity not required; ALAB-567, 10 NRC 541 (1979)

LEGAL CITATIONS INDEX

CASES

- Bird v. United States**, 187 U.S. 188, 124 (1902)
antitrust violations, license conditions, scope of NRC authority, statutory construction; ALAB-560, 10 NRC 292 (1979)
- Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation**, 402 U.S. 313, 329 (1971)
antitrust proceedings, res judicata effect of federal court decision identity of issues; LBP-79-27, 10 NRC 572 (1979)
antitrust, territorial agreements; ALAB-560, 10 NRC 372 (1979)
- Bluefield Water Works and Improvement Co. v. Public Service Commission**, 262 U.S. 679 (1923)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 713 (1979)
- Boston Edison Company (Pilgrim Nuclear Generating Station, Unit 2)**, LBP-75-30, (1 NRC 579, 583 (1975))
evasive, objections to discovery; LBP-79-31, 10 NRC 602 (1979)
- Boston Edison Company (Pilgrim Nuclear Power Station, Unit 1)**, ALAB-231, 8 AEC 633, 634 (1974)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 688 (1979)
- Boston Edison Company (Pilgrim Station, Unit 2)**, ALAB-479, (7 NRC 774, 779 (1978))
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Boston Edison Company (Pilgrim Unit 2)**, ALAB-269, (1 NRC 411, 413 (1975))
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 452 (1979)
- Boston Edison Company (Pilgrim Unit 2)**, ALAB-479, (7 NRC 774 (1978))
FES, adequacy to alert Indian tribe, fishing rights, intervention denied; ALAB-559, 10 NRC 179 (1979)
- Boston Edison Company, (Pilgrim Station, Unit 2)**, ALAB-479, (7 NRC 774 (1978))
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- Breckinridge v. Rumsfeld**, 537 F.2d 864 (6th Cir. 1976), cert. denied 429 U.S. 1061 (1977)
EIS, economic cost, steam generator, 2.206 petition denied; DD-79-19, 10 NRC 636 (1979)
- Brennan v. Occupational Safety and Health Review Com'n**, 487 F.2d 438, 441-42 (8th Cir. 1973)
civil penalties, evidentiary hearing, fact finder; ALAB-567, 10 NRC 537 (1979)
- Brewer-Eliot Oil and Gas Co. v. United States**, 260 U.S. 77 (1922)
Indian tribe immunity from suit, joinder as party; ALAB-573, 10 NRC 780 (1979)
- Brown Shoe Co. v. United States**, 370 U.S. 294, 319-21 (1962) (Clayton Act)
antitrust laws, encouragement of competition; ALAB-560, 10 NRC 278 (1979)
- Butz v. Glover Livestock Commission Co.**, 411 U.S. 182, 186-89, (1973)
civil penalties, absolute uniformity not required; ALAB-567, 10 NRC 541 (1979)
- Calvert Cliffs' Coordinating Committee v. AEC**, 449 F.2d 1109 (1971)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 689 (1979)
- Calvert Cliffs' Coordinating Committee v. AEC**, 449 F.2d 1109 (D.C. Cir. 1971)
NEPA, early AEC attempts to implement; ALAB-569, 10 NRC 557 (1979)
- Cantor v. Detroit Edison Company**, 428 U.S. 579, 595-96 (1976)
antitrust, no immunity from State laws; ALAB-560, 10 NRC 302 (1979)
- Cantor v. Detroit Edison Company**, 428 U.S. 579, 596 n. 35 (1976)
antitrust laws applicable to electric utilities; ALAB-560, 10 NRC 283 (1979)
- Carolina Environmental Study Group v. AEC**, 510 F.2d 796 (D.C. Cir. 1975)
Class 9 accident, NEPA review; LBP-79-29, 10 NRC 589 (1979)
- Carolina Environmental Study Group v. AEC**, 510 F.2d 796, 798-800 (D.C. Cir. 1975)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
- Carolina Environmental Study Group v. U.S.**, 510 F.2d 796 (D.C. Cir. 1975)
EIA, adequacy, 2.206 petition denied; DD-79-19, 10 NRC 646 (1979)
- Carolina Environmental Study Group v. United States**, 510 F.2d 796 (D.C. Cir. 1976)
Class 9 accident, TMI restart proceeding; LBP-79-34, 10 NRC 833 (1979)
Class 9 accident, interim guidance of proposed reg. offshore plant; CLI-79-9, 10 NRC 259 (1979)
- Carolina Environmental Study Group v. United States**, 510 F.2d 796, 798 (D.C. Cir. 1975)
Class 9 accident, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 721 (1979)
- Carolina Environmental Study Group v. United States**, 510 F.2d 796, 801 (D.C. Cir. 1975)
NEPA, international implications, foreign mining, radon release, remote possibilities; ALAB-562, 10 NRC 446 (1979)
- Carolina Power and Light Company (H.B. Robinson, Unit No. 2)**, ALAB-569, (10 NRC 557, 559 (October 31, 1979))
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 689 (1979)

LEGAL CITATIONS INDEX

CASES

- Carolina Power and Light Company (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), CLI79-5, (9 NRC 608, 610 (May 2, 1979))
motion to reopen denied; CLI-79-10, 10 NRC 675 (1979)
- Carolina Power and Light Company (Shearon Harris Plant), ALAB-490, (8 NRC 234, 241 (1978))
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 806 (1979)
- Carolina Power and Light Company (Shearon Harris Plant), CLI-79-5, (9 NRC 607, 609-10 (1979))
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 806 (1979)
- Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1 (1831)
intervention, tardness, Indian tribe, federal government trust; ALAB-552, 10 NRC 8 (1979)
- Chicago and W.I.R. Company v. M/S Buko Maru, 505 F.2d 579 (7th Cir. 1974)
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 806 (1979)
- Chicopee Mfg. Co. v. Public Serv. Co., 98 N.H. 5, 93 A.2d 820 (1953)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 713 (1979)
- Chocktaw Nation v. Oklahoma, 397 U.S. 620 (1970)
Indian tribe immunity from suit, joinder as party; ALAB-573, 10 NRC 780 (1979)
- Cities of Statesville v. AEC, 441 F.2d 962 (D.C. Cir. 1969)
antitrust, research and development plants, section 104(b) licenses; ALAB-560, 10 NRC 271 (1979)
- Citizens for Safe Power v. NRC, 524 F.2d 1291, 1294 fn. 5 (D.C. Cir. 1975)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- Citizens for Safe Power, Inc. v. NRC, 524 F.2d 1291, 1294, n.5 (D.C. Cir. 1975)
FES modification by adjudication, 2.206 petition denied; DD-79-18, 10 NRC 619 (1979)
- Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402 (1971)
significant environmental impact, steam generator, negative declaration, 2.206 petition denied; DD-79-19, 10 NRC 630 (1979)
- City of Cleveland v. Cleveland Electric Illuminating Company, Civil Action No. C75-560, U.S. District Court, N.D. Ohio
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 364 (1979)
- City of Columbus v. County of Delaware, 132 N.E.2d 747, 750 (1956)
antitrust, monopolist, practices, negotiations with municipality; ALAB-560, 10 NRC 380 (1979)
- City of Groton v. Connecticut Light and Power Company, 456 F. Supp. 360, 367 (D. Conn. 1978)
antitrust, price discrimination, FPC regulations; ALAB-560, 10 NRC 383 (1979)
- City of Mishawaka v. American Electric Power Co., 465 F. Supp. 1320 (N.D. Ind. 1979)
antitrust, price discrimination, FPC regulations; ALAB-560, 10 NRC 383 (1979)
- City of Mishawaka v. Indiana Michigan Electric Company, 560 F.2d 1314, 1321 (7th Cir. 1977), certiorari denied, 436 U.S. 922 (1978)
antitrust laws applicable to electric utilities; ALAB-560, 10 NRC 283 (1979)
- City of Mishawaka v. Indiana and Michigan Electric Company 560 F.2d 1314 (7th Cir. 1977), cert denied, 436 U.S. 922 (1978)
antitrust, price discrimination, FPC regulations; ALAB-560, 10 NRC 382 (1979)
- City of Toledo v. Jenkins, 54 N.E.2d 656, 659, 663-64 (Ohio 1944)
antitrust, monopolist, practices, negotiations with municipality; ALAB-560, 10 NRC 380 (1979)
- Cleveland Elec. Illuminating Company (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, (6 NRC 741 (1977))
petition, 2.206, adequacy, nexus; DD-79-21, 10 NRC 719 (1979)
- Cleveland Electric Illuminating Company (Perry Nuclear Power Plant, Units 1 & 2), ALAB-443, (6 NRC 741, 750-51 (1977))
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 622 (1979)
contentions, dismissal, required showing; LBP-79-31, 10 NRC 603 (1979)
- Cleveland Electric Illuminating Company (Perry Plant, Units 1 and 2), ALAB-443, (6 NRC 741, 748 (1977))
water supply, permit, LWA; ALAB-573, 10 NRC 801 (1979)
- Clinton Watch Co. v. FTC, 291 F.2d 838, 841 (7th Cir. 1961), cert denied, 368 U.S. 952 (1962)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- Colonnade Catering Corp. v. United States, 397 U.S. 72 (1979)
search and seizure, warrant, regulated industries, consent; ALAB-567, 10 NRC 539 (1979)

LEGAL CITATIONS INDEX

CASES

- Commissioner v. Sunnen, 33 U.S. 591, 597 (1948)
antitrust proceedings, res judicata effect of federal court; LBP-79-27, 10 NRC 565 (1979)
- Commonwealth Edison Company (La Salle, Units 1 and 2), ALAB-153, 6 AEC 821 (1973)
reopening license proceeding, previously decided issues, 2.206 petition denied; DD-79-10, 10 NRC 131 (1979)
- Commonwealth Edison Company (LaSalle County Nuclear Power Station, Units 1 and 2), ALAB-102, 6 AEC 68, 71, reversed on other grounds, CLI-73-8, 6 AEC 169 (1973)
disqualification, appearance of prejudice; ALAB-556, 10 NRC 32 (1979)
- Commonwealth Edison Company (LaSalle County Nuclear Station, Units 1 & 2), ALAB-153, 6 AEC 821, 824 (1973)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 622 (1979)
- Commonwealth Edison Company (Zion Station, Units 1 and 2), ALAB-226, 8 AEC 381, 407-08 (1974)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
disqualification, untimeliness, waiver; ALAB-556, 10 NRC 32 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-101, 6 AEC 60, 63 (1973)
disqualification, untimeliness, waiver; ALAB-556, 10 NRC 32 (1979)
- Consolidated Edison Company (Indian Point Units 1-3), CLI-75-8, (2 NRC 173, 177 (1975))
petition, 2.206, adequacy; DD-79-21, 10 NRC 719 (1979)
radon, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 724 (1979)
reopening license proceeding, previously decided issues, 2.206 petition denied; DD-79-10, 10 NRC 131 (1979)
safety hearing, reopening, 2.206 petition denied; DD-79-17, 10 NRC 615 (1979)
- Consolidated Edison Company (Indian Point, Units 1-3), CLI-75-8, (2 NRC 173, 177 (1975))
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 622 (1979)
- Consolidated Edison Company of New York (Indian Point Station, Unit No. 2), ALAB-197, 7 AEC 826, 830.
facility security, TMI restart proceeding, civil disruption; LBP-79-34, 10 NRC 840 (1979)
- Consolidated Edison Company of New York (Indian Point Units 1, 2 and 3), ALAB-436, (6 NRC 547 (1977)); and the dissenting and supplemental majority opinions in both cases, ALAB-561, (10 NRC 410 (September 6, 1979))
seismological issues, directed certification denied; ALAB-572, 10 NRC 696 (1979)
- Consolidated Edison Company of New York, Inc. (Indian Point Station Units 1, 2, and 3), ALAB-357, (4 NRC 542 (1976))
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10 NRC 229 (1979)
- Consolidated Edison Company of New York, Inc. (Indian Point Station, Unit No. 2), ALAB-399, (5 NRC 1156 (1977))
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 568 (1979)
- Consumer Product Safety Commission v. Anaconda Co., F.2d (D.C. Cir., Jan. 31, 1979)
antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 573 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-458, (7 NRC 155, 163 (1978))
need for power, alternatives, relevance of cost; ALAB-573, 10 NRC 805 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 346-48 (1973)
Class 9 accident, NEPA review; LBP-79-29, 10 NRC 587 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-270, (1 NRC 473, 475 (1975))
FES, circulation, evidence, LWA, appeal, recirculate, inadequacy of brief; ALAB-573, 10 NRC 786 (1979)
summary, disposition, prevailing party may not appeal; ALAB-573, 10 NRC 789 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-282, (2 NRC 9, 10 fn. 1 (1975))
summary, disposition, prevailing party may not appeal; ALAB-573, 10 NRC 789 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-382, (5 NRC 603 (1977))
intervenor's request for financial aid denied; LBP-79-20, 10 NRC 125 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-452, (6 NRC 892, 908-912 (1977))
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 570 (1979)
- antitrust, violations, remedial license conditions; ALAB-560, 10 NRC 301 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-458 (7 NRC 155, 168 (1978))
EIS, economic cost, steam generator, 2.206 petition denied; DD-79-19, 10 NRC 637 (1979)

LEGAL CITATIONS INDEX

CASES

- Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-458, (7 NRC 155, 161-63 (1978))
motion to delay fuel shipment, economic costs of storage, rate-payers; LBP-79-24, 10 NRC 230 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), CLI-74-5, 7 AEC 19, 24 (1974), reversed sub nom.
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Consumers Power Company (Midland Plant, Units 1 and 2), LBP-75-39, (2 NRC 29 (1975)), reversed ALAB-452, (6 NRC 892 (1977)) ("Midland")
antitrust proceeding, remedial license conditions; ALAB-560, 10 NRC 271 (1979)
antitrust, territorial agreements; ALAB-560, 10 NRC 370 (1979)
- Consumers Power Company (Midland Plants, Units 1 and 2), ALAB-344 (4 NRC 207 (1976))
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 450 (1979)
- Consumers Power Company (Midland Units 1 and 2), ALAB-283, (2 NRC 11, 16-18 (1975))
seismic criteria, design, burden of proof; ALAB-561, 10 NRC 412 (1979)
- Consumers Power Company (Midland Units 1 and 2), ALAB-438, (6 NRC 638 (1977))
discovery, directed certification denied; ALAB-572, 10 NRC 676 (1979)
- Consumers Power Company (Midland Units 1 and 2), ALAB-458, (7 NRC 155, 175 fn. 80 (1978))
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 445 (1979)
- Consumers Power Company (Midland Units 1 and 2), ALAB-468, (7 NRC 465 (1978))
interlocutory review granted, list of cases; ALAB-572, 10 NRC 695 (1979)
- Continental T.V., Inc. v. GTE Sylvania, 433 U.S. 36 (1977)
antitrust, restraints on resale of electricity; ALAB-560, 10 NRC 312, 317 (1979)
- County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1375 (2nd Cir. 1977)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Cromwell v. County of Sac., 94 U.S. 351, 352-353, (1876)
antitrust proceedings, res judicata effect of federal court; LBP-79-27, 10 NRC 565 (1979)
- Culpeper League v. United States, 574 F.2d 633, 634 (D.C. Cir. 1978)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Dahl, Inc., v. Roy Cooper Co., 448 F.2d 17, 19 (9th Cir 1971)
antitrust, power pool, refusal to deal, group boycott, business justification; ALAB-560, 10 NRC 348 (1979)
- De Filippo v. Ford Motor Co., 516 F.2d 1313, 1318 (3rd Cir.) cert denied, 423 U.S. 912 (1975)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- DeFilippo v. Ford Motor Co., 516 F.2d 1313, 1320-21 (3rd Cir.) cert. denied, 423 U.S. 912 (1975)
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 329 (1979)
- Diener's Inc. v. FTC, 494 F.2d 1132, 1133 (D.C. Cir. 1974)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- Doherty, Clifford, Steers & Shenefield, Inc. v. FTC, 392 F.2d 921, 927 (6th Cir. 1968)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- Duke Power (Catawba Nuclear Station, Units 1 and 2), LBP-73-28, 6 AEC 666 (1973)
intervention, Congressmen's participation; LBP-79-28, 11 NRC 583 (1980)
- Duke Power Company (Catawba Nuclear Station, Units 1 and 2), ALAB-355, (4 NRC 397, 415-16 (1976))
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
antitrust, monopoly, refusal to wheel power, witness, credibility; ALAB-560, 10 NRC 334 (1979)
- Duke Power Company (Catawba Station, Units 1 and 2), ALAB-355, (4 NRC 397, 417, affirmed, CLI-76-28, (4 NRC 618 (1976)))
Class 9 accident, LWA, NEPA review; ALAB-573, 10 NRC 791 (1979)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 787 (1979)
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 805 (1979)
- Duke Power Company (Cherokee Nuclear Station, Units 1, 2 and 3), ALAB-440, (6 NRC 642, 644 (1977))
intervention, tardiness, good cause, preoccupation with other concerns, Indian tribe; ALAB-552, 10 NRC 6 (1979)
- Duke Power Company (Cherokee Nuclear Station, Units 1, 2, and 3), ALAB-440, (6 NRC 642, 644 (1977))
intervention, extreme tardiness, threat to adjudicatory process, Indian tribe; ALAB-559, 10 NRC 173 (1979)

LEGAL CITATIONS INDEX

CASES

- Duke Power Company (Cherokee Units 1, 2 and 3), ALAB-440, (6 NRC 642, 644 (1977))
time, extension, written testimony, NRC staff; ALAB-553, 10 NRC 13 (1979)
- Duke Power Company (Oconee Nuclear Station, Units 1, 2, and 3), DD-79-6 661 (May 24, 1979)
reopening license proceeding, previously decided issues, 2.206 petition denied; DD-79-10, 10 NRC 131 (1979)
- Duke Power Company (Oconee-McGuire), ALAB-528, (9 NRC 146, 150 (1979))
limited appearance statement, inadequacy to protect interest of tardy intervenor; LBP-79-22, 10 NRC 215 (1979)
- Duke Power Company (Oconee-McGuire), ALAB-528, (9 NRC 146, 151-52 (1979))
intervention, standing of organization, interest of one member, authority to represent; LBP-79-20, 10 NRC 113 (1979)
- Duke Power Company (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-431, (6 NRC 460, 462 (1977))
intervention, tardiness, good cause, Indian tribe; ALAB-552, 10 NRC 5 (1979)
- Duke Power Company (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-433, (6 NRC 469, 470 (1977))
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 449 (1979)
- Duke Power Company, (Cherokee Units 1, 2, and 3), ALAB-440, (6 NRC 642, 644 (1977))
intervention, extreme tardiness, importance of Indian's fishing rights, dissenting opinion; ALAB-559, 10 NRC 178 (1979)
- Duplan Corp. v. Deering Miliken, Inc. 444 F. Supp. 648, 684-85 (D.S.C. 1977)
antitrust, monopolization, de minimus argument; ALAB-560, 10 NRC 377 (1979)
- Duquesne Light Company (Beaver Valley Power Station, Unit 2), ALAB-208, 7 AEC 959, (1974)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 403 (1979)
- Duquesne Light Company (Beaver Valley Power Station, Unit 2), CLI-74-24, 7 AEC 953, 954 (1974)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 404 (1979)
- Duquesne Light Company (Beaver Valley Unit 1), ALAB-109, 6 AEC 243, 244-45 (1973)
contentions, motions to dismiss, oral argument, merits not in issue; ALAB-565, 10 NRC 525 (1979)
- Duquesne Light Company (Beaver Valley, Unit 2), LBP-74-13, 7 AEC 282, reconsideration denied, LBP-74-25, 7 AEC 705, affirmed, ALAB-208, 7 AEC 959 affirmed, CLI-74-24, 7 AEC 953 (1974)
antitrust hearing not required in related construction permit; ALAB-560, 10 NRC 276 (1979)
- Duquesne Light Company, (Beaver Valley Staiton, Unit 1), ALAB-310, (3 NRC 133, 34 (1976))
Class 9 accident, LWA, NEPA review; ALAB-573, 10 NRC 791 (1979)
- E.A. McQuade Tours, Inc., v. Consolidated Air Tour Manual Committee, 467 F.2d 178, 187 (5th Cir. 1972), cert denied, 409 U.S. 1109 (1973)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- EDF v. Corps of Engineers, 492 F.2d 1123, 1129 (5th Cir. 1974)
NEPA, alternatives, 2.206 petition denied; DD-79-19, 10 NRC 648 (1979)
- Eastern Foundation Co. v. Creswell, 475 F.2d 351 (D.C. Cir. 1973)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
- antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 364 (1979)
- Eastern Railroad President Conference v. Noerr Motor Freight, Inc., 365 U.S. 127 (1961)
antitrust defense, state anti-pirating law, lobbying; ALAB-560, 10 NRC 308 (1979)
- Eastern Scientific Co. v. Wild Heerbrugg Instruments, Inc., 52 F.2d 883 (1st Cir.), cert denied, 58 L.Ed. 2d 128 (1978)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 317 (1979)
- Eastern States Petroleum Corp. v. Prettyman, 361 U.S. 805 (1959)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 692 (1979)
- Eastern States Petroleum Corp. v. Rogers, 265 F.2d 593 (D.C. Cir.)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 692 (1979)
- Eastman Kodak Co. v. Southern Photo Materials Co., 273 US 359, 375, 71 L Ed 684, 47 S Ct 400
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 328 (1979)
- Ecology Action v. AEC, 492 F.2d 998 (2d Cir. 1974)
Class 9 accident, NEPA review; LBP-79-29, 10 NRC 589 (1979)
- Ecology Action v. AEC, 492 F.2d 998 (2d Cir. 1974)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
- Ecology Action v. AEC, 492 F.2d 998, 1001-02 (2nd Cir. 1974)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)

LEGAL CITATIONS INDEX

CASES

- Ecology Action v. AEC, 492 F.2d 998, 1001-2 (2d Cir. 1974)
FES modification by adjudication, 2.206 petition denied; DD-79-18, 10 NRC 619 (1979)
- Edlow International Company, CLI-76-6, (3 NRC 563 (1976))
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 445 (1979)
- Edlow International Company, CLI-76-6, (3 NRC 563, 569-70 (1976))
intervention, standing, interest affected by proceeding; LBP-79-20, 10 NRC 113 (1979)
- Environmental Defense Fund v. EPA 548 F.2d 998, 1004-05, 1012-18 (D.C. Cir. 1976), certiorari denied sub nom
seismic criteria, design, burden of proof; ALAB-561, 10 NRC 412 (1979)
- Environmental Defense Fund v. Tennessee Valley Authority, 468 F.2d 164, 1184 (6th Cir. 1972)
intervention, standing, interest, failure to prepare required EIS; LBP-79-20, 10 NRC 116 (1979)
- Exxon Nuclear Company (Nuclear Fuel Recovery and Recycling Center), ALAB-425 (6 NRC 199 (1977))
interlocutory review granted, list of cases; ALAB-572, 10 NRC 695 (1979)
- FPC v. Hope Natural Gas Company, 320 U.S. 591 (1944)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 713 (1979)
- FTC v. Brown Shoe Co., 384 U.S. 316, 321 (1966)
antitrust proceedings, res judicata effect of federal court decision, scope of 105 review; LBP-79-27, 10 NRC 571 (1979)
- FTC v. Motion Picture Adv. Co., 344 U.S. 392, 394-95 (1953)
antitrust proceedings, res judicata effect of federal court decision, scope of 105 review; LBP-79-27, 10 NRC 571 (1979)
- FTC v. National Lead Co., 352 U.S. 419, 430 (1957)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- FTC v. Sperry & Hutchinson Co.; 405 U.S. 233, 249 (1972)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 574 (1979)
- FTC v. Sperry & Hutchinson Co., 405, U.S. 233, 239 (1972)
antitrust proceedings, res judicata effect of federal court decision, scope of 105 review; LBP-79-27, 10 NRC 571 (1979)
- FTC v. Texaco, Inc., 392 U.S. 223 (1968)
antitrust proceedings, res judicata effect of federal court decision, scope of 105 review; LBP-79-27, 10 NRC 571 (1979)
- Fashion Originators' Guild v. FTC, 312 U.S. 457, 467-68 (1941)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- Fedders Corp. v. FTC, 529 F.2d 1398, 1403 (2d Cir.), cert denied, 429 U.S. 818 (1976)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- Federal Crop Insurance Corp. v. Merrill, 332 US 380-388, 1947
intervention, timeliness, notice, Federal Register as legal notice; LBP-79-21, 10 NRC 192 (1979)
- Fibreboard Paper Products Corp. v. East Bay Union of Machinists, Local 1304, 344 F.2d 300, 306-07 (9th Cir.), cert. denied, 382 U.S. 826 (1965)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 364 (1979)
- First National Bank of Chicago v. Richardson, 484 F.2d 1369, 1373 (7th Cir. 1973)
significant environmental impact, steam generator, negative declaration, 2.206 petition denied; DD-79-19, 10 NRC 630 (1979)
- First National Bank v. Cities Service Co., 391 U.S. 253, 277 (1968)
antitrust, power pool, refusal to deal, group boycott, business justification; ALAB-560, 10 NRC 348 (1979)
- Florida Power & Light Co. (St. Lucie Plant, Unit No. 2), CLI-78-12, (7 NRC 939, 946 (1978))
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 574 (1979)
- Florida Power Corp. v. FPC, 425 F.2d 1196 (5th Cir. 1970), rev'd and remanded for entry of a judgment enforcing the Commission's order sub nom
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 357 (1979)
- Florida Power and Light Co. (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-420, (6 NRC 8, 22 (1977)), affirmed, CLI-78-12, (7 NRC 939 (1978))
intervention, tardiness, good cause, Indian tribe; ALAB-552, 10 NRC 5 (1979)
- Florida Power and Light Co. (St. Lucie Unit 2), ALAB-335, (3 NRC 830, 834-41 (1976)); ALAB-435, (6 NRC 541, 543-44 (1977))
FES, adequacy to alert Indian tribe, fishing rights, intervention denied; ALAB-559, 10 NRC 179 (1979)

LEGAL CITATIONS INDEX

CASES

- Florida Power and Light Co. (St. Lucie Unit 2), LBP-77-23, (5 NRC 789, affirmed, ALAB-420, (6 NRC 8 (1977)), affirmed, CLI-78-12, (7 NRC 939 (1978))
intervention, extreme tardiness, 3 1/2 year delay by Indian tribe; ALAB-559, 10 NRC 175 (1979)
- Florida Power and Light Company (St. Lucie Nuclear Power Project, Unit No. 2, (5 NRC 1038)
occupational exposure, intervention, tardiness, developing sound record; LBP-79-21, 10 NRC 207 (1979)
- Florida Power and Light Company (St. Lucie Plant, Unit 2), ALAB-280, (2 NRC 3, 4 fn. 2 (1975))
appeal, waiver, search and seizure, inspection; ALAB-567, 10 NRC 538 (1979)
- Florida Power and Light Company (St. Lucie Unit 2), ALAB-537, (9 NRC 387, 388 (April 5, 1979))
seismic criteria, design, "safe", uncertainty of risk; ALAB-561, 10 NRC 422 (1979)
- Florida Power and Light Company, (St. Lucie Plant, Unit No. 2), CLI-78-12, (7 NRC 939, 949 (1978))
antitrust proceedings, res judicata effect of federal court decision, party to prior litigation; LBP-79-27, 10 NRC 572 (1979)
- Florida Power and Light Company, (St. Lucie Plants, Units 1 and 2 and Turkey Point, Units 3 and 4), LBP-77-23, (5 NRC 789, 800, April 5, 1977))
intervention, tardiness, extent of representation of petitioner's interest where no hearing without intervention; LBP-79-21, 10 NRC 195 (1979)
- Ford Motor Co. v. United States, 405 U.S. 562, 573 (1972)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- Fort Pierce Utilities Authority v. United States, F.2d, , Nuclear Reg. Rep. (CCH) 20,110, pp. 16,629, 16,632-33 (D.C. Cir. 1979), petition for certiorari filed, 48 U.S.L.W. 3049 (No. 78-1849)
antitrust, violations, reported to Attorney General; ALAB-560, 10 NRC 271 (1979)
- Gainesville Utilities Department v. Florida Power and Light Co., 573 F.2d 292 (5th Cir.) cert denied, 58 L.Ed.2d 424 (1978)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 317 (1979)
- Gainesville Utilities Department v. Florida Power and Light Company, 573 F.2d 292 (1978)
implications on NRC antitrust responsibilities, 105a proceeding; CLI-79-12, 10 NRC 768 (1979)
- Gainesville Utilities Dept. v. Florida Power and Light Company, 573 F.2d 292 (5th Cir.), cert denied, 58 L.Ed.2d 424 (1978)
antitrust, territorial agreements, per se rule; ALAB-560, 10 NRC 375 (1979)
- Gainesville Utilities v. Florida Power Corp., 40 FPC 1227, 1237-38 (1968), rev'd sub nom
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 357 (1979)
- Gainesville Utilities v. Florida Power Corp., 402 U.S. 515 (1971)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 358 (1979)
- Gainesville v. Florida Power and Light Company, 57 F.2d 292, at 298 (1978)
implications on NRC antitrust responsibilities, 105a proceeding; CLI-79-12, 10 NRC 772 (1979)
- Gamco, Inc. v. Providence Fruit & Produce Bldg., 194 F.2d 484, 487 (1st Cir.) cert. denied, 344 U.S. 817 (1952)
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 328 (1979)
- Georgia Power Company (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, (9 NRC 582 (April 13, 1979))
reopening license proceeding, previously decided issues, 2.206 petition denied; DD-79-10, 10 NRC 131 (1979)
- Georgia Power Company (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, (9 NRC 582 (April 13, 1979))
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 621 (1979)
petition, 2.206, adequacy, nexus; DD-79-21, 10 NRC 719 (1979)
safety hearings, reopening, 2.206 petition denied; DD-79-17, 10 NRC 615 (1979)
- Georgia Power Company (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), LBP-77-2, (5 NRC 261, 264-265 (1977))
supplemental initial decision in instant case, 2.206 petition denied; DD-79-18, 10 NRC 620 (1979)
- Georgia Power Company (Alvin W. Vogtle Nuclear Plant, Units 1-4), LBP-74-39, 7 AEC 895, 897 (1974)
initial decision in instant case, 2.206 petition denied; DD-79-18, 10 NRC 618 (1979)
- Giant Food, Inc. v. FTC, 322 F.2d 977, 987 (D.C. Cir. 1963), cert. denied, 376 U.S. 967 (1964)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- Gilligan, Will & Co. v. SEC 267 F.2d 461, 468 (2nd Cir. 1959)
disqualification, untimeliness, waiver; ALAB-556, 10 NRC 32 (1979)
- Goldfarb v. Virginia State Bar, 421 U.S. 773, 791 (1975)
antitrust, anticompetitive conduct prompted by state action; ALAB-560, 10 NRC 303 (1979)

LEGAL CITATIONS INDEX

CASES

- Goldfarb v. Virginia State Bar; 421 U.S. 773, 788-91 (1975)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 285 (1979)
- Grannis v. Ordean, 234 U.S. 385, 394 (1914)
contentions, motions to dismiss, oral argument; ALAB-565, 10 NRC 524 (1979)
- Greater Boston Television Corp. v. FCC, 444 F.2d 841 (D.C. Cir.), certiorari denied, 403 U.S. 923 (1971)
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 805 (1979)
- Greene County Planning Board v. FPC, 559 F.2d 1227, 1233 (2nd Cir. 1976), cert. denied. 434 U.S. 1086 (1978)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 621 (1979)
- Gulf Oil Corp. v. FPC, 563 F.2d 588, 602 (3d Cir. 1977)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 567 (1979)
- Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 224 (1974)
intervention, standing of organization, interest of one member, geographic proximity; LBP-79-20, 10 NRC 115 (1979)
- Haize v. Hanover Ins. Co. 536 F.2d 576 (3rd Cir. 1976)
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 364 (1979)
- Haize v. Hanover Ins. Co., 536 F.2d 576 (3rd Cir. 1976)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
- Haize v. Hanover Ins. Co., 536 F.2d 576, 579 (3d Cir. 1976);
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 567 (1979)
- Hamlin Testing Lab., Inc. v. AEC, 35 F.2d 632 (6th Cir. 1966)
appeal, Staff, initial decision, civil penalties; ALAB-567, 10 NRC 548 (1979)
- Hamlin Testing Laboratories, Inc. (Byproduct Material License No. 21-6564-1), 2 AEC 423 (1964), affirmed sub nom
appeal, Staff, initial decision, civil penalties; ALAB-567, 10 NRC 548 (1979)
- Hanly v. Kleindienst, 471 F.2d 823, 830-31 (2d Cir. 1972), cert denied 412 U.S. 908
significant environmental impact, steam generator, negative declaration, 2.206 petition denied; DD-79-19, 10 NRC 630 (1979)
- Hansberry v. Lee, 311 U.S. 32, 40 (1940)
antitrust proceedings, res judicata effect of federal court decision, party to prior litigation; LBP-79-27, 10 NRC 572 (1979)
- Hill v. TVA, 549 F.2d 1064 (6th Cir. 1977)
Endangered Species Act, summary disposition as improper procedure after evidentiary hearing; ALAB-554, 10 NRC 19 (1979)
- Hobart Brothers Co. v. Malcolm T. Gilliland, Inc., 471 F.2d 894, 899 (5th Cir.), cert denied, 412 U.S. 923 (1973)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 316 (1979)
- Hodder v. NRC, 589 F.2d 1115 (D.C. Cir. 1978), cert. denied, 48 U.S.L.W. 3203 (No. 78-1652, Oct. 1, 1979)
Class 9 accident, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 721 (1979)
- Houston Lighting & Power Company (South Texas Project, Units 1 and 2), CLI-77-13, (5 NRC 1303 (1977))
antitrust, exempted construction permits, operating licenses not exempted; ALAB-560, 10 NRC 272 (1979)
- Houston Lighting & Power Company, et al. (South Texas Project, Unit Nos. 1 and 2), CLI-77-13, (5 NRC 1303, 1316 (1917))
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 574 (1979)
- Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, (9 NRC 377, 390-395 (April 4, 1979))
intervention, standing of organization, interest of one member; LBP-79-20, 10 NRC 113 (1979)
intervention, standing, interest, particularity of petition; LBP-79-20, 10 NRC 116 (1979)
- Houston Lighting and Power Company (Allens Creek Unit 1), ALAB-565, (10 NRC 521 (October 1, 1979))
interlocutory review granted, list of cases; ALAB-572, 10 NRC 695 (1979)
- Houston Lighting and Power Company (South Texas Project, Units 1 and 2), ALAB-549, (9 NRC 644, 646 (May 18, 1979))
intervention, standing, interest affected by proceeding; LBP-79-20, 10 NRC 112 (1979)

LEGAL CITATIONS INDEX

CASES

- Houston Lighting and Power Company (South Texas Project, Units 1 and 2), CLI-77-13, (5 NRC 1303, 1310 (1977))
antitrust, violations, remedial license conditions; ALAB-560, 10 NRC 390 (1979)
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10 NRC 229 (1979)
- Houston Lighting and Power Company (South Texas Project, Units 1 and 2), LBP-79-10, (9 NRC 439, 444, (April 3, 1979))
intervention, standing of organization, interest of one member, authority to represent; LBP-79-20, 10 NRC 113 (1979)
- Houston Lighting and Power Company, et al. (South Texas Project, Units 1 and 2), ALAB-549, 644 (May 18, 1979)
intervention, tardiness, pleading technicalities; LBP-79-21, 10 NRC 200 (1979)
- I-291 Why? Ass'n v. Burns, 372 F.Supp 223 (D.Conn. 1974), affirmed, 517 F.2d 1077 (2d Cir. 1975)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- ICC v. Jersey City, 322 U.S. 503, 514 (1944)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 622 (1979)
motion to reopen denied; CLI-79-10, 10 NRC 676 (1979)
- Image of Greater San Antonio v. Brown, 570 F.2d 517 (5th Cir. 1978)
EIS, economic cost, steam generator, 2.206 petition denied; DD-79-19, 10 NRC 636 (1979)
- Indiana and Michigan Electric Company (Donald C. Cook Nuclear Plant, Units 1 and 2), CLI-72-25, 5 AEC 13, 14 (1972)
TMI accident as newly-acquired information justifying late contentions; LBP-79-22, 10 NRC 217 (1979)
- International Railways of Cent. America v. United Brands Co., 532 F.2d 231, 239-40 (2d Cir. 1976)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 345 (1979)
- International Refugee Organization v. Republic S.S. Corp., 189 F.2d 858, 862 (4th Cir. 1951)
antitrust, territorial agreements; ALAB-560, 10 NRC 372 (1979)
- International Salt Co. v. United States, 332 U.S. 392, 401 (1947)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- International T. & T. Corp. v. General T. & E. Corp. 518 F.2d 913, 935-36 (9th Cir. 1975)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 286 (1979)
- Interphoto Corp. v. Minolta Corp., 295 F. Suppl. 711 (S.D.N.Y.), aff'd on other grounds, 417 F.2d 621 (2d Cir. 1969)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 317 (1979)
- Izaak Walton League v. Schlesinger, 337 F. Supp. 287, 295 (D.D.C. 1971)
intervention, standing, interest, failure to prepare required EIS; LBP-79-20, 10 NRC 116 (1979)
- James Talcott, Inc. v. Allahabad Bank, Ltd., 444 F.2d 451, 459 fn. 8 (5th Cir. 1971), cert. denied 404 U.S. 940 (1971)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
- Jones v. D.C. Redevelopment Land Agency, 499 F.2d 502, 512 (D.C. Cir. 1974)
intervention, standing, interest, failure to prepare required EIS; LBP-79-20, 10 NRC 116 (1979)
- Joseph E. Seagram & Sons v. Hawaiian Oke & Liquors, Ltd., 416 F.2d 71, 76 (9th Cir. 1969), cert. denied, 396 U.S. 1062 (1970)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- Kaiser Industries Corp. v. Jones & Laughlin Steel Corp., 515 F.2d 964, 980 n.74 (3rd Cir. 1975)
antitrust, territorial agreements; ALAB-560, 10 NRC 371 (1979)
- Kansas Gas & Electric Company (Wolf Creek Generating Station, Unit No. 1), ALAB-279, (1 NRC 559 (1975))
antitrust, preclicensing review, prior activities, nexus; ALAB-560, 10 NRC 385 (1979)
- Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit No. 1), ALAB-279, (1 NRC 559, 571-72 (1965))
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 574 (1979)
- Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1), ALAB-279 (1 NRC 559, 571 (1975))
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit No.1), ALAB-424, (6 NRC 122, 126-27 (1977))
antitrust, territorial agreements, briefs, incorporation by reference; ALAB-560, 10 NRC 371 (1979)

LEGAL CITATIONS INDEX

CASES

- Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1), ALAB-462, (7 NRC 320, 328 (1978))
motion to reopen denied; CLI-79-10, 10 NRC 677 (1979)
- Kansas Gas and Electric Company (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-327, (3 NRC 408, 416-18 (1976))
protective order, grounds, affidavit, requirement of personal knowledge; ALAB-555, 10 NRC 27 (1979)
- Kansas Gas and Electric Company (Wolf Creek Station, Unit 1), ALAB-279, (1 NRC 559 (1975))
antitrust, violations, participation by Attorney General, remedial license conditions; ALAB-560, 10 NRC 272 (1979)
antitrust, violations, remedial license conditions; ALAB-560, 10 NRC 272 (1979)
- Kleppe v. Sierra Club, 427 U.S. 390 (1976)
significant environmental impact, steam generator, negative declaration, 2.206 petition denied; DD-79-19, 10 NRC 631 (1979)
- Kleppe v. Sierra Club, 427 U.S. 390, 410 fn. 21 (1976)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Klor's v. Broadway-Hale Stores, INC., 359 U.S. 207, at 208 (1959)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 340 (1979)
- Knight v. Hersh, 313 F.2d 879 (D.C. Cir. 1963)
motion to reopen denied; CLI-79-10, 10 NRC 677 (1979)
- L. G. Balfour Co. v. FTC, 442 F.2d 1, 9 (7th Cir. 1971)
antitrust proceedings, res judicata effect of federal court decision, scope of 105 review; LBP-79-27, 10 NRC 571 (1979)
- Lafayette v. Louisiana Power and Light Company, 435 U.S. 389 (1978)
antitrust laws, competition in electric power industry; ALAB-560, 10 NRC 283, 285 (1979)
- Lawlor v. National Screen Serv. Corp., 349 U.S. 322, 326 (1955)
antitrust proceedings, res judicata effect of federal court; LBP-79-27, 10 NRC 565 (1979)
- League of Women Voters v. Corps of Engineers, No. 77-C-54 (N.D. Okla. Nov. 8, 1977)
water supply, Tulsa contract with Corps of Engineers; ALAB-573, 10 NRC 801 (1979)
- Libby Rod & Gun Club v. Poteat, 457 F. Supp. 1177 (D. Mont. 1978)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 621 (1979)
- Libby-Owens-Ford Glass Co. v. FTC, 352 F.2d 415, 418 (6th Cir. 1965)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- Life of the Land v. Brinegar, 485 F.2d 460 (9th Cir. 1973)
EIA, adequacy, 2.206 petition denied; DD-79-19, 10 NRC 646 (1979)
- Life of the Land v. Brinegar, 485 F.2d 460, 468-69 (9th Cir. 1973)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Life of the Land v. Brinegar, 485 F.2d 460, 472 (9th Cir. 1973), certiorari denied, 416 U.S. 961 (1974)
NEPA, international implications, foreign mining, radon release, remote possibilities; ALAB-562, 10 NRC 446 (1979)
- Litton Systems, Inc. v. Southwestern Bell Telephone Co., 539 F.2d 418, 422-24 (5th Cir. 1976)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 285 (1979)
- Lloyd Harbor Study Group v. NRC, Chapter of the Izaak Walton League v. AEC 533 F.2d 1011 (7th Cir.), cert. denied 429 U.S. 858 (1976)
Class 9 accident, TMI restart proceeding; LBP-79-34, 10 NRC 833 (1979)
- Lombard v. Board of Education of City of New York, 502 F.2d 631, 637 (2d Cir. 1974)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 364 (1979)
- Long Island Light Company (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-392, (2 NRC 631, 650-51)
intervention, tardiness, good cause, Indian tribe, delay of proceedings; ALAB-552, 10 NRC 5 (1979)
- Long Island Lighting Company (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-318, (3 NRC 186 (1976))
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 450 (1979)
intervention, timeliness, notice, Federal Register as legal notice; LBP-79-21, 10 NRC 192 (1979)
- Long Island Lighting Company (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 834 (1973)
Class 9 accident, NEPA review; LBP-79-29, 10 NRC 588 (1979)

LEGAL CITATIONS INDEX

CASES

- Class 9 accident, NEPA review; LBP-79-29, 10 NRC 589 (1979)
- Long Island Lighting Company (Shoreham, ALAB-99, 6 AEC 53 (1973)
emergency response issue precluded by rulemaking; LBP-79-33, 10 NRC 823 (1979)
- Lorain Journal v. United States, 342 US 143, 154, 96 L Ed 162, 72 S Ct 181
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 328 (1979)
- Louisiana Power and Light Company (Waterford Station, Unit 3), CLI-73-7, 6 AEC 48 (1973)
("Waterford I"), and CLI-73-25, 6 AEC 619, 620 (1973) ("Waterford II")
antitrust, private monopolies, remedial license conditions; ALAB-560, 10 NRC 272 (1979)
- Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), ALAB-242, 8
AEC 847, 848 (1974)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 688 (197)
- MCI Communications Corp. v. Am. Tel. & Tel. Co., 462 F. Supp. 1072 (N.D. Ill. 1978)
antitrust, immunity, federal regulatory statutes; ALAB-560, 10 NRC 324 (1979)
- Maine Yankee Atomic Power Company (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC
1003, 1017-1018 (1973)
fuel shipment, route selection, civil penalty, 2.206 petition denied; DD-79-15, 10 NRC 512 (1979)
- Maine Yankee Atomic Power Company, (Maine Yankee Atomic Power Station), CLI-74-2, 7 AEC
2, 1974
restart proceedings, TMI, scope, numerous rulings on contentions; LBP-79-34, 10 NRC 840 (1979)
- Manygoats v. Kleppe, 558 F.2d 556 (10th Cir. 1977)
Indian tribe immunity from suit, joinder as party; ALAB-573, 10 NRC 780 (1979)
- Maritime Commission v. Seatrain Lines, 411, U.S. 726, 746 (1973)
FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 784 (1979)
- Marshall v. Barlow's Inc., 436 U.S. 307, 325 (1978)
search and seizure, warrant, inspection; ALAB-567, 10 NRC 538 (1979)
- Martin v. Henley, 452 F.2d 295, 300 (9th Cir. 1971)
antitrust, territorial agreements; ALAB-560, 10 NRC 372 (1979)
- Menominee Tribe of Indians v. United States, 391 U.S. 404, 412-13 (1968)
intervention, tardiness, Indian tribe, federal government trust; ALAB-552, 10 NRC 9 (1979)
- Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit 2), ALAB-562 (10 NRC
437 (1979))
radon release issue deferred in instant case; LBP-79-26, 10 NRC 455 (1979)
- Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), August 9, 1979
emergency response issue precluded by rulemaking; LBP-79-33, 10 NRC 825 (1979)
- Michigan Consolidated Gas Col. v. F.P.C. 283 F.2d 204, 226 (D.C. Cir. 1960), cert. denied, 364
U.S. 913.
antitrust proceedings, res judicata effect of federal court decision, party to prior litigation; LBP-
79-27, 10 NRC 572 (1979)
- Midwestern Gas Transmission Co. v. FERC, 589 F.2d 603, 627 (D.C. Cir. 1978)
due process, hearing, civil penalties; ALAB-567, 10 NRC 538 (1979)
- Minnesota ex rel. Spannaus v. Hoffman, 543 F.2d 1198, 1207-1208 (8th Cir. 1976), certiorari denied,
430 U.S. 977 (1977)
FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 785 (1979)
- Minnesota v. NRC, 602 F.2d 412 (D.C. Cir. 1979)
long-term waste storage, generic rulemaking, contention dismissed; ALAB-573, 10 NRC 800 (1979)
- Mixed Oxide Fuel, CLI-78-10, (7 NRC 711, 718-19 (1978))
NEPA, international implications, effect of Executive Order, radon release; ALAB-562, 10 NRC
446 (1979)
- Modern Home Institute v. Hartford Accident and Indemnity Co., 513 F.2d 102, 111 (2d Cir. 1975)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 348 (1979)
- Monarch Chem. Works v. Exon, 452 F. Supp. 493 (D. Neb. 1978)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 621 (1979)
- Moore v. Jas. H. Matthews & Co., 473 F.2d 328, 332 (9th Cir. 1973)
antitrust, monopolization, de minimus argument; ALAB-560, 10 NRC 376 (1979)
- Moran Towing & Transp. Co. v. Navigazione Libera Triestina, S.A., 92 F.2d 37, 40-41 (2d Cir.
1937), cert. denied, 302 U.S. 744 (1937)
antitrust, territorial agreements; ALAB-560, 10 NRC 372 (1979)
- Morton v. Mancari, 417 U.S. 535 (1974)
intervention, tardiness, Indian tribe, federal government trust; ALAB-552, 10 NRC 8 (1979)
- Mt. Hood Stages, Inc. v. Greyhound Corp. 555 F.2d 687, 691-92 (9th Cir. 1977)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 286 (1979)

LEGAL CITATIONS INDEX

CASES

- NAACP v. Federal Power Commission, 425 U.S. 662 (1976)
discriminatory labor practices, inapplicability of Civil Rights Act in NRC licensing; ALAB-573, 10 NRC 782 (1979)
- NECNP vs. NRC, 582 F.2d 87, 93 n.9 (1978)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 707 (1979)
- NLRB v. Tensco Corp., 339 F.2d 396, 399 (6th Cir. 1964)
civil penalty, notice of charges; ALAB-567, 10 NRC 549 (1979)
- NRDC v. Morton, 458 F.2d 827 (D.C. Cir. 1972)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- NRDC v. Morton, 458 F.2d 827, (D.C. Cir. 1972)
EIA, adequacy, 2.206 petition denied; DD-79-19, 10 NRC 643 (1979)
- NRDC v. Morton, 458 F.2d 827, 834 (D.C. Cir. 1972)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- NRDC v. NRC, 547 F.2d 633 (D.C. Cir. 1976), reversed sub nom
need for power, alternatives, relevance of cost; ALAB-573, 10 NRC 805 (1979)
- NRDC v. NRC, 582 F.2d 166 (2nd Cir. 1978)
long-term waste storage, generic rulemaking, contention dismissed; ALAB-573, 10 NRC 800 (1979)
- National Association of Government Employees v. Brown, 556 F.2d 76 (D.C. Cir. 1977)
EIS, economic cost, steam generator, 2.206 petition denied; DD-79-19, 10 NRC 636 (1979)
- National Helium Corp. v. Morton, 486 F.2d 995, 1002, 1004 (10th Cir. 1973), certiorari denied, 416 U.S. 993 (1974)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- National Screen Service Corp. v. Poster Exchange, Inc., 305 F.2d 647, 652 (5th Cir. 1962)
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 328 (1979)
- National Soc. of Professional Engineers v. United States (435 U.S. 679, 689)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 286 (1979)
- New England Coalition on Nuclear Pollution v. NRC, 582 F.2d 87 (1st Cir. 1978)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 705 (1979)
- New England Coalition on Nuclear Pollution v. NRC, 582 F.2d 87, 95-96 (1978)
alternate sites, use of "completion costs"; ALAB-557, 10 NRC 154 (1979)
- New England Coalition v. NRC, 582 F.2d 87, 95 (1st Cir. 1978)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- New England Coalition v. NRC, 582, F.2d 87, 93 (1st Cir. 1978)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- New England Power Company (NEP Units 1 and 2), ALAB-390, (5 NRC 733, 736-38 (1977))
ultimate heat sink, shared system, size of low population zone; ALAB-573, 10 NRC 796 (1979)
- New England Power Company (NEP, Units 1 and 2), LBP-78-9, (7 NRC 271 (1978))
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10 NRC 228 (1979)
- New England Power Company (NEP, Units 1 and 2), LBP-78-9, (7 NRC 271, 281 (1978))
construction permit application, acceptability, NRC Staff, 2.206 petition denied; DD-79-13, 10 NRC 251 (1979)
- New England Power Company, et al. (NEP, Units 1 and 2), LBP-78-9, (7 NRC 271, 292-294 (1978))
intervention, tardiness, delay not attributable to tardiness; LBP-79-21, 10 NRC 197 (1979)
- New England Tel. & Tel. Co. v. State, 104 N.H. 229, 183 A.2d 237 (1962)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 713 (1979)
- New England Tel. & Tel. Co. v. State, 113 N.H. 92, 302 A.2d 814 (1973)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 713 (1979)
- New Motor Vehicle Board v. Orrin W. Fox Co., 439 U.S. 96 (1978)
antitrust defense, state anti-pirating law; ALAB-560, 10 NRC 306 (1979)
- New York Shipbuilding Corporation (Byproduct Material License No. 29-2204-2), 1 AEC 842 (1961)
appeal, Staff, initial decision, civil penalties; ALAB-567, 10 NRC 548 (1979)
- New York v. Kleppe, 429 U.S. 1307, 1311 (1976)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)

LEGAL CITATIONS INDEX

CASES

- Niagara Mohawk Power Corp. (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, (1 NRC 347, 372 (1975))
FES modification by adjudication, 2.206 petition denied; DD-79-18, 10 NRC 619 (1979)
- Niagara Mohawk Power Corp. (Nine Mile Point Station, Unit 2), ALAB-264, (1 NRC 347, 355-57 (1975))
appeal of issue abandoned at trial, civil penalty; ALAB-567, 10 NRC 550 (1979)
- Niagara Mohawk Power Corp. (Nine Mile Point Unit 2), ALAB-264, (1 NRC 347, 365, fn. 61 and accompanying text (1975))
seismic criteria design, forecasting seismic activity; ALAB-561, 10 NRC 428 (1979)
- Niagara Mohawk Power Corp. (Nine Mile Station, Unit 2), ALAB-264, (1 NRC 347, 357 (1975))
summary, disposition, prevailing party may not appeal; ALAB-573, 10 NRC 789 (1979)
- North Anna Environmental Coalition v. NRC, 533 F.2d 655 (D.C. Cir. 1976)
site suitability, LWA, capable faults; ALAB-573, 10 NRC 793 (1979)
- Northern Indiana Public Service Co. v. Porter County Chapter, 423 U.S. 12, 14-15 (1975)
appeal, Staff, initial decision, civil penalties; ALAB-567, 10 NRC 548 (1979)
- Northern Indiana Public Service Company (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 247 (1974)
disqualification, untimeliness, waiver; ALAB-556, 10 NRC 32 (1979)
motion to reopen denied; CLI-79-10, 10 NRC 677 (1979)
procedure, informal pleading, ex parte communication, 2.206 petition denied; DD-79-22, 10 NRC 729 (1979)
- Northern Pacific Ry. Co. v. United States, 356 U.S. 1, 4-5 (1958)(Sherman Act)
antitrust laws, encouragement of competition; ALAB-560, 10 NRC 278 (1979)
- Northern States Power Company (Minnesota and Wisconsin) (Tyrone Energy Park, Unit 1), ALAB-562 (10 NRC 437 (1979))
radon release issue deferred in instant case; LBP-79-26, 10 NRC 455 (1979)
- Northern States Power Company (Prairie Island Generating Plant, Units 1 and 2), ALAB-107, 6 AEC 188, 193 (1973)
intervention, standing of organization, interest of one member, geographic proximity; LBP-79-20, 10 NRC 114 (1979)
staff determination to issue EIS, adjudicatory issue; LBP-79-20, 10 NRC 120 (1979)
- Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-104, 6 AEC 179, fn. 2 (1973)
initial decisions, exposition of issues, intervention, tardiness; LBP-79-21, 10 NRC 200 (1979)
- Northern States Power Company (Prairie Island Plant, Units 1 and 2), ALAB-455, (7 NRC 41 (1978)), affirmed on this point and remanded sub nom
long-term waste storage, generic rulemaking, contention dismissed; ALAB-573, 10 NRC 800 (1979)
- Northern States Power Company (Prairie Island, Units 1 and 2), ALAB-455, (7 NRC 41, 48 (1978))
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Norton v. Larney, 266 U.S. 511, 517 (1925)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 364 (1979)
- Nuclear Engineering Company, Inc. (Sheffield Low-Level Radioactive Waste Disposal Site; ALAB-473, (7 NRC 737, 740 (1978))
intervention, Congressmen's participation; LBP-79-28, 11 NRC 582 (1980)
- Nuclear Fuel Services, Inc. (West Valley Reprocessing Plant), CLI-75-4, (1 NRC 273, 276 (1975))
intervention, extreme tardiness, delay of proceedings, Indian tribe; ALAB-559, 10 NRC 172 (1979)
limited appearance statement, inadequacy to protect interest of tardy intervenor; LBP-79-22, 10 NRC 215 (1979)
protecting interests of governmental party, late contentions; LBP-79-22, 10 NRC 216 (1979)
- Nuclear Regulatory Commission (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, (4 NRC 494 (1976))
intervenor's request for financial aid denied; LBP-79-20, 10 NRC 125 (1979)
- Offshore Power Systems (Floating Nuclear Plants), ALAB-489, (8 NRC 194 (1978))
Class 9 accident, certified question, history of proceedings; CLI-79-9, 10 NRC 257 (1979)
interlocutory review granted, list of cases; ALAB-572, 10 NRC 695 (1979)
- Offshore Power Systems (Floating Nuclear Plants), ALAB-500, (8 NRC 323 (1978))
Class 9 accident, certified question, history of proceedings; CLI-79-9, 10 NRC 258 (1979)
- Offshore Power Systems (Floating Nuclear Plants), CLI-79-9, (10 NRC 260 (September 14, 1979))
health effects, low level emissions, generic rule vs. adjudication; ALAB-573, 10 NRC 790 (1979)

LEGAL CITATIONS INDEX

CASES

- Offshore Power Systems (Floating Nuclear Plants, (ALAB-500, (8 NRC 323, 324-25 (1978)), on certification, CLI-79-9, (10 NRC 257)
health effects, low level emissions, generic rule vs. adjudication; ALAB-573, 10 NRC 790 (1979)
- Offshore Power Systems (Floating Nuclear Power Plants), ALAB-489 (8 NRC 194 (1978))
Class 9 accident, NEPA review; LBP-79-29, 10 NRC 589 (1979)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
- Offshore Power Systems (Floating Nuclear Power Plants), ALAB-489, (8 NRC 194, 209-25 (1978))
Class 9 accident, TMI restart proceeding; LBP-79-34, 10 NRC 833 (1979)
Class 9 accident, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 721 (1979)
time, extension, written testimony, NRC staff; ALAB-553, 10 NRC 13 (1979)
- Offshore Power Systems (Floating Nuclear Power Plants), CLI-79-9, (10 NRC 257 (September 14, 1979))
Class 9 accident, TMI restart proceeding; LBP-79-34, 10 NRC 834 (1979)
- Offshore Power Systems, ALAB-489, (8 NRC 194 (1978))
analysis of NRC licensing procedure, early site suitability; LBP-79-23, 10 NRC 224 (1979)
- Ogunquit Village Corp. v. Davis, 553 F.2d 242 (1st Cir. 1977)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 621 (1979)
- Opp Cotton Mills, Inc. v. Administrator, 312 U.S. 126, 152-53 (1941)
due process, hearing, civil penalties; ALAB-567, 10 NRC 538 (1979)
- Otter Tail Power Co. v. FPC, 473 F.2d 1253 (8th Cir. 1973)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 358 (1979)
- Otter Tail Power Company v. United States, 410 U.S. 366, 368 (1973)
antitrust, monopoly power, electrical suppliers; ALAB-560, 10 NRC 276, 283, 316 (1979)
- PRDC v. Electrical Workers, 367 U.S. 396, 408 (1961)
FWPCA, license amendments, state certification, 2.206 petition denied; DD-79-19, 10 NRC 651 (1979)
- Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-76-1, (3 NRC 73, 74 n. 1 (1976))
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10 NRC 228 (1979)
background of instant case; LBP-79-26, 10 NRC 456 (1979)
motion to delay fuel shipment, denial, appealability; LBP-79-24, 10 NRC 232 (1979)
- Pacific Gas and Electric Company (Diablo Canyon Units 1 and 2), ALAB-504, (8 NRC 406) and ALAB-514, (8 NRC 697 (1978))
interlocutory review granted, list of cases; ALAB-572, 10 NRC 695 (1979)
- Pacific Gas and Electric Company (Diablo Canyon Units 1 and 2), ALAB-519, (9 NRC 42 (1979))
interlocutory review granted, list of cases; ALAB-572, 10 NRC 695 (1979)
- Pacific Gas and Electric Company (Stanislaus Nuclear Project, Unit 1), ALAB-550 (9 NRC 683 (June 15, 1979))
antitrust proceeding, private party petition; ALAB-560, 10 NRC 271 (1979)
- Pacific Seafarers, Inc. v. Pacific Far East Line, 404 F.2d 804 (D.C. Cir. 1968), cert. denied, 393 U.S. 1093 (1969), ALAB-560, (10 NRC 363)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 571 (1979)
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 363 (1979)
- Parkland Hosiery Co. v. Shore, 439 U.S. 322, 58 L.Ed.2d 552 (1979)
antitrust, territorial agreements; ALAB-560, 10 NRC 372 (1979)
- Parklane Hosiery, Inc. v. Shore, U.S. , 99 S. Ct. 645, 58 L. Ed. 2d 552, 559, fn. 5, (1979)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 566, 572 (1979)
- Pennsylvania Power and Light Company (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-29, (10 NRC 586, (October 19, 1979))
Class 9 accident, TMI restart proceeding; LBP-79-34, 10 NRC 833 (1979)
- Pennsylvania Power and Light Company (Susquehanna Units 1 and 2), ALAB-563, (10 NRC 449 (September 19, 1979))
discovery, directed certification denied; ALAB-572, 10 NRC 696 (1979)
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 452 (1979)
intervention, ALAB, prehearing stages, intercession, scheduling; ALAB-565, 10 NRC 522 (1979)

LEGAL CITATIONS INDEX

CASES

- Pennsylvania W. & P. Co. v. Consolidated G., E.L. & P. Co., 184 F.2d 552, 558 (4th Cir.), cert denied, 340 U.S. 906 (1950)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 317 (1979)
- Peterson v. Clark Leasing Corporation, 451 F.2d 1291, 1292 (9th Cir. 1971)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
- Philadelphia Electric Company (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 58 (1974)
FWPCA permit, NRC licensing proceeding, intervention contention; LBP-79-20, 10 NRC 124 (1979)
discovery, burden, participation in other proceedings; LBP-79-31, 10 NRC 604 (1979)
scheduling of hearings on aircraft crash probability and radon release; ALAB-570, 10 NRC 684 (1979)
- Philadelphia Electric Company (Peach Bottom Unit 3), ALAB-532, (9 NRC 279 (1979))
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 560 (1979)
- Philadelphia Electric Company (Peach Bottom Units 2 and 3), ALAB-216, 8 AEC 13, 37-59, reversed in part on other grounds, CLI-74-32, 8 AEC 217 (1974)
water, pollution control, NRC review before FWPCA; ALAB-569, 10 NRC 558 (1979)
- Philadelphia Electric Company (Peach Bottom Units 2 and 3), ALAB-480, (7 NRC 796 (1978)); ALAB-509, (8 NRC 679 (1978)); ALAB-540 (9 NRC 428 (1979)), reconsideration denied, ALAB-546, (9 NRC 636 (1979)); ALAB-562, (10 NRC 437 (September 10, 1979));
radon release cases, directed certification denied; ALAB-572, 10 NRC 695 (1979)
- Philadelphia Electric Company (Peach Bottom Units 2 and 3), ALAB-480, 7 NRC 796 (1978)
radon release, consolidated proceedings; ALAB-569, 10 NRC 562 (1979)
- Philadelphia Electric Company (Peach Bottom, Units 2 and 3), ALAB-562 (10 NRC 437 (1979))
radon release issue deferred in instant case; LBP-79-26, 10 NRC 455 (1979)
- Philadelphia Electric Company, et al. (Peach Bottom Atomic Power Station, Units 2 and 3), CLI-73-10, 6 AEC 173
intervention, standing, geographic proximity, recreational interests; LBP-79-21, 10 NRC 189 (1979)
- Philadelphia Electric Company, et al. (Peach Bottom Station, Units 2 and 3), ALAB-480, (7 NRC 796 (1978))
radon release, review reserved pending completion of consolidated proceedings; ALAB-573, 10 NRC 807 (1979)
- Pitchford Scientific Instruments Corp. v. Pepi, Inc., 435 F. Supp. 685, 688 (W.D. Pa. 1977), aff'd mem., 582 F.2d 1975 (3rd Cir. 1978; cert denied, 60 L. Ed. 2d 242 (1979)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 316 (1979)
- Porter County Chapter of the Izaak Walton League v. AEC, 533 F.2d 1011 (7th Cir.), cert denied 429 U.S. 858 (1976)
Class 9 accident, interim guidance of proposed reg. offshore plant; CLI-79-9, 10 NRC 259 (1979)
- Porter County Chapter of the Izaak Walton League v. NRC, F.2d (Sept. 6, 1979)
operating license, safety issues, resolution, construction permit, design change, no need for amendment; CLI-79-11, 10 NRC 743 (1979)
- Porter County Chapter v. AEC, 533 F.2d 1011, 1017-18 (7th Cir.), cert. denied, 429 U.S. 945 (1976)
Class 9 accident, NEPA review; LBP-79-29, 10 NRC 589 (1979)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
- Porter County Chapter v. NRC, F.2d , slip op. at 8-19 (D.C. Cir. No. 78-1559, September 6, 1979)
Director of Inspection, role in civil penalty hearing; ALAB-567, 10 NRC 537 (1979)
- Portland General Electric Company (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, (4 NRC 610, 613-14 (1976))
intervention, standing, interest affected by proceeding; LBP-79-20, 10 NRC 112 (1979)
- Portland General Electric Company (Pebble Springs Nuclear Plant), CLI-76-27, (4 NRC 610 (1976))
intervention, Congressmen's participation; LBP-79-28, 11 NRC 582 (1980)
- Portland General Electric Company (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, (4 NRC 610, 613-14 (1976))
intervention, standing, rate-payers; LBP-79-20, 10 NRC 117 (1979)
- Portland General Electric Company (Pebble Springs, Units 1 and 2), CLI-76-27, (4 NRC 610, 614 (1976))
EIS, economic cost, steam generator, 2.206 petition denied, rates; DD-79-19, 10 NRC 637 (1979)
- Portland General Electric Company (Trojan Nuclear Plant), ALAB-531 (March 21, 1979)
NEPA, alternatives, 2.206 petition denied; DD-79-19, 10 NRC 647 (1979)

LEGAL CITATIONS INDEX

CASES

- Portland General Electric Company (Trojan Nuclear Plant), ALAB-531, (9 NRC 263 (March 21, 1979))
NEPA, alternatives, fuel pool modification, insignificant impact; LBP-79-25, 10 NRC 245 (1979)
- Portland General Electric Company (Trojan Plant), ALAB-531, (9 NRC 263, 268 (1979))
long-term waste storage, generic rulemaking, contention dismissed; ALAB-573, 10 NRC 800 (1979)
- Portland General Electric Company, et al. (Trojan Nuclear Plant), LBP-77-69, (6 NRC 1179, 1182 (1977))
license amendment, construction permit, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 661 (1979)
- Potomac Electric Power Company (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 82-83 (1974)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 591 (1979)
emergency response issue precluded by rulemaking; LBP-79-33, 10 NRC 821 (1979)
intervention, tardiness, delay not attributable to tardiness; LBP-79-21, 10 NRC 197 (1979)
radiation doses, workers, applicability of new regs, intervention contention; LBP-79-20, 10 NRC 119 (1979)
scheduling of hearings on aircraft crash probability and radon release; ALAB-570, 10 NRC 682 (1979)
- Potomac Electric Power Company (Douglas Point Station, Units 1 and 2), ALAB-218, 8 AEC 79, 82-83 (1974)
Class 9 accident, LWA, NEPA review; ALAB-573, 10 NRC 791 (1979)
radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 814 (1979)
- Potomac Electric Power Company (Douglas Point), ALAB-218, 8 AEC 79 (1974)
emergency response issue precluded by rulemaking; LBP-79-33, 10 NRC 823 (1979)
- Power Reactor Development Corp. v. International Union of Electrical Workers, 367 U.S. 396 (1961)
safety issues, resolution, construction permit, design change, no need for amendment; CLI-79-11, 10 NRC 741, 755 (1979)
- Prairie Island and Vermont Yankee (Northern States Power Co. and Vermont Yankee Nuclear Power Corp., ALAB-455, (7 NRC 41, 57-59)
occupational exposure, intervention, tardiness, developing sound record; LBP-79-21, 10 NRC 209 (1979)
- Project Management Corporation (Clinch River Breeder Reactor Plant), ALAB-354, (4 NRC 383, 392-93 (1976))
interested municipality, late contentions; LBP-79-22, 10 NRC 216 (1979)
intervention, tardiness, good cause, Indian tribe, delay of proceedings; ALAB-552, 10 NRC 5 (1979)
intervention, tardiness, good cause, weighty factor, Indian tribe; ALAB-559, 10 NRC 164 (1979)
- Public Service Electric and Gas Company (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973)
contentions, adequacy, pro se participation; LBP-79-20, 10 NRC 117 (1979)
- Public Service Co. of Indiana (Marble Hill Units 1 and 2), ALAB-405, (5 NRC 1190, 1192 (1977))
interlocutory review, directed certification denied; ALAB-572, 10 NRC 695 (1979)
- Public Service Co. of Indiana, Inc. (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, (3 NRC 167 (1976))
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10 NRC 228 (1979)
- Public Service Company of Indiana, Inc. (Marble Hill, Units 1 and 2), ALAB-530 (March 19, 1979)
show-cause proceeding, 2.206 petition denied; DD-79-10, 10 NRC 129 (1979)
- Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-530, (9 NRC 261 (March 19, 1979))
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 622 (1979)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 622 (1979)
intervention, standing, interest, failure to prepare required EIS; LBP-79-20, 10 NRC 116 (1979)
need for power, plant ownership, 2.206 petition denied; DD-79-18, 10 NRC 620 (1979)
safety hearings, reopenings, 2.206 petition denied; DD-79-17, 10 NRC 615 (1979)
solar alternatives, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 724-725 (1979)

LEGAL CITATIONS INDEX

CASES

- Public Service Company of Indiana (Marble Hill Station, Unit 1 and 2), ALAB-459, (7 NRC 179, 202 (1978))
summary, disposition, prevailing party may not appeal; ALAB-573, 10 NRC 789 (1979)
- Public Service Company of Indiana (Marble Hill Station, Units 1 and 2), ALAB-461, 7 NRC 313 (1978)
LWA, appealability; ALAB-573, 10 NRC 778 (1979)
- Public Service Company of Indiana (Marble Hill Units 1 and 2), ALAB-405, (5 NRC 1190, 1191, fn. 3 and accompanying text, 1192, fn. 7 and accompanying text (1977))
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 452 (1979)
intervention, ALAB, prehearing stages, intercession, scheduling; ALAB-565, 10 NRC 522 (1979)
- Public Service Company of Indiana (Marble Hill, Units 1 and 2), ALAB-459, (7 NRC 179, 189 and ALAB-493, (8 NRC 253, 256 (1978))
FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 783 (1979)
- Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-10, (10 NRC 129 (July 6, 1979)) (Docket
petition, 2.206, adequacy, nexus; DD-79-21, 10 NRC 719 (1979)
- Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-356, (4 NRC 525 (1976))
ALAB, authority to make fact findings on record; ALAB-554, 10 NRC 20 (1979)
Class 9 accident, LWA, NEPA review, Commission decision; ALAB-573, 10 NRC 792 (1979)
FES, circulation, evidence, LWA appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
analysis of NRC licensing procedure, early site suitability; LBP-79-23, 10 NRC 224 (1979)
antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 572 (1979)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 567 (1979)
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 450 (1979)
need for power, LWA, contention denied; ALAB-573, 10 NRC 804 (1979)
radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 820 (1979)
water supply, permit, LWA, motion to reopen denied; ALAB-573, 10 NRC 804 (1979)
- Public Service Company of New Hampshire (Seabrook Units 1 and 2), ALAB-271, (1 NRC 478, 482-83 (1975))
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)
interlocutory review, directed certification denied; ALAB-572, 10 NRC 694 (1979)
- Public Service Company of New Hampshire (Seabrook Units 1 and 2), ALAB-366, (5 NRC 39, 48-58 (1977)), affirmed, CLI-77-8 (5 NRC 503, 508-09 (1977)), see also CLI-78-1, (7 NRC 1, 24-26 (1978))
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 560 (1979)
- Public Service Company of New Hampshire (Seabrook Units 1 and 2), ALAB-422, (6 NRC 33, 54-65, 111-13 (1977))
seismological issues, directed certification denied; ALAB-572, 10 NRC 696 (1979)
- Public Service Company of New Hampshire (Seabrook Units 1 and 2), CLI-78-1, (7 NRC 1 (1978))
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 559 (1979)
- Public Service Company of New Hampshire, et al. (Seabrook Station, Units 1 and 2), (7 NRC 1 (1978))
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 705 (1979)
- Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), ALAB-370 (5 NRC 131 (1977))
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 449 (1979)
- Public Service Company of Oklahoma, et al. (Black Fox Units 1 and 2), ALAB-573, (10 NRC 759 (December 7, 1979))
Class 9 accident, TMI restart proceeding; LBP-79-34, 10 NRC 834 (1979)
- Public Service Electric and Gas Company (Hope Creek Generating Station, Units 1 and 2), ALAB-394, (5 NRC 769 (1977))
antitrust, territorial agreements, briefs, incorporation by reference; ALAB-560, 10 NRC 371 (1979)
radon release issue deferred in instant case; LBP-79-26, 10 NRC 455 (1979)

LEGAL CITATIONS INDEX

CASES

- Public Service Electric and Gas Company, (Hope Creek Station, Units 1 and 2), (5 NRC 769, 770 (1977))
FES, circulation, evidence, LWA, appeal, recirculate, inadequacy of brief; ALAB-573, 10 NRC 786 (1979)
- Public Service Gas and Electric Company (Hope Creek Station, Units 1 and 2), ALAB-394, (5 NRC 769, 770 (1977))
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 805 (1979)
- Public Service of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-295, (2 NRC 668 (1975))
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 450 (1979)
- Puerto Rico Water Resources Authority (North Coast Unit 1), ALAB-361, (4 NRC 625 (1976))
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 452 (1979)
- Puget Sound Gillnetters Ass'n v. United States District Court, 573 F.2d 1123, 1126 (9th Cir. 1978)
intervention, extreme tardiness, importance of Indian's fishing rights, dissenting opinion; ALAB-559, 10 NRC 177 (1979)
- Puget Sound Power and Light Company (Skagit Units 1 and 2) ALAB-552, (10 NRC 6-7 (July 19, 1979))
time, extension, written testimony, NRC staff; ALAB-553, 10 NRC 13 (1979)
- Radiant Burners v. Peoples Gas Light and Coke Co., 364 U.S. 656 (1961)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- Rochester Gas and Electric Corp. (Sterling Project, Unit 1), ALAB-502, (8 NRC 383, 388 fn. 11 (1978))
need for power, LWA, contention denied; ALAB-573, 10 NRC 804 (1979)
- Rochester Gas and Electric Corp. (Sterling Project, Unit No. 1), ALAB-502, (8 NRC 383, 387-89 (1978))
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 806 (1979)
- Rochester Gas and Electric Corporation (Sterling Power Project, Nuclear Unit 1), ALAB-562 (10 NRC 437 (1979))
radon release issue deferred in instant case; LBP-79-26, 10 NRC 455 (1979)
- Rubbermaid, Inc. v. FTC, 575 F.2d 1169, 1172-1173 (6th Cir. 1978)
antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 399 (1979)
- SEC v. Cheney Corp., 318 U.S. 80, 92 (1943)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 574 (1979)
- Sargent-Welch Scientific Co. v. Ventron Corp., 567 F.2d 701, 711-12 (7th Cir), cert. denied 439 U.S. 822 (1978)
antitrust, monopolist, practices, negotiations with municipality; ALAB-560, 10 NRC 379 (1979)
- Scenic Hudson Preservation Conference v. F.P.C., 354 F.2d 608, 620-21 (2nd Cir. 1965), cert. denied. 384 U.S. 941 (1966)
antitrust proceedings, res judicata effect of federal court decision, party to prior litigation; LBP-79-27, 10 NRC 572 (1979)
- Scientists Institute for Public Information, Inc. (SIPI) v. AEC, 481 F.2d 1979 at 1989 (1973)
programmatic EIS, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 640 (1979)
- Scientists' Institute for Public Information v. AEC, 481 F.2d 1079, 1092 (D.C. Cir. 1973)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Seacoast Anti-Pollution League v. Costle, F.2d (No. 78-1339, decided May 2, 1979)
alternate site, once-through cooling found acceptable; ALAB-557, 10 NRC 154 (1979)
- Seacoast Anti-Pollution League v. NRC, F.2d, n. 10 (No. 78-1172, decided May 30, 1979)
alternate sites, Use of "completion costs"; ALAB-557, 10 NRC 155 (1979)
- Seminole Nation v. United States, 316 U.S. 286, 296-97 (1942)
intervention, tardiness, Indian tribe, federal government trust; ALAB-552, 10 NRC 8 (1979)
- Seminole Nation v. United States, 316 U.S. 286, 297 (1942)
intervention, extreme tardiness, U.S. as trustee of Indian tribe, intervention denied; ALAB-559, 10 NRC 180 (1979)
- Sherr v. Volpe, 466 F.2d 1027, 1034 (7th Cir. 1972)
intervention, standing, interest, failure to prepare required EIS; LBP-79-20, 10 NRC 116 (1979)
- Sierra Club v. Adams, 578 F.2d 389 (D.C. Cir. 1978)
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 446 (1979)

LEGAL CITATIONS INDEX

CASES

- Sierra Club v. Cavanaugh, 447 F. Supp. 427, 431 (D.S.D. 1978)
significant environmental impact, steam generator, negative declaration, 2.206 petition denied; DD-79-19, 10 NRC 630 (1979)
- Sierra Club v. Coleman, 405 F. Supp. 53 (D.D.C. 1975)
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 446 (1979)
- Sierra Club v. Froehle, 534 F.2d 1289, 1299 (8th Cir. 1976)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Sierra Club v. Lynn, 364 F.Supp. 834 (W.D. Tex. 1973)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- Sierra Club v. Morton, 405 U.S. 727 (1972)
intervention, standing, interest, particularity of petition; LBP-79-20, 10 NRC 116 (1979)
- Sierra Club v. Morton, 510 F.2d 813, 818-19 (5th Cir. 1975)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Sierra Club v. Morton, 510 F.2d 813, 825 (5th Cir., 1978)
NEPA, alternatives, 2.206 petition denied; DD-79-19, 10 NRC 648 (1979)
- Silver v. New York Stock Exchange, 373 U.S. 341, 357 (1963)
antitrust exemptions from federal regulatory statutes; ALAB-560, 10 NRC 303 (1979)
- Smith v. Pro Football, Inc., 593 F.2d 1173 (D.C. Cir. 1978)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- Soc. of Professional Engineers v. United States, 435 U.S. 679 (1978)
antitrust, immunity, federal regulatory statutes; ALAB-560, 10 NRC 324 (1979)
- South Carolina Electric and Gas Co., et al., Virgil C. Summer Nuclear Station, Unit 1, LBP-78-6, (7 NRC 209, 213-214, February 3, 1978))
intervention, tardiness, extent of representation of petitioner's interest where no hearing without intervention; LBP-79-21, 10 NRC 195 (1979)
- Spilker v. Hankin, 188 F.2d 35, 37-8 (D.C. Cir. 1951)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 566 (1979)
- Standard Oil Co. v. Moore, 251 F.2d 188, 198-99 (9th Cir. 1957)
antitrust, power pool, refusal to deal, group boycott bona fide request to deal; ALAB-560, 10 NRC 349 (1979)
- Stebbins v. Keystone Ins. Co., 481 F.2d 501, 508 (D.C. Cir. 1973)
antitrust, territorial agreements; ALAB-560, 10 NRC 372 (1979)
- Tennessee Valley Authority (Hartsville Nuclear Plant), ALAB-463, (7 NRC 341, 356, 360 (1978))
construction permit, management capability, applicant's burden; LBP-79-19, 10 NRC 96 (1979)
- Tennessee Valley Authority (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, (7 NRC 341, 370 (1978))
antitrust, territorial agreements, briefs, incorporation by reference; ALAB-560, 10 NRC 371 (1979)
antitrust, territorial agreements, briefs, incorporation by reference; ALAB-560, 10 NRC 371 (1979)
summary disposition, improper procedure on basis of evidence adduced in same proceeding; ALAB-557, 10 NRC 155 (1979)
- Tennessee Valley Authority (Hartsville Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, (7 NRC 341, 347-48 (1978))
appeal of issue not raised below, civil penalty; ALAB-567, 10 NRC 550 (1979)
- Tennessee Valley Authority (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, (5 NRC 1418, 1421 n. 4 (1977)) (50 miles)
intervention, standing of organization, interest of one member, geographic proximity; LBP-79-20, 10 NRC 114 (1979)
intervention, standing, rate-payers; LBP-79-20, 10 NRC 117 (1979)
intervention, standing, representing other parties, TMI restart proceedings; LBP-79-34, 10 NRC 855 (1979)
- Tennessee Valley Authority (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, (8 NRC 702 (1978))
water quality, lack of NRC jurisdiction, intervention contention; LBP-79-20, 10 NRC 124 (1979)
- Tennessee Valley Authority (Yellow Creek Units 1 and 2), ALAB-515, (8 NRC 702, 715 (1978))
radon release, consolidate proceedings; ALAB-569, 10 NRC 562 (1979)
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 560 (1979)
- The Detroit Edison Company (Greenwood Energy Center, Units 2 and 3), ALAB-376, (5 NRC 426, 428 (1977))
intervenor's request for financial aid denied; LBP-79-20, 10 NRC 125 (1979)

LEGAL CITATIONS INDEX

CASES

- the Toledo Edison Company (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), ALAB-378 (5 NRC 557 (1977))
- antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 567 (1979)
- antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 568 (1979)
- antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 572 (1979)
- The Toledo Edison Company (Davis-Besse, Unit 1), ALAB-323, (3 NRC 331, 346 fn. 41 (1976))
- antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 286 (1979)
- Timken Roller Bearing Co. v. United States, 341 US 593, 95 L ed 1199, 71 S Ct 971
- antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 315 (1979)
- Tipler v. E.I. du Pont de Nemours and Co., 443 F.2d 125, 128 (6th Cir. 1971)
- antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 566, 569 (1979)
- Tipler v. E.I. duPont de Nemours & Co., 443 F.2d 125, 128-29 (6th Cir. 1971)
- antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 363 (1979)
- Tipler v. E.I. duPont deNemours & Co., 443 F.2d 125, 128-29 (6th Cir. 1971)
- antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 571 (1979)
- Toledo Edison Company (Davis-Besse Nuclear Power Station), ALAB-300, (2 NRC 752, 769 (1975))
- interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 450 (1979)
- Toledo Edison Company (Davis-Besse Nuclear Power Station), LBP-74-13 AEC 282 (1974)
- antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 403 (1979)
- Toledo Edison Company (Davis-Besse Nuclear Power Station), LBP-74-24, 7 AEC 705, 707 (1974)
- antitrust, violations, remedial license conditions, wholesale power; ALAB-560, 10 NRC 403 (1979)
- Toledo Edison Company (Davis-Besse Station), ALAB-300, 2 NRC 752, 758 (1975)
- LWA, appealability; ALAB-573, 10 NRC 778 (1979)
- Toledo Edison Company (Davis-Besse Station, Unit 1), ALAB-323, (3 NRC 331 (1976))
- antitrust, exempted construction permits, operating licenses not exempted; ALAB-560, 10 NRC 272 (1979)
- Train v. Colorado Public Interest Research Group, 426 U.S. 1 (1976)
- radioactive effluents, FWPCA, inapplicability, intervention contention; LBP-79-20, 10 NRC 124 (1979)
- Train v. Colorado Public Interest Research Group, Inc. 420 U.S. 1 (1976)
- license amendment, construction permit, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 660 (1979)
- Trinity Episcopal School Corp. v. Harris, 445 F.Supp. 204 (S.D.N.Y. 1978), reversed on other grounds, 590 F.2d 204 (2nd Cir. 1970)
- NEPA, alternatives, 2.206 petition denied; DD-79-19, 10 NRC 647 (1979)
- Trinity Episcopal School Corp. v. Rommey, 523 F.2d 88 (2d Cir. 1975)
- NEPA, alternatives, 2.206 petition denied; DD-79-19, 10 NRC 647 (1979)
- Trout Unlimited v. Morton, 509 F.2d 1276, 1281-83 (9th Cir. 1974)
- NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779 (1979)
- Unarco Industries, Inc. v. Evans Products Company, 403 F.2d 638 (7th Cir. 1968)
- motion to reopen denied; CLI-79-10, 10 NRC 677 (1979)
- Union Electric Company (Callaway Plant) ALAB-348, (4 NRC 225, 227-231, 223)
- construction permit, management capability, applicant's burden; LBP-79-19, 10 NRC 96 (1979)
- Union Electric Company (Callaway Plant, Units 1 and 2), ALAB-527, (9 NRC 126 (1979))
- Commission powers, show cause, early site suitability; LBP-79-23, 10 NRC 222 (1979)
- discriminatory labor practices, inapplicability of Civil Rights Act in NRC licensing; ALAB-573, 10 NRC 783 (1979)
- search and seizure, warrant, regulated industries, consent; ALAB-567, 10 NRC 540 (1979)
- United Mine Workers v. Pennington, 381 U.S. 657, 669-70 (1965)
- antitrust defense, state anti-pirating law, lobbying; ALAB-560, 10 NRC 308 (1979)
- United Shoe Machinery Corp. v. United States, 258 U.S. 451 (1922)
- antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
- antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 571 (1979)
- antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 363 (1979)
- United States Steel Corp. v. Train 556 F.2d 822, 835 (7th Cir. 1977)
- FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 785 (1979)

LEGAL CITATIONS INDEX

CASES

- United States v. Aluminum Co. of America, 148 F.2d 416, 429 (2d Cir. 1945)
antitrust, monopolization, de minimus argument, "historical accident"; ALAB-560, 10 NRC 378 (1979)
- United States v. Aluminum Co. of America, 148 F.2d 416, 431-32 (2d Cir. 1945)
antitrust, monopolization, acquisitions; ALAB-560, 10 NRC 381 (1979)
- United States v. Aluminum Co. of America, 377 U.S. 271, 279 (1964)
antitrust, monopolization, de minimus argument; ALAB-560, 10 NRC 376 (1979)
- United States v. American Telephone & Telegraph Co., 461 F. Supp. 1314, 1328 (D.D.C. 1978)
antitrust, immunity, federal regulatory statutes; ALAB-560, 10 NRC 324 (1979)
- United States v. Arnold, Schwinn and Co., 388 U.S. 365 (1967)
antitrust, restraints on resale of electricity; ALAB-560, 10 NRC 311 (1979)
- United States v. Associated Press, 326 U.S. 1 (1945)
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 329 (1979)
- United States v. Biswell, 406 U.S. 311 (1972)
search and seizure, warrant, regulated industries, consent; ALAB-567, 10 NRC 539 (1979)
- United States v. Braverman, 373 U.S. 405, 408 (1963)
antitrust violations, license conditions, scope of NRC authority, statutory construction; ALAB-560, 10 NRC 292 (1979)
- United States v. Consolidated Laundries Corp., 291 F.2d 563, 574-75 (2d Cir. 1961)
antitrust, territorial limitations, horizontal, per se rule allocation of customers; ALAB-560, 10 NRC 314 (1979)
- United States v. E.I. DuPont DeNemours and Co., 351 U.S. 377 (1956)
antitrust, monopolization, de minimus argument; ALAB-560, 10 NRC 376 (1979)
- United States v. E.I. duPont de Nemours & Co., 353 U.S. 586, 607-08 (1957)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- United States v. Freight Association, 166 U.S. 290, 41 L Ed 1007, 17 S Ct 540
antitrust, immunity, federal regulatory statutes; ALAB-560, 10 NRC 324 (1979)
- United States v. General Motors Corp. 384 US 127, 16 L Ed 2d 415, 86 S Ct 1321 (1966)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 315 (1979)
- United States v. General Motors Corp., 384 U.S. 127, 146 (1966)
antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 342 (1979)
- United States v. Grand River Dam Authority, 363 U.S. 229 (1960)
Indian tribe immunity from suit, joinder as party; ALAB-573, 10 NRC 780 (1979)
- United States v. Griffith, 334 U.S. 100, 105-06 (1948)
antitrust, monopolization, acquisitions; ALAB-560, 10 NRC 381 (1979)
- United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966)
antitrust, monopolization, de minimus argument, superior acumen; ALAB-560, 10 NRC 377 (1979)
- United States v. Grinnell Corp. 384 U.S. 563, 577 (1966)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- United States v. Haldeman, 559 F.2d 31, 78 (D.C. Cir. 1976), (in banc) certiorari denied, 431 U.S. 933 (1977)
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 806 (1979)
- United States v. International Business Machines Corp., CCH 1975-2 Trade Cases 60,495 (S.D.N.Y. 1975)
antitrust, monopolization, de minimus argument, scheme; ALAB-560, 10 NRC 376 (1979)
- United States v. Joint Traffic Assn., 171 US 505, 573-577, 43 L Ed 259, 19 S Ct 25
antitrust, immunity, federal regulatory statutes; ALAB-560, 10 NRC 324 (1979)
- United States v. Kagama, 118 U.S. 375, 384 (1886)
intervention, tardiness, Indian tribe, federal government trust; ALAB-552, 10 NRC 8 (1979)
- United States v. National Lead Co. 332 US 319, 91 L ed 2077, 67 S Ct 1634
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 315 (1979)
- United States v. Philadelphia Nat'l Bank, 374 U.S. 321, 350-51 (1963)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 285 (1979)
- United States v. Philadelphia National Bank, 374 U.S. 321, 365 n. 42 (1963)
antitrust, monopolization, de minimus argument; ALAB-560, 10 NRC 376 (1979)
- United States v. Radio Corporation of America, 358 U.S. 334, 350-51 (1959)
antitrust laws, applicability to regulated industries; ALAB-560, 10 NRC 285 (1979)
- United States v. Radio Corporation of America, 358 U.S. 334, 350-52 (1959)
antitrust, "public interest," violations; ALAB-560, 10 NRC 283 (1979)

LEGAL CITATIONS INDEX

CASES

- United States v. Radio Corporation of America, 358, U.S. 334, 347-52 (1959)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 568 (1979)
- United States v. Sealy, 388, U.S. 350 (1967)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 315 (1979)
- United States v. Steel Tank Barge H 1651, 272 F. Supp. 658, 659 fn. 1 (E.D.La. 1967) citing Kelley, "Audi Alteram Partem," 9 Natural Law Forum 103 (1964)
contentions, motions to dismiss, oral argument; ALAB-565, 10 NRC 524 (1979)
- United States v. Students Challenging Regulatory Agency Procedures (SCRAP), 412 U.S. 669, 689 fn. 14 (1973)
intervention, standing of organization interest of one member, magnitude of interest; LBP-79-20, 10 NRC 115 (1979)
- United States v. Terminal Railroad Association, 224 U.S. 383 (1912)
antitrust, monopoly, refusal to wheel power; ALAB-560, 10 NRC 329 (1979)
- United States v. Topco Associates, 405 U.S. 596 (1972)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 314, 317 (1979)
- United States v. United Shoe Machinery Corp., 110 F. Supp. 295, 344-45 (D. Mass. 1953), aff'd, 347 U.S. 521 (1954)
antitrust, monopolization, de minimus argument, superior acumen; ALAB-560, 10 NRC 377 (1979)
- United States v. United State Gypsum Co., 340 U.S. 76, 88-9 (1950)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)
- United States v. United States Machinery Corp., 110 F. Supp. 295, 346 (D. Mass. 1953), aff'd per curiam, 347 U.S. 521 (1954)
antitrust, monopolization, acquisitions; ALAB-560, 10 NRC 391 (1979)
- United States v. Washington, 384 F. Supp. 312 (W.D. Wash. 1974), affirmed, 520 F.2d 676 (9th Cir. 1975), certiorari denied, 423 U.S. 1086 (1976)
intervention, tardiness, Indian tribe, fishing rights litigation as excuse; ALAB-552, 10 NRC 4, 6 (1979)
- United States v. White, 454 F.2d 435, 439 (7th Cir. 1971)
FES, circulation, evidence, LWA, appeal, recirculate; ALAB-573, 10 NRC 786 (1979)
- Utah Pie Co. v. Continental Baking Co., 386 U.S. 685, 694 (1967)
antitrust, price discrimination, FPC regulations; ALAB-560, 10 NRC 383 (1979)
- Velsicol Chemical Corp. v. EPA, 431 U.S. 925 (1977)
seismic criteria, design, burden of proof; ALAB-561, 10 NRC 412 (1979)
- Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-214, 7 AEC 1001 (1974)
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10 NRC 229 (1979)
- Vermont Yankee Nuclear Power Corp. (Vermont Yankee Station) ALAB-179, 7 AEC 159, 171-76 (1974), reversed on other grounds sub nom
need for power, alternatives, relevance of cost; ALAB-573, 10 NRC 805 (1979)
- Vermont Yankee Nuclear Power Corp. (Vermont Yankee Station), ALAB-138, 6 AEC 520, 523 (1973)
water supply, permit, LWA, motion to reopen denied; ALAB-573, 10 NRC 804 (1979)
- Vermont Yankee Nuclear Power Corp. (Vermont Yankee Station), ALAB-194, 7 AEC 431, 445 (1974)
seismic criteria, acceleration, binding regulations; ALAB-561, 10 NRC 433 (1979)
- Vermont Yankee Nuclear Power Corp. (Vermont Yankee Station), CLI-74-40, 8 AEC 809, 881-14 (1974)
Class 9 accident, compliance with cooling system criteria, offshore plant; CLI-79-9, 10 NRC 262 (1979)
- Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519 (1978)
NEPA review, LWA, rule of reason; ALAB-573, 10 NRC 779, 781 (1979)
need for power, alternatives, relevance of cost; ALAB-573, 10 NRC 805 (1979)
- Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 526-27 (1978)
analysis of NRC licensing procedure, early site suitability; LBP-79-23, 10 NRC 224 (1979)
- Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 550 (1978)
need for power, alternatives, relevance of cost, inadequacy of briefs; ALAB-573, 10 NRC 806 (1979)
- Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553-54 (1978)
Indian tribe immunity from suit, joinder as party; ALAB-573, 10 NRC 781 (1979)

LEGAL CITATIONS INDEX

CASES

- NEPA, international implications, foreign mining, radon release, administrative process; ALAB-562, 10 NRC 447 (1979)
- Vermont Yankee Nuclear Power Corp. v. NRDC, 435 US 519, 556 (1978)
advisory committee, construction permit, design change, no need for amendment; CLI-79-11, 10 NRC 739 (1979)
- Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358 (1973)
reopening license proceeding, previously decided issues, 2.206 petition denied; DD-79-10, 10 NRC 131 (1979)
- Vermont Yankee Nuclear Power Corporation (Vermont Yankee), ALAB-56, 4 AEC 930 (1972)
emergency response issue precluded by rulemaking; LBP-79-33, 10 NRC 823 (1979)
- Vermont Yankee Nuclear Power Corporation v. NRDC 435 US 519, 486, 55 L Ed 2d 460 (1978)
construction permit, management capability, applicant's burden; LBP-79-19, 10 NRC 96 (1979)
- Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358 (1973)
petition, 2.206, adequacy, nexus; DD-79-21, 10 NRC 719 (1979)
- Village of Elbow Lake v. Otter Tail Power Co., 46 FPC 675, 678-79 (1971), aff'd as modified sub nom
- antitrust, power pool, refusal to deal, group boycott; ALAB-560, 10 NRC 358 (1979)
- Virginia Electric Power Company (North Anna Nuclear Power Stations, Units 1 and 2), ALAB-491, (8 NRC 245, (1948))
unresolved safety issues, TMI restart proceedings; LBP-79-34, 10 NRC 838 81979)
- Virginia Electric Power Company (North Anna Power Station, Units 1 and 2), ALAB-146, 6 AEC 631, 634 (1973)
intervention, standing, geographic proximity; LBP-79-21, 10 NRC 189 (1979)
- Virginia Electric and Power Co. (North Anna Nuclear Power Station, Units 1 and 2), ALAB-551, (9 NRC 704 (June 26, 1979))
scheduling of hearings on aircraft crash probability and radon release; ALAB-570, 10 NRC 684 (1979)
- Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, (9 NRC 54 (1979))
intervention, standing, geographic proximity, particularity; LBP-79-21, 10 NRC 189 (1979)
intervention, standing, interest, particularity of petition; LBP-79-20, 10 NRC 116 (1979)
- Virginia Electric and Power Company (North Anna Power Station) ALAB-256, (1 NRC 10, 17 n.18).
construction permit, management capability, applicant's burden; LBP-79-19, 10 NRC 96 (1979)
- Virginia Electric and Power Company (North Anna Power Station, Units 1 and 2), (4 NRC 480, 486 (1976)), aff'd. sub nom
applicants' submissions to NRC, accuracy; CLI-79-11, 10 NRC 736 (1979)
- Virginia Electric and Power Company (North Anna Station, Units 1 and 2), ALAB-522, (9 NRC 54, 56 (1979))
intervention, standing of organization, interest of one member, geographic proximity; LBP-79-20, 10 NRC 114 (1979)
- Virginia Electric and Power Company (North Anna Station, Units 1-4, ALAB-256, (1 NRC 10, 14 (1975)), affirmed sub nom
site suitability, LWA, capable faults; ALAB-573, 10 NRC 793 (1979)
- Virginia Electric and Power Company (North Anna Units 1 and 2), ALAB-491, (8 NRC 245, 250 fn. 12 (1978))
radon release, consolidated proceedings; ALAB-569, 10 NRC 562 (1979)
- Virginia Electric and Power Company (North Anna Units 1, 2, 3, and 4), ALAB-256, (1 NRC 10, 13-14 (1975))
seismic criteria, design burden of proof, definite guidelines of regs; ALAB-561, 10 NRC 412 (1979)
- Virginia Electric and Power Company (Surry Power Station, Units 1 and 2), DD-79-1, (9 NRC 199 (Feb. 1, 1979)) and DD-79-3, (9 NRC 577 (Apr. 4, 1979))
denials of similar 2.206 petitions; DD-79-19, 10 NRC 628 (1979)
- Warm Springs Dam Task Force v. Gribble, 431 F. Supp. 320, 323 (N.D. Cal. 1977), stay pending appeal denied, 565 F.2d 549 (9th Cir. 1977)
NEPA record, reopen, 2.206 petition denied; DD-79-18, 10 NRC 621 (1979)
- Washington Public Power Supply System (Hanford No. 2 Plant), ALAB-113, 6 AEC 251 (1973)
FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 783 (1979)

LEGAL CITATIONS INDEX

CASES

- West Texas Utilities v. Texas Electric Service Company, No. CA 3-76-0633-F (N.D. Tex.)
antitrust proceedings, res judicata effect of federal court; LBP-79-27, 10 NRC 564 (1979)
- Westinghouse Electric Corp. v. United States, 598 F.2d 759, 774-75 (3rd Cir. 1979)
NEPA, international implications, effect of Executive Order, radon release; ALAB-562, 10 NRC 446 (1979)
- Westinghouse Electric Corp., CLI-76-9, (3 NRC 739 (1976))
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 445 (1979)
- White Motor Co. v. United States, 372 U.S. 253 (1963)
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 314 (1979)
- White Motor Co. v. United States, 372 US 253, 263 L ed 2d 738, 746, 83 S Ct 696
antitrust, territorial limitations, horizontal, per se rule; ALAB-560, 10 NRC 316 (1979)
- Wilderness Society v. Morton, 463 F.2d 1261, 1262 (D.C. Cir. 1972)
NEPA, international implications, foreign mining, radon release; ALAB-562, 10 NRC 446 (1979)
- Wilderness Society v. Morton, 479 F.2d 842, 855-56 (D.C. Cir. in banc), certiorari denied, 411 U.S. 917 (1973)
antitrust violations, license conditions, scope of NRC authority, statutory construction; ALAB-560, 10 NRC 292 (1979)
- Winters v. Lavine, 574 F.2d 46, 66-69 (2d Cir. 1978)
antitrust, territorial agreements; ALAB-560, 10 NRC 371 (1979)
- Wisconsin Electric Power Company (Koshkonong Plant, Units 1 and 2) CLI-74-45, 8 AEC 928, 930 (1974)
water supply, permit, LWA; ALAB-573, 10 NRC 801 (1979)
- Wisconsin Electric Power Company (Point Beach Nuclear Plant Unit 2), ALAB-137, 6 AEC 491, 502 (1973)
Class 9 accident, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 590 (1979)
- Wisconsin Power and Light Company v. Public Service Commission, 172 N.W., 2d 639 (Wis. 1969)
antitrust, defense, state anti-pirating law; ALAB-560, 10 NRC 305 (1979)
- Wisconsin Public Service Corp., et al., Kewaunee Nuclear Power Plant, LBP-78-24, (8 NRC 78, 84 July 12, 1978)
intervention, tardiness, extent of representation of petitioner's interest where no hearing without intervention; LBP-79-21, 10 NRC 195 (1979)
- Withrow v. Larkin, 421 U.S. 35, 56 (1975)
administrative hearings, participation by agency personnel; ALAB-567, 10 NRC 537 (1979)
- Yarn Processing Patent Validity Litigation, 498 F.2d 271, 278-279 (5th Cir. 1974)
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 569 (1979)
- Yarn Processing Patent Validity Litigation, 498 F.2d 271, 278-79 (5th Cir. 1974)
antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 571 (1979)
- Yarn Processing Patent Validity Litigation, 498 F.2d 271, 278-79 (5th Cir. 1974)
antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 363 (1979)
- Zuber v. Allen, 396 U.S. 168, 183-84 (1969)
antitrust violations, license conditions, scope of NRC authority; ALAB-560, 10 NRC 292 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- 10 CFR 1
notice of hearing, construction permit conditioned upon showing of management capability at operating license stage; LBP-79-19, 10 NRC 98 (1979)
- 10 CFR 1.40(o)
radiation protection standards, petition for rulemaking denied; DPRM-79-5, 10 NRC 515 (1979)
- 10 CFR 2
hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979) RLC 10 CFR 2(F)
early site suitability review; LBP-79-23, 10 NRC 221 (1979)
- 10 CFR 2.101(a)
construction permit, site identification, show cause, 2.206 petition denied; DD-79-13, 10 NRC 251 (1979)
- 10 CFR 2.101(a-1)
early site suitability review; LBP-79-23, 10 NRC 221 (1979)
- 10 CFR 2.104
notice of hearing, construction permit conditioned upon showing of management capability at operating license stage; LBP-79-19, 10 NRC 98 (1979)
- 10 CFR 2.105
operating license procedure, 2.206 petition to suspend construction permit denied; DD-79-21, 10 NRC 719 (1979)
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 629 (1979)
- 10 CFR 2.200 et. seq.
show cause orders, appropriateness, early site suitability, failure to meet standards of conduct; LBP-79-23, 10 NRC 222 (1979)
- 10 CFR 2.200-2.204, 2.206
antitrust, Director's power to modify license conditions; ALAB-560, 10 NRC 294 (1979)
- 10 CFR 2.202
construction permit, revocation, 2.206 petition denied; DD-79-17, 10 NRC 615 (1979)
show cause orders, appropriateness, early site suitability, failure to meet standards of conduct, hearing; LBP-79-23, 10 NRC 222 (1979)
- 10 CFR 2.205
civil penalties, evidentiary hearing, materials license; ALAB-567, 10 NRC 535 (1979)
civil penalty, notice of charges; ALAB-567, 10 NRC 549 (1979)
- 10 CFR 2.205(d)(e)
civil penalties, evidentiary hearing, materials license; ALAB-567, 10 NRC 536 (1979)
- 10 CFR 2.205(f)
civil penalties, evidentiary hearing, fact finder; ALAB-567, 10 NRC 536 (1979)
- 10 CFR 2.206
appropriate relief, reopen construction permit proceeding; CLI-79-10, 10 NRC 676 (1979)
blasting near facility, investigation, petition granted in part; DD-79-16, 10 NRC 609 (1979)
civil penalty, new fuel shipment, petition denied; DD-79-15, 10 NRC 511 (1979)
construction permit, Show cause, petition denied; DD-79-13, 10 NRC 251 (1979)
construction permit, suspension, concrete work, 2.206 petition denied; DD-79-11, 10 NRC 136 (1979)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 704 (1979)
construction permit, suspension, petition denied; DD-79-21, 10 NRC 718 (1979)
need for power, reconsideration, denied; DD-79-18, 10 NRC 617 (1979)
operating license, suspension, show cause, denied; DD-79-19, 10 NRC 628 (1979)
plant shutdown, emergency relief, 2.206 petition denied in part; DD-79-14, 10 NRC 509 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- procedure, informal pleading, ex parte communications, 2.206 petition denied; DD-79-22, 10 NRC 729 (1979)
- prohibiting resumed operation, steam generator degradation, petition denied; DD-79-22, 10 NRC 729 (1979)
- show cause, construction permit revocation, denied; DD-79-17, 10 NRC 613 (1979)
- show-cause, open construction permit, 2.206 petition denied; DD-79-10, 10 NRC 130 (1979)
- 10 CFR 2.206(a)
petition, basis for request, facts; DD-79-21, 10 NRC 719 (1979)
- petition, facts, particularity; DD-79-17, 10 NRC 614 (1979)
- 10 CFR 2.603(b)(1)
early site suitability review, sufficiency of application; LBP-79-23, 10 NRC 223 (1979)
- 10 CFR 2.603(c)
early site suitability review, sufficiency of application; LBP-79-23, 10 NRC 223 (1979)
- 10 CFR 2.605
early site suitability, appropriate procedure to ask Commission to decline early hearing; LBP-79-23, 10 NRC 223 (1979)
- 10 CFR 2.606
early site suitability review, construction permit, NEPA review; LBP-79-23, 10 NRC 223 (1979)
- 10 CFR 2.704(a)
appeal, Staff, denial of civil penalty, "presiding officer"; ALAB-567, 10 NRC 547 (1979)
- 10 CFR 2.704(c)
disqualification, reference to ALAB; ALAB-556, 10 NRC 31 (1979)
- 10 CFR 2.707
voluntary default, withdrawal of intervenor, security plan contention; LBP-79-26, 10 NRC 507 (1979)
- 10 CFR 2.710
contentions, tardiness, good cause, newly-acquired information, insulation material; LBP-79-22, 10 NRC 214 (1979)
- 10 CFR 2.711
discovery, burden, time requirements; LBP-79-31, 10 NRC 606 (1979)
- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.711(a)
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 452 (1979)
- prehearing, conference, contentions, scheduling, altering time periods; ALAB-565, 10 NRC 523 (1979)
- 10 CFR 2.713
show cause orders, appropriateness, early site suitability, failure to meet standards of conduct; LBP-79-23, 10 NRC 223 (1979)
- 10 CFR 2.713(a)
intervention, Congressman, representation by staff member; LBP-79-28, 11 NRC 579 (1980)
- 10 CFR 2.714
operating license procedure, 2.206 petition to suspend construction permit denied; DD-79-21, 10 NRC 719 (1979)
- 10 CFR 2.714(2)
intervention, standing, TMI restart proceedings; LBP-79-34, 10 NRC 853 8(1979)
- 10 CFR 2.714(a)
contentions, tardiness, good cause, newly-acquired information, insulation material; LBP-79-22, 10 NRC 214, 216 (1979)
- intervention, adequacy of petition, TMI restart proceedings; LBP-79-34, 10 NRC 850 (1979)
- intervention, tardiness, Indian tribe; ALAB-552, 10 NRC 3, 4, 5 (1979)
- intervention, tardiness, factors, Indian tribe; ALAB-556, 10 NRC 34 (1979)
- intervention, tardiness, factors, intervention granted; LBP-79-21, 10 NRC 184, 185 (1979)
- intervention, tardiness, good cause, Indian tribe; ALAB-559, 10 NRC 163, 166, 169, 172, 173 (1979)
- 10 CFR 2.714(a)(1)
intervention, tardiness, factors, intervention granted; LBP-79-21, 10 NRC 188 (1979)
- 10 CFR 2.714(a)(3)
intervention, contentions, specificity, amendments; LBP-79-21, 10 NRC 188 (1979)
- 10 CFR 2.714(a)(3)(6)
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- 10 CFR 2.714(a)(3), 2.714(b)
intervention, petition, amendment; LBP-79-20, 10 NRC 117 (1979)
- 10 CFR 2.714(a)(3)(b)
supplemental petition, TMI restart proceedings; LBP-79-34, 10 NRC 854 (1979)
- 10 CFR 2.714(b)
TMI restart proceedings, ruling on numerous contentions; LBP-79-34, 10 NRC 850 (1979)
contentions, admissibility, "motion to dismiss," oral argument; ALAB-565, 10 NRC 525 (1979)
contentions, tardiness, good cause, newly-acquired information, insulation material; LBP-79-22, 10
NRC 214 (1979)
intervention, contentions, specificity; LBP-79-21, 10 NRC 188, 190, 194 (1979)
intervention, requirement of at least one valid contention; LBP-79-20, 10 NRC 112, 117 (1979)
- 10 CFR 2.714(d)
intervention, interest, tardiness, intervention granted; LBP-79-21, 10 NRC 188 (1979)
- 10 CFR 2.714(e)
intervention, standing, TMI restart proceedings; LBP-79-34, 10 NRC 853 (1979)
- 10 CFR 2.714a
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 688 (1979)
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)
- 10 CFR 2.715(C)
interested municipality, late contentions; LBP-79-22, 10 NRC 216 (1979)
- 10 CFR 2.715(c)
Pennsylvania Consumer Advocate, TMI restart proceedings; LBP-79-34, 10 NRC 850 (1979)
interested state, hearing, aircraft crashes, probability; ALAB-570, 10 NRC 681 (1979)
intervention, Congressman's participation; LBP-79-28, 11 NRC 581 (1980)
- 10 CFR 2.715a
consolidation, TMI restart proceedings; LBP-79-34, 10 NRC 856 (1979)
hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.717(b)
authority of operating license board to entertain motion to delay fuel shipment; LBP-79-24, 10
NRC 228 (1979)
- 10 CFR 2.718
antitrust proceeding, avoiding delay; ALAB-560, 10 NRC 287 (1979)
- 10 CFR 2.718(i)
interlocutory appeal, scheduling matter, dismissed, directed certification inappropriate; ALAB-564,
10 NRC 451 (1979)
interlocutory appeals, scheduling and discovery matters, dismissed, lay representative, directed
certification; ALAB-563, 10 NRC 450 (1979)
interlocutory review, directed certification denied; ALAB-572, 10 NRC 694 (1979)
- 10 CFR 2.718(i), 2.730(f)
directed certification denied, antitrust proceedings, res judicata effect of federal court decision;
LBP-79-27, 10 NRC 577 (1979)
- 10 CFR 2.718(i), 2.785(a)(1)
certification of Civil Rights question denied; ALAB-573, 10 NRC 782 (1979)
- 10 CFR 2.730(a)
service of motions, intervenor, Class 9 accident; LBP-79-29, 10 NRC 587 (1979)
- 10 CFR 2.730(b)
motion to delay fuel shipment, requirement of affidavits; LBP-79-24, 10 NRC 230 (1979)
- 10 CFR 2.730(d)
oral argument, Board discretion, contentions; ALAB-565, 10 NRC 524 (1979)
- 10 CFR 2.730(f)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 688 (1979)
interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)
interlocutory appeals, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 449
(1979)
- 10 CFR 2.732
civil penalties, evidentiary hearing, burden of proof; ALAB-567, 10 NRC 536 (1979)
construction permit, management capability, applicant's burden; LBP-79-19, 10 NRC 96 (1979)
- 10 CFR 2.733
intervention, Congressman's participation; LBP-79-28, 11 NRC 584 (1980)
- 10 CFR 2.740(c)
discovery, undue burden; LBP-79-31, 10 NRC 605 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 148 (1979)
- 10 CFR 2.740(d)
- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 148 (1979)
- 10 CFR 2.740(e)
- discovery, updating responses; LBP-79-31, 10 NRC 606 (1979)
- 10 CFR 2.740(f)(1)
- evasive objections to discovery; LBP-79-31, 10 NRC 601, 602 (1979)
- 10 CFR 2.740(f)(3), 2.744, 2.790
- discovery, burden, document room; LBP-79-31, 10 NRC 605 (1979)
- 10 CFR 2.740, 2.742
- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.740-2.742
- TMI restart proceedings; LBP-79-34, 10 NRC 857 (1979)
- 10 CFR 2.743(a)
- prepared testimony, rebuttal evidence, scheduling; ALAB-566, 10 NRC 530 (1979)
- 10 CFR 2.743(b)
- evasive objections to discovery; LBP-79-31, 10 NRC 602 (1979)
- prepared testimony, rebuttal evidence, scheduling; ALAB-566, 10 NRC 530 (1979)
- 10 CFR 2.749
- TMI restart proceedings, prehearing conference order; LBP-79-34, 10 NRC 857 (1979)
- appropriateness, improper procedure to dispose of reserved issue after hearing; ALAB-554, 10 NRC 17, 19, 20 (1979)
- contention, merits, resolved by summary disposition; LBP-79-20, 10 NRC 117 (1979)
- contentions, dismissal, required showing; LBP-79-31, 10 NRC 603 (1979)
- effluents, health effects, contention, summary disposition granted; ALAB-573, 10 NRC 787 (1979)
- explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 691 (1979)
- 10 CFR 2.749(a)
- summary disposition, time-of-filing requirement; LBP-79-25, 10 NRC 235 (1979)
- 10 CFR 2.749(b)
- summary disposition, opposing party's answer, inadequacy of mere denials; LBP-79-25, 10 NRC 238 (1979)
- 10 CFR 2.749(b)(d)
- radon release, summary disposition, record in lead case; ALAB-562, 10 NRC 441 (1979)
- 10 CFR 2.749(c)
- summary disposition, opposing party's inability to present facts by affidavit, time extension; LBP-79-25, 10 NRC 237 (1979)
- 10 CFR 2.751(a)
- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.751a
- interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)
- interlocutory appeal, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)
- prehearing conference order, restart proceeding; LBP-79-34, 10 NRC 828 (1979)
- prehearing conference, intervention contentions; ALAB-565, 10 NRC 522 (1979)
- 10 CFR 2.752
- consolidation, TMI restart proceedings voluntary plan; LBP-79-34, 10 NRC 856 (1979)
- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.752(c)
- hearing, TMI, conditions imposed on restart, psychological stress issues to be certified to Commission; CLI-79-8, 10 NRC 148 (1979)
- 10 CFR 2.757
- hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.758
- certification, health effects of low level emissions, adjudication as attack on reg; ALAB-573, 10 NRC 790 (1979)
- contention challenging regulation; LBP-79-23, 10 NRC 224 (1979)
- seismic criteria, acceleration, regulations binding on intervenors; ALAB-561, 10 NRC 433 (1979)
- 10 CFR 2.758(a)
- certification, health effects of low level emissions, adjudication as attack on reg; ALAB-573, 10 NRC 790 (1979)
- effluents, health effects, compliance with Appendix, contention challenging regulation; ALAB-573, 10 NRC 788 (1979)

LEGAL CITATIONS INDEX

REGULATIONS

- radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 814 (1979)
- 10 CFR 2.758(b)
Class 9 accident, EIS, offshore plant; CLI-79-9, 10 NRC 260 (1979)
- 10 CFR 2.760
initial decision, conditions imposed on TMI; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.760(a)
appeal, Staff, denial of civil penalty; ALAB-567, 10 NRC 548 (1979)
hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.760, 2.762, 2.785, 2.786
construction permit conditioned upon showing of management capability at operating license stage; LBP-79-19, 10 NRC 99 (1979)
- 10 CFR 2.760a
ASLB, operating license, Staff responsibility, motion to delay fuel shipment; LBP-79-24, 10 NRC 232 (1979)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 690 (1979)
licensing board, contested matters, water pollution; ALAB-569, 10 NRC 559 (1979)
- 10 CFR 2.762
appeal, Staff, denial of civil penalty; ALAB-567, 10 NRC 548 (1979)
hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.762(a)
appellate practice, brief, inadequate references to record; ALAB-573, 10 NRC 786 (1979)
- 10 CFR 2.762(a)(2)
appellate briefs, general allegations, inadequate references to record; ALAB-573, 10 NRC 805 (1979)
- 10 CFR 2.762(b)
out-of-time filing, brief of intervenor; ALAB-568, 10 NRC 556 (1979)
- 10 CFR 2.764
suspended, Class 9 accident, restart proceeding; LBP-79-34, 10 NRC 834 (1979)
- 10 CFR 2.770
hearing, TMI, conditions imposed on restart, review by Commission; CLI-79-8, 10 NRC 147 (1979)
- 10 CFR 2.780
show cause orders, appropriateness, early site suitability, failure to meet standards of conduct; LBP-79-23, 10 NRC 222 (1979)
- 10 CFR 2.780(h)
show cause orders, appropriateness, early suitability, failure to meet standards of conduct; LBP-79-23, 10 NRC 222 (1979)
- 10 CFR 2.785
referral to ALAB, emergency response issue precluded by rulemaking; LBP-79-33, 10 NRC 822 (1979)
- 10 CFR 2.785(a)
ALAB, Part 70 decisions, appeal of denied motion to delay fuel shipment; LBP-79-24, 10 NRC 232 (1979)
- 10 CFR 2.785(d)
certification, health effects of low level emissions, adjudication as attack on reg; ALAB-573, 10 NRC 790 (1979)
- 10 CFR 2.787(b)
interlocutory appeals, scheduling and discovery matters, dismissed, Appeal Panel Chairman; ALAB-563, 10 NRC 450 (1979)
- 10 CFR 2.788(e)
motion to delay fuel shipment, "stay" standards; LBP-79-24, 10 NRC 230 (1979)
- 10 CFR 2.802
radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 820 (1979)
- 10 CFR 10, App. A, III(g)
site suitability, LWA; ALAB-573, 10 NRC 795 (1979)
- 10 CFR 19.12
radiation protection standards, petition for rulemaking denied; DPRM-79-5, 10 NRC 516 (1979)
restricted area, training program, civil penalty; ALAB-567, 10 NRC 544 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- 10 CFR 19.14(b)
inspection, no absolute right to accompany inspectors; ALAB-567, 10 NRC 540 (1979)
- 10 CFR 19.15, 19.16
inspections, no absolute right to accompany inspectors; ALAB-567, 10 NRC 540 (1979)
- 10 CFR 19.3(e)
restricted area, training program, civil penalty; ALAB-567, 10 NRC 544 (1979)
- 10 CFR 20
radiation protection standards, petition for rulemaking denied; DPRM-79-5, 10 NRC 515 (1979)
radiation releases, TMI restart proceedings; LBP-79-34, 10 NRC 839 (1979)
- 10 CFR 20, 50, App. I
intervention, tardiness, factors, intervention granted; LBP-79-21, 10 NRC 188 (1979)
- 10 CFR 20.1(C)
ALARA principle, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 662 (1979)
- 10 CFR 20.1(c)
occupational exposure, intervention, tardiness, developing sound record; LBP-79-21, 10 NRC 206 (1979)
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 627 (1979)
radiation doses, intervention contention, steam generator replacement; LBP-79-20, 10 NRC 119 (1979)
- 10 CFR 20.101(a)
radiation doses, intervention contention, steam generator replacement; LBP-79-20, 10 NRC 119, 121 (1979)
- 10 CFR 20.101(c)
occupational exposure, intervention, tardiness, developing sound record; LBP-79-21, 10 NRC 208 (1979)
- 10 CFR 20.105
radiation levels, excessive, civil penalty; ALAB-567, 10 NRC 549 (1979)
steam generator repair, storage of remand parts, 2.206 petition denied; DD-79-19, 10 NRC 662 (1979)
- 10 CFR 20.201
radiation protection standards, required surveys, civil penalty; ALAB-567, 10 NRC 546 (1979)
- 10 CFR 20.202(b)(1)
detection badges, restricted area, training programs, civil penalty; ALAB-567, 10 NRC 544 (1979)
- 10 CFR 20.203
steam generator repair, storage of removed parts, 2.206 petition denied; DD-79-19, 10 NRC 662 (1979)
- 10 CFR 20.203(b)(c)
radiation area, signs, adequacy, civil penalty; ALAB-567, 10 NRC 544 (1979)
- 10 CFR 20.203(f), 20, App. C
unlabeled containers, cobalt-60, civil penalty; ALAB-567, 10 NRC 545 (1979)
- 10 CFR 20.207
licensed material, constant surveillance, civil penalty; ALAB-567, 10 NRC 550 (1979)
steam generator repair, storage of remand parts, 2.206 petition denied; DD-79-19, 10 NRC 662 (1979)
- 10 CFR 20.3(14)
radiation levels, excessive, civil penalty; ALAB-567, 10 NRC 549 (1979)
- 10 CFR 20.3(8)
licensed material, constant surveillance, civil penalty; ALAB-567, 10 NRC 551 (1979)
- 10 CFR 20.302
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 627 (1979)
- 10 CFR 20.403(b)(3)
civil penalties, failure to report incident; ALAB-567, 10 NRC 542 (1979)
- 10 CFR 30.4(d), 30.71
byproduct material, cobalt-60, civil penalties; ALAB-567, 10 NRC 534 (1979)
- 10 CFR 30.52
civil penalties, materials license, inspection; ALAB-567, 10 NRC 535 (1979)
- 10 CFR 30.52(a)
inspections, search and seizure, consent; ALAB-567, 10 NRC 539 (1979)
- 10 CFR 50, App. A
barge explosion remote probability contention dismissed; ALAB-573, 10 NRC 799 (1979)

LEGAL CITATIONS INDEX

REGULATIONS

- 10 CFR 50, App. A, 44
ultimate heat sink, adequacy, shared system; ALAB-573, 10 NRC 796 (1979)
- 10 CFR 50, App. B
construction permit, management capability, operating experience under changing regulations; LBP-79-19, 10 NRC 81 (1979)
construction permit, management capability, quality assurance program; LBP-79-19, 10 NRC 56, 58, 80 (1979)
- 10 CFR 50, App. C(IV)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 704, 711 (1979)
- 10 CFR 50, App. D
Class 9 accident, offshore plant, EIS; CLI-79-9, 10 NRC 258 (1979)
Class 9 accident, proposed reg. weight; LBP-79-29, 10 NRC 587, 590 (1979)
Class 9 accidents, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 721 (1979)
implementation of NEPA; ALAB-569, 10 NRC 558 (1979)
- 10 CFR 50, App. D(E)
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 689 (1979)
- 10 CFR 50, App. I
effluents, ALAR, light-water-cooled reactors; ALAB-573, 10 NRC 787 (1979)
monitoring releases, late contentions admitted; LBP-79-22, 10 NRC 217 (1979)
radiation, exposures no equivalent for occupational exposures, intervention contention; LBP-79-20, 10 NRC 121 (1979)
- 10 CFR 50, App. I, I
radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 810 (1979)
- 10 CFR 50, App. I
radiation releases, TMI restart proceedings; LBP-79-34, 10 NRC 839 (1979)
- 10 CFR 50, App. K
Class 9 accident, EIS, offshore plant; CLI-79-9, 10 NRC 261 (1979)
- 10 CFR 50, App. Q
early site suitability review, erroneous reliance on Part 50; LBP-79-23, 10 NRC 222 (1979)
- 10 CFR 50.10(e)
LWA, prerequisites and terms; ALAB-573, 10 NRC 778 (1979)
- 10 CFR 50.10(e)(2)
site suitability, LWA; ALAB-573, 10 NRC 792 (1979)
- 10 CFR 50.10(e)(2), 51.52(c)(1)
LWA, prerequisites and terms, environmental review; ALAB-573, 10 NRC 778 (1979)
- 10 CFR 50.33(f)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 704 (1979)
- 10 CFR 50.34(a)
construction permit, site identification, show cause, 2.206 petition denied; DD-79-13, 10 NRC 251 (1979)
radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 813 (1979)
- 10 CFR 50.34(a)(6)
construction permit, management capability, qualified staff, training; LBP-79-19, 10 NRC 47, 95 (1979)
- 10 CFR 50.34(b)(6)(7)
construction permit, management capability, operational plan, operating license stage; LBP-79-19, 10 NRC 95, 98 (1979)
- 10 CFR 50.34a
effluents, ALARA, light-water-cooled reactors; ALAB-573, 10 NRC 787 (1979)
- 10 CFR 50.35(a)
safety issues, resolution, construction permit, design change; CLI-79-11, 10 NRC 741 (1979)
- 10 CFR 50.35(b)
construction permit, design change, amendment requirement, shorter pilings, no amendment; CLI-79-11, 10 NRC 735 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- 10 CFR 50.40(b)
construction permit, management capability, technical qualifications; LBP-79-19, 10 NRC 47 (1979)
- 10 CFR 50.44
post accident generation of combustible gas, TMI restart proceedings, contention ruling deferral; LBP-79-34, 10 NRC 836 (1979)
- 10 CFR 50.46
Class 9 accident, EIS, offshore plant; CLI-79-9, 10 NRC 261 (1979)
core temperature, TMI restart proceedings, contention; LBP-79-34, 10 NRC 845 (1979)
- 10 CFR 50.54(1)
construction permit, management capability, SRO license; LBP-79-19, 10 NRC 85 (1979)
- 10 CFR 50.54(f)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 704 (1979)
- 10 CFR 50.55(e)
seismic design, blasting near facility, investigation, 2.206 petition granted in part; DD-79-16, 10 NRC 612 (1979)
- 10 CFR 50.55a
postulated seismic event, equipment integrity, findings of fact; LBP-79-26, 10 NRC 503 (1979)
- 10 CFR 50.57
explanation of sua sponte review by ALAB; ALAB-571, 10 NRC 689 (1979)
- 10 CFR 50.57(b)
hearing, TMI, conditions imposed on restart; CLI-79-8, 10 NRC 149 (1979)
- 10 CFR 50.59
license amendment, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 654 (1979)
technical specification change, steam generator, 2.206 petition denied; DD-79-19, 10 NRC 628 (1979)
- 10 CFR 50.59(a)(1) (1979)
construction permit, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 654 (1979)
- 10 CFR 50.59, 2.717(b)
TMI, licensee modifications during pendency of proceedings; CLI-79-8, 10 NRC 149 (1979)
- 10 CFR 50.82
dismantling, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 664 (1979)
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 627 (1979)
- 10 CFR 50.91
construction permit, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 654 (1979)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 710 (1979)
- 10 CFR 51
Class 9 accident, offshore plant, EIS; CLI-79-9, 10 NRC 258 (1979)
Class 9 accident, restart proceeding, restart proceeding; LBP-79-34, 10 NRC 833 (1979)
early site suitability review, construction permit, NEPA review; LBP-79-23, 10 NRC 223 (1979)
radon release, summary disposition, record in lead case; ALAB-562, 10 NRC 439 (1979)
- 10 CFR 51.20
FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 784 (1979)
radiation releases, compliance with Appendix, further litigation as attack on NRC regs, dissenting opinion; ALAB-573, 10 NRC 815 (1979)
- 10 CFR 51.20(e)
Class 9 accident, EIS, offshore plant; CLI-79-9, 10 NRC 260 (1979)
- 10 CFR 51.21
raising same issues at operating license stage, 2.206 petition denied; DD-79-18, 10 NRC 624 (1979)
- 10 CFR 51.22
raising same issues at operating license stage, 2.206 petition denied; DD-79-18, 10 NRC 624 (1979)
- 10 CFR 51.22-51.25
FES, evidence, LWA; ALAB-573, 10 NRC 785 (1979)
- 10 CFR 51.26, 51.52(b)(1)
FES, evidence, LWA; ALAB-573, 10 NRC 785 (1979)
- 10 CFR 51.5(a)(10), 51.5(b)(2)
EIS, requirement, intervention contention; LBP-79-20, 10 NRC 121 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- 10 CFR 51.5(b)(1979)
major federal action, license amendment steam generator, negative declaration; DD-79-19, 10 NRC 630, 638 (1979)
- 10 CFR 51.5(c)(1)
major federal action, license amendment steam generator, negative declaration; DD-79-19, 10 NRC 630 (1979)
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 630 (1979)
- 10 CFR 51.5(d)(4)
motion to delay, fuel shipment, unirradiated fuel, cost-benefit, cost of storage; LBP-79-24, 10 NRC 230 (1979)
- 10 CFR 51.52(b)(3)
FES, evidence, LWA, modified by Board decision; ALAB-573, 10 NRC 786 (1979)
need for power, reconsideration, denied; DD-79-18, 10 NRC 618 (1979)
- 10 CFR 51.52(b)(3), 51.26(c)
FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 785 (1979)
- 10 CFR 51.7(b)(1979)
EIA, adequacy, 2.206 petition denied; DD-79-19, 10 NRC 647 (1979)
- 10 CFR 55.20-23
licensed personnel, reexamination of TMI personnel, condition for restart; CLI-79-8, 10 NRC 144 (1979)
- 10 CFR 55.31(b)
construction permit, management capability, SRO license; LBP-79-19, 10 NRC 85 (1979)
- 10 CFR 70
fuel shipment, motion to delay denied; LBP-79-24, 10 NRC 227, 228 (1979)
- 10 CFR 70.44
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 710 (1979)
- 10 CFR 71
Appendix E, removal of rule, petition for rulemaking denied; DPRM-79-6, 10 NRC 671 (1979)
civil penalty, new fuel shipment, petition denied; DD-79-15, 10 NRC 512 (1979)
- 10 CFR 100
radiation doses, tornado missile, contentions, summary disposition granted; LBP-79-25, 10 NRC 242 (1979)
radiation releases, aircraft crashes, findings of fact; LBP-79-26, 10 NRC 462 (1979)
- 10 CFR 100, App. A
operating basis earthquake, findings of fact; LBP-79-26, 10 NRC 490 (1979)
seismic criteria, uncertainty of "risk," dissenting opinion; ALAB-561, 10 NRC 411 (1979)
- 10 CFR 100, App. A, II, III(c), IV
site suitability, LWA, seismicity; ALAB-573, 10 NRC 792 (1979)
- 10 CFR 100, App. A, V(a)(2)
seismic criteria, capable fault, acceleration findings of fact; LBP-79-26, 10 NRC 472, 490 (1979)
- 10 CFR 100.10(a)
ultimate heat sink, adequacy, shared system, size of low population zone, site suitability; ALAB-573, 10 NRC 797 (1979)
- 10 CFR 100.11(b)
ultimate heat sink, adequacy, shared system, size of low population zone; ALAB-573, 10 NRC 796
- 10 CFR 150
Part 71, Appendix E, removal of rule, petition for rulemaking denied; DPRM-79-6, 10 NRC 674 (1979)
- 10 CFR 150.20(a)
petition for rulemaking denied; DPRM-79-7, 10 NRC 867 (1979)
- 10 CFR 150.20(b)(3)
petition for rulemaking denied; DPRM-79-7, 10 NRC 867 (1979)
- 29 CFR 1910.145(a), (b), and (c)
radiation protection standards, petition for rulemaking denied, consistency with OSHA; DPRM-79-5, 10 NRC 516 (1979)
- 40 CFR 123.16(b)
EPA reg, FWPCA, state certification, waiver; ALAB-573, 10 NRC 785 (1979)

LEGAL CITATIONS INDEX
REGULATIONS

- 40 CFR 1500 6(d)(1978)
Council on Environmental Quality, "recommendation" regs not binding on NRC; DD-79-19, 10
NRC 641 (1979)
- 40 CFR 1506.12 (1979)
Council on Environmental Quality "recommendation" regs not binding on NRC; DD-79-19, 10
NRC 642 (1979)
- Council on Environmental Quality "recommendation" regs not binding on NRC; DD-79-19, 10
NRC 642 (1979)

LEGAL CITATIONS INDEX

STATUTES

U.S.C. 203, 205
intervention, prohibition, Congressman; LBP-79-28, 10 NRC 579 (1979)
Discrimination in Employment Act of 1967 VII
applicability in NRC licensing; ALAB-573, 10 NRC 783 (1979)
Atomic Energy Act 105c
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 570 (1979)
Atomic Energy Act 105c(6), 42 U.S.C. 2135(c)(6)
antitrust, violations, remedial license conditions; ALAB-560, 10 NRC 272, 278 (1979)
Atomic Energy Act 105c(8), 42 U.S.C. 2135(c)(8)
antitrust, violations, participation by Attorney General; ALAB-560, 10 NRC 272 (1979)
Atomic Energy Act 105c, 42 U.S.C. 2135(c)
antitrust, violations, remedial license conditions, NRC power; ALAB-560, 10 NRC 291, 293 (1979)
Atomic Energy Act 11(e), 42 U.S.C. 2014(e)
byproduct material, cobalt-60, civil penalties; ALAB-567, 10 NRC 534 (1979)
Atomic Energy Act 161(o), 42 U.S.C. 2201(o)
civil penalties, materials license, inspections; ALAB-567, 10 NRC 535 (1979)
Atomic Energy Act 182, 185, 189
construction permit, design change, shorter pilings, no need for amendment; CLI-79-11, 10 NRC 752 (1979)
Atomic Energy Act 189a
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 710 (1979)
Atomic Energy Act 189a, 42 U.S.C. 2239(a)
intervention, extreme tardiness, importance of Indian's fishing rights, dissenting opinion; ALAB-559, 10 NRC 177 (1979)
intervention, extreme tardiness, importance of Indian's fishing rights, dissenting opinion; ALAB-559, 10 NRC 177 (1979)
intervention, extreme tardiness, intervention denied to Indian tribe; ALAB-559, 10 NRC 173 (1979)
intervention, standing, interest affected by proceeding; LBP-79-20, 10 NRC 112 (1979)
Atomic Energy Act 189a, 42 U.S.C. 2239(a), 2.714(a)
intervention, Congressman's participation; LBP-79-28, 11 NRC 581 (1980)
Atomic Energy Act 234
byproduct material, cobalt-60, civil penalties; ALAB-567, 10 NRC 535, 541 (1979)
Atomic Energy Act Act 104c(1)(5), 42 U.S.C. 2135c(1)(5)
antitrust statutes incorporated by reference; ALAB-560, 10 NRC 272 (1979)
Atomic Energy Act Act 105a, 42 U.S.C. Section 2135(a)
antitrust statutes incorporated by reference; ALAB-560, 10 NRC 277 (1979)
Atomic Energy Act of 1954 105a, 42 U.S.C. 2135(a)
implications of federal court decision, discretionary antitrust proceeding; CLI-79-12, 10 NRC 768 (1979)
Atomic Energy Act of 1954 161, Chapters 6, 7, 8
Agreement states, materials licenses, petition for rulemaking denied; DPRM-79-7, 10 NRC 868 (1979)
Atomic Energy Act of 1954 182(a), as amended, 42 U.S.C. 2232(a)
construction permit, suspension, financial qualification, 2.206 petition denied; DD-79-20, 10 NRC 704 (1979)
Atomic Energy Act of 1954 189, 42 U.S.C. 2239
license amendment, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 655 (1979)

LEGAL CITATIONS INDEX
STATUTES

LEGAL CITATIONS INDEX

STATUTES

- Atomic Energy Act of 1954 189a
hearing, 2.206 procedure not a "proceeding"; DD-79-22, 10 NRC 731 (1979)
- Atomic Energy Act of 1954 274b
Agreement states, materials licenses, petition for rulemaking denied; DPRM-79-7, 10 NRC 868 (1979)
- Atomic Energy Act of 1954 81 42 U.S.C. 2111
civil penalties, materials license, search and seizure; ALAB-567, 10 NRC 535 (1979)
- Atomic Energy Act of 1954, 42 U.S.C. 2135(c)
antitrust proceeding, remedial license conditions; ALAB-560, 10 NRC 270 (1979)
- Civil Rights Act of 1964, VII
inapplicability in NRC licensing; ALAB-573, 10 NRC 782 (1979)
- Endangered Species Act 7(a), 16 U.S.C. 1536(a)
NRC, construction permit, conditioned on Interior approval, forbidden by Act; ALAB-554, 10 NRC 16 (1979)
- Equal Pay Act of 1963 VII
inapplicability in NRC licensing; ALAB-573, 10 NRC 783 (1979)
- FTC Act 5
antitrust proceedings, res judicata effect of federal court decision, identity of issues; LBP-79-27, 10 NRC 571 (1979)
- Federal Register Act 44 U.S.C. 1508
intervention, tardiness, legal notice; LBP-79-21, 10 NRC 192 (1979)
- Federal Trade Commission Act 5, 15 U.S.C. 45
antitrust, allegations in instant case; ALAB-560, 10 NRC 277 (1979)
- Federal Water Pollution Control Act 301, 402, 42 U.S.C. 1311, 1342
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 628 (1979)
- Federal Water Pollution Control Act 33 U.S.C. 1251(f)
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 560 (1979)
- Federal Water Pollution Control Act 401, 33 U.S.C. 1341
state certification, LWA, waiver; ALAB-573, 10 NRC 783 (1979)
- Federal Water Pollution Control Act 401, 33 U.S.C. 1341 (1978)
license amendment, state certification, 2.206 petition denied; DD-79-19, 10 NRC 650 (1979)
- Federal Water Pollution Control Act 401, 42 U.S.C. 1341
operating license, suspension, show cause, 2.206 petition denied; DD-79-19, 10 NRC 628 (1979)
- Federal Water Pollution Control Act 402
intervenor's contentions, inadmissible where EPA permit granted; LBP-79-21, 10 NRC 186 (1979)
- Federal Water Pollution Control Act Amendments of 1972 511(c)(2)
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 560 (1979)
- Federal Water Pollution Control Act, 33 U.S.C. 1326
thermal discharge, exemption; ALAB-569, 10 NRC 559 (1979)
- National Environmental Policy Act 102(2)(E), 102(2)(C)
NEPA review, alternatives, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 647 (1979)
- National Environmental Policy Act 102(c)
major federal action, license amendment, steam generator; DD-79-19, 10 NRC 629, 639 (1979)
- National Environmental Policy Act 42 U.S.C. 4332(2)(c) (1970)
major federal action, license amendment, steam generator; DD-79-19, 10 NRC 630 (1979)
- National Environmental Policy Act 511(c)(2)
water pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 560 (1979)
- National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 et seq
LWA, environmental phase of licensing proceedings; ALAB-573, 10 NRC 777 (1979)
- National Environmental Policy Act of 1969 102(2)
early site suitability, construction permit, NEPA review; LBP-79-23, 10 NRC 223 (1979)
- Robinson-Patman Act 2(b), 15 U.S.C. 13(b)
antitrust, wholesale rates, price squeeze; ALAB-560, 10 NRC 382 (1979)
- Sherman Act 1, 15 U.S.C. 1
antitrust proceedings, res judicata effect of federal court decision; LBP-79-27, 10 NRC 565 (1979)
antitrust, allegations in instant case; ALAB-560, 10 NRC 277, 313 (1979)
- Sherman Act 2, 15 U.S.C. 2
antitrust, allegations in instant case; ALAB-560, 10 NRC 277, 278, 306 (1979)

SUBJECT INDEX

ACCIDENT

- Class 9, EIS, offshore plant; CLI-79-9, 10 NRC 257 (1979)
- Class 9, NEPA review, LWA, staff to refer question to Commission; ALAB-573, 10 NRC 775 (1979)
- Class 9, NEPA review, reliance on Proposed Annex; LBP-79-29, 10 NRC 586 (1979)
- Class 9, TMI restart proceedings; LBP-79-34, 10 NRC 828 (1978)

AIRCRAFT

- accidents, operating license, findings of fact; LBP-79-26, 10 NRC 453 (1979)

ALTERNATE SITES

- cost-benefit inquiry, cooling towers, issue mooted by Circuit Court decision; ALAB-557, 10 NRC 153 (1979)

ANTITRUST

- defense, state statutes, refusal to wheel power; ALAB-560, 10 NRC 265 (1979)
- license conditions, scope of NRC authority; ALAB-560, 10 NRC 265 (1979)
- prices, wholesale rates, price squeeze; ALAB-560, 10 NRC 265 (1979)
- proceedings, 105a, implications of federal court decision; CLI-79-12, 10 NRC 767 (1979)
- res judicata, effect of federal court decision; LBP-79-27, 10 NRC 563 (1979)
- restraints on resale, rule of reason; ALAB-560, 10 NRC 265 (1979)
- violations, applicability of antitrust laws, "public interest" standard rejected; ALAB-560, 10 NRC 265 (1979)

APPEALS

- briefs, general allegations, inadequate references to record; ALAB-573, 10 NRC 775 (1979)
- interlocutory, directed certification denied on radon release, seismic issues, discovery; ALAB-572, 10 NRC 693 (1973)
- interlocutory, scheduling and discovery matters, dismissed; ALAB-563, 10 NRC 449 (1979)
- interlocutory, scheduling matter, dismissed; ALAB-564, 10 NRC 451 (1979)
- right, staff, denial of civil penalty; ALAB-567, 10 NRC 533 (1979)
- sua sponte review, explanatory memorandum; ALAB-571, 10 NRC 687 (1979)

ATOMIC SAFETY & LICENSING APPEAL BOARD

- referral, emergency response litigation precluded by rulemaking; LBP-79-33, 10 NRC 821 (1979)

ATOMIC SAFETY & LICENSING BOARD

- jurisdiction, operating license, motion to delay fuel shipment; LBP-79-24, 10 NRC 226 (1979)

CERTIFICATION

- low level emissions, adjudication as attack on regulation; ALAB-573, 10 NRC 775 (1979)

CIVIL PENALTIES

- hearing, role of Director of Inspection & Enforcement; ALAB-567, 10 NRC 533 (1979)

COLLATERAL ESTOPPEL

- antitrust proceedings, effect of federal court decision; LBP-79-27, 10 NRC 563 (1979)
- antitrust, collateral estoppel effect of FPC proceeding; ALAB-560, 10 NRC 265 (1979)

CONSOLIDATION

- voluntary plan, TMI restart proceedings; LBP-79-34, 10 NRC 828 (1978)

CONSTRUCTION PERMITS

- amendment, design change, shorter pilings, no need for amendment; CLI-79-11, 10 NRC 733 (1979)
- management capability, permit conditioned upon showing of management capability of operating license stage; LBP-79-19, 10 NRC 37 (1979)

CONTENTIONS

- admissibility, "motion to dismiss," requirement of oral argument; ALAB-565, 10 NRC 521 (1979)
- specificity, pro se representation; LBP-79-20, 10 NRC 108 (1979)
- supplements, tardiness, balancing factors, supplements allowed; LBP-79-21, 10 NRC 183 (1979)

SUBJECT INDEX

DENIAL OF PETITION FOR RULEMAKING

materials, Agreement States, petition for rulemaking denied; DPRM-79-7, 10 NRC 865 (1979)
packaging, quality assurance criteria, Part 71, Appendix E, removal of rule, petition for rulemaking denied; DPRM-79-6, 10 NRC 667 (1979)
posting, consistency with OSHA, petition for rulemaking denied; DPRM-79-5, 10 NRC 515 (1979)
review board, industry members, petition for rulemaking denied; DPRM-79-4, 10 NRC 253 (1979)

DIRECTOR OF INSPECTION & ENFORCEMENT

role, evidentiary hearing, civil penalties, "prosecutor"; ALAB-567, 10 NRC 533 (1979)

DIRECTORS DENIAL

Class 9, construction permit, suspension, 2.206 petition denied; DD-79-21, 10 NRC 717 (1979)
adequacy, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 625 (1979)
adequacy, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 625 (1979)
blasting near facility, investigation, 2.206 petition granted in part; DD-79-16, 10 NRC 609 (1979)
construction permit, suspension, 2.206 petition denied; DD-79-20, 10 NRC 703 (1979)
electrical equipment, plant shutdown, 2.206 petition denied; DD-79-14, 10 NRC 509 (1979)
factual basis, 2.206 petition denied; DD-79-17, 10 NRC 613 (1979)
license amendment, material alteration, steam generator repair, 2.206 petition denied; DD-79-19, 10 NRC 625 (1979)
loss of coolant accident, construction permit, suspension, 2.206 petition denied; DD-79-23, 10 NRC 859 (1979)
loss of coolant, construction permit, suspension, 2.206 petition denied; DD-79-23, 10 NRC 859 (1979)
pollution, license amendments, state certification 2.206 petition denied; DD-79-19, 10 NRC 625 (1979)
procedure, 2.206 petitions, pleadings, hearings, et parte communications; DD-79-22, 10 NRC 728 (1979)
reconsideration, 2.206 petition denied; DD-79-18, 10 NRC 617 (1979)
record, reopening, 2.206 petition denied; DD-79-18, 10 NRC 617 (1979)
reopen construction permit, 2.206 petition denied; DD-79-10, 10 NRC 129 (1979)
shipment, route selection, civil penalty, 2.206 petition denied; DD-79-15, 10 NRC 511 (1979)
site identification, unavailability of proposed site, GSA decision, show-cause, 2.206 petition denied; DD-79-13, 10 NRC 251 (1979)
steam generator repair, Commission approval not required, 2.206 petition denied; DD-79-19, 10 NRC 625 (1979)
suspension, 2.206 petition denied; DD-79-21, 10 NRC 717 (1979)
suspension, concrete work, 2.206 petition denied; DD-79-11, 10 NRC 136 (1979)
suspension, steam generator repair, 2.206 petition denied; DD-79-24, 10 NRC 862 (1979)

DISCOVERY

burden, participation in other proceedings (TMI); LBP-79-31, 10 NRC 597 (1979)
expert witnesses, thinking processes, draft testimony; LBP-79-30, 10 NRC 594 (1979)
objections, evasive, particularity; LBP-79-31, 10 NRC 597 (1979)

DISQUALIFICATION

standing, bias toward intervening Indian tribe claimed by other intervenors; ALAB-556, 10 NRC 30 (1979)

ENDANGERED SPECIES

mussels, discharge diffuser, monitoring plan agreed to by parties as revision of construction permit; ALAB-558, 10 NRC 158 (1979)
mussels, sediment, dredging to construct discharge diffuser; ALAB-554, 10 NRC 15 (1979)

ENVIRONMENTAL CONSIDERATIONS

Final Environmental Statement, modification by Board, recirculation; ALAB-573, 10 NRC 775 (1979)

LWA, standard of NEPA review, rule of reason; ALAB-573, 10 NRC 775 (1979)
foreign activities, mining, radon release; ALAB-562, 10 NRC 437 (1979)
water, pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 557 (1979)

ENVIRONMENTAL IMPACT STATEMENT

Class 9 accident, offshore plant; CLI-79-9, 10 NRC 257 (1979)
intervention, standing, failure to prepare required EIS; LBP-79-20, 10 NRC 108 (1979)

ENVIRONMENTAL PROTECTION AGENCY

water quality, responsibility of EPA, contention denied; LBP-79-20, 10 NRC 108 (1979)

SUBJECT INDEX

EVIDENCE

expert testimony, conclusions, foundation must be shown, turbine missiles; ALAB-555, 10 NRC 23 (1979)

FINANCIAL QUALIFICATIONS

construction permit, suspension, 2.206 petition denied; LBP-79-32, 10 NRC 699 (1979)

FISH

Indian tribe, fishing waters, tribe is not indispensable party, LWA; ALAB-573, 10 NRC 775 (1979)

FUEL

shipment, motion to delay, cost of storage, denied; LBP-79-24, 10 NRC 226 (1979)

FUEL POOLS

modification, materials integrity, contentions, summary disposition granted; LBP-79-25, 10 NRC 234 (1979)

HEARINGS

scheduling, aircraft crash probability and radon release; ALAB-570, 10 NRC 679 (1979)

INSPECTION

search and seizure, hours, night shift, reasonable per se; ALAB-567, 10 NRC 533 (1979)

INTERVENTION

interested municipality, late contentions admitted; LBP-79-22, 10 NRC 213 (1979)

right, Congressman's motion to intervene, representation by staff member; LBP-79-28, 10 NRC 578 (1979)

standing, organization, interest of one member, geographic proximity; LBP-79-20, 10 NRC 108 (1979)

standing, representing other parties, TMI restart proceedings; LBP-79-34, 10 NRC 828 (1978)

tardiness, good cause, Indian tribe, fishing rights litigation; ALAB-552, 10 NRC 1 (1979)

timeliness, developing sound record; LBP-79-21, 10 NRC 183 (1979)

timeliness, good cause, Indian tribe's reliance upon federal government agencies to protect interests, intervention denied; ALAB-559, 10 NRC 162 (1979)

timeliness, good cause, newly-acquired information; LBP-79-22, 10 NRC 213 (1979)

timeliness, notice, good cause, Federal Register as legal notice; LBP-79-21, 10 NRC 183 (1979)

timeliness, protecting interest, inadequacy of Staff's public interest protection; LBP-79-22, 10 NRC 213 (1979)

timeliness, protection of petitioner's interest where denial of intervention results in no hearing; LBP-79-21, 10 NRC 183 (1979)

LOW POPULATION ZONE

size, ultimate heat sink, shared or independent systems; ALAB-573, 10 NRC 775 (1979)

MANAGEMENT CAPABILITY

construction permit, analysis of: organization and training, quality control, attitude, construction experience, operating experience, overall performance; LBP-79-19, 10 NRC 37 (1979)

construction permit, conditioned upon hearing on management capability at operating license stage; LBP-79-19, 10 NRC 37 (1979)

MISSILES

contentions, fuel pool modification, summary disposition granted; LBP-79-25, 10 NRC 234 (1979)

destructive overspeed, expert testimony, conclusions, foundation must be shown; ALAB-555, 10 NRC 23 (1979)

MOTIONS

reopen, change in material fact, "Lewis Report," motion denied; CLI-79-10, 10 NRC 675 (1979)

NEXUS

antitrust violations, rational connection, NRC regulation; ALAB-560, 10 NRC 265 (1979)

OCCUPATIONAL EXPOSURE

contentions, fuel pool modification summary disposition granted; LBP-79-25, 10 NRC 234 (1979)

training programs, civil penalties; ALAB-567, 10 NRC 533 (1979)

OPERATING LICENSES

interim operation, amended order allowing operation; LBP-79-32, 10 NRC 699 (1979)

restart proceedings, scope, not limited to suspension order, TMI; LBP-79-34, 10 NRC 828 (1978)

ORAL ARGUMENT

contentions, admissibility, "motion to dismiss"; ALAB-565, 10 NRC 521 (1979)

PROOF, BURDEN OF

rebuttal testimony, prepared testimony, scheduling; ALAB-566, 10 NRC 527 (1979)

PROTECTIVE ORDERS

grounds, affidavit, requirement of personal knowledge; ALAB-555, 10 NRC 23 (1979)

SUBJECT INDEX

RADIOACTIVE EFFLUENTS

contentions fuel pool modification, summary disposition granted; LBP-79-25, 10 NRC 234 (1979)

RADIATION DOSES

ALARA, as low as reasonably achievable, intervention contention; LBP-79-20, 10 NRC 108 (1979)

RECORD

deficiencies, summary disposition, lead case in radon release "consolidated" litigation; ALAB-562, 10 NRC 437 (1979)

RES JUDICATA

antitrust proceedings, effect of federal court decision; LBP-79-27, 10 NRC 563 (1979)

RULEMAKING

litigation, emergency response contention precluded by rulemaking; LBP-79-33, 10 NRC 821 (1979)

SEARCH & SEIZURE

warrant, materials license, civil penalties, hours, night shift reasonable per se; ALAB-567, 10 NRC 533 (1979)

SEISMIC CONSIDERATION

site, geologic siting, capable fault, findings of fact; LBP-79-26, 10 NRC 453 (1979)

SEISMIC CONSIDERATIONS

LWA, capable faults, site suitability; ALAB-573, 10 NRC 775 (1979)

acceleration, design, uncertainty of risk, dissenting opinion; ALAB-561, 10 NRC 410 (1979)

design, uncertainty of risk, dissenting opinion; ALAB-561, 10 NRC 410 (1979)

response spectra, seismic design, findings of fact; LBP-79-26, 10 NRC 453 (1979)

SEISMIC CONSIDERATIONS

acceleration, peak, findings of fact; LBP-79-26, 10 NRC 453 (1979)

SHUTDOWN

cold, short-and long-term conditions on TMI before restart; CLI-79-8, 10 NRC 141 (1979)

SITE EVALUATION

early site suitability, construction permit, requirement of full NEPA review; LBP-79-23, 10 NRC 220 (1979)

STAFF

time, extension, written testimony; ALAB-553, 10 NRC 12 (1979)

STEAM GENERATORS

intervention, standing, organization, interest of one member; LBP-79-20, 10 NRC 108 (1979)

SUMMARY DISPOSITION

answer, inadequacy of mere denial; LBP-79-25, 10 NRC 234 (1979)

appropriateness, improper procedure to dispose of reserved issue after hearing; ALAB-554, 10 NRC 15 (1979)

radon release, record "deficiencies" in "lead" case; ALAB-562, 10 NRC 437 (1979)

TESTIMONY

conflicting, licensing board choices, aircraft crashes, findings of fact; LBP-79-26, 10 NRC 453 (1979)

prepared, rebuttal evidence, scheduling; ALAB-566, 10 NRC 527 (1979)

THERMAL EFFLUENTS

contentions, fuel pool modification, summary disposition granted; LBP-79-25, 10 NRC 234 (1979)

THREE MILE ISLAND

restart proceedings, scope, not limited to suspension order, TMI; LBP-79-34, 10 NRC 828 (1978)

restart, short-and long-term conditions imposed; CLI-79-8, 10 NRC 141 (1979)

TIME, EXTENSION OF

brief, intervenor, extensive involvement of attorney; ALAB-568, 10 NRC 554 (1979)

written testimony, NRC staff, priority to TMI; ALAB-553, 10 NRC 12 (1979)

WATER

pollution, FWPCA, state certification, LWA, waiver; ALAB-573, 10 NRC 775 (1979)

pollution, thermal discharge, effect of EPA decision; ALAB-569, 10 NRC 557 (1979)

supply, adequacy, LWA, motion to reopen denied; ALAB-573, 10 NRC 775 (1979)

FACILITY INDEX

- ALLENS CREEK NUCLEAR GENERATING STATION, Unit 1; Docket 50-466
SPECIAL PROCEEDING; September 19, 1979; MEMORANDUM and ORDER; ALAB-564, 10 NRC 451 (1979)
CONSTRUCTION PERMIT; October 1, 1979; MEMORANDUM; ALAB-565, 10 NRC 521 (1979)
- ALVIN W. VOGTLE NUCLEAR PLANT, Unit NOS. 1 and 2; Dockets 50-424, 50-425
CONSTRUCTION PERMIT; October 12, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-18, 10 NRC 617 (1979)
- BAILLY GENERATING STATION, NUCLEAR-1; Docket 50-367
CONSTRUCTION PERMIT; December 12, 1979; MEMORANDUM and ORDER; CLI-79-11, 10 NRC 733 (1979)
- BLACK FOX STATION, Units 1 and 2; Dockets STN-50-556, STN-50-557
CONSTRUCTION PERMIT; December 7, 1979; DECISION; ALAB-573, 10 NRC 775 (1979)
- COMANCHE PEAK STEAM ELECTRIC STATION, Units 1 and 2; Dockets 50-445A, 50-446A
ANTITRUST; October 5, 1979; ORDER REGARDING MOTIONS BASED UPON DECISION OF UNITED STATES DISTRICT COURT; LBP-79-27, 10 NRC 563 (1979)
ANTITRUST; October 23, 1979; ORDER GRANTING PRODUCTION OF DRAFT TESTIMONY OF EXPERT WITNESS; LBP-79-30, 10 NRC 594 (1979)
- DAVIS-BESSE NUCLEAR POWER STATION, Units 1, 2, and 3; Dockets 50-346A, 50-500A, 50-501A
ANTITRUST; September 6, 1979; DECISION; ALAB-560, 10 NRC 265 (1979)
- DIABLO CANYON NUCLEAR POWER PLANT (UNITS 1 and 2); Dockets 50-275(OL), 50-323(OL)
OPERATING LICENSE; September 27, 1979; PARTIAL INITIAL DECISION; LBP-79-26, 10 NRC 453 (1979)
- FLOATING NUCLEAR POWER PLANTS; Docket STN 50-437
SPECIAL PROCEEDING; September 14, 1979; MEMORANDUM and ORDER; CLI-79-9, 10 NRC 257 (1979)
- FULTON GENERATING STATION, Units 1 and 2; Dockets 50-463, 50-464
CONSTRUCTION PERMIT; August 8, 1979; MEMORANDUM and ORDER REPETITION TO TERMINATE DOCKET and TO QUASH PREAPPLICATION and EARLY REVIEW OF SITE SUITABILITY; LBP-79-23, 10 NRC 220 (1979)
- GE TEST REACTOR, VALLECITOS NUCLEAR CENTER; Dockets 50-70, 70-754
SPECIAL PROCEEDING; October 9, 1979; MEMORANDUM and ORDER; LBP-79-28, 10 NRC 578 (1979)
- H.B. ROBINSON, Unit No. 2; Docket 50-261
OPERATING LICENSE AMENDMENT; October 31, 1979; DECISION; ALAB-569, 10 NRC 557 (1979)
- HARTSVILLE NUCLEAR PLANT, Units 1A, 2A, 1B, and 2B; Dockets STN 50-518, 50-519, 50-520, 50-521
CONSTRUCTION PERMIT; July 11, 1979; DECISION; ALAB-554, 10 NRC 15 (1979)
- HARTSVILLE NUCLEAR PLANT, Units 1A, 2A, 1B, and 2B; Dockets STN50-518, 50-519, 50-520, 50-521
CONSTRUCTION PERMIT; August 14, 1979; MEMORANDUM and ORDER; ALAB-558, 10 NRC 158 (1979)
- HOPE CREEK GENERATING STATION, Units 1 and 2; Dockets 50-354, 50-355
SPECIAL PROCEEDING; September 10, 1979; DECISION; ALAB-562, 10 NRC 437 (1979)
SPECIAL PROCEEDING; October 11, 1979; MEMORANDUM; ALAB-566, 10 NRC 527 (1979)
- INDIAN POINT STATION, Units 1, 2, and 3; Dockets 50-3, 50-247, 50-286
SPECIAL PROCEEDING; September 6, 1979; MEMORANDUM; ALAB-561, 10 NRC 410 (1979)

FACILITY INDEX

- LAKE DENMARK ROAD, ROCKAWAY, NEW JERSEY 07866; Docket 29-13613-02
CIVIL PENALTIES; October 16, 1979; DECISION; ALAB-567, 10 NRC 533 (1979)
- LASALLE COUNTY STATION, Units 1 and 2; Dockets 50-373, 50-374
CONSTRUCTION PERMIT; December 4, 1979; DIRECTOR'S DENIAL OF REQUEST UNDER 10 CFR 2.206; DD-79-23, 10 NRC 859 (1979)
- LIMERICK NUCLEAR GENERATING STATION, Units 1 and 2; Dockets 50-352, 50-353
SPECIAL PROCEEDING; October 9, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-16, 10 NRC 609 (1979)
- MAINE YANKEE ATOMIC POWER PLANT; Docket DPR-36
OPERATING LICENSE; September 27, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-15, 10 NRC 511 (1979)
SPECIAL PROCEEDING; SEPTEMBER 26, 1979; EXECUTIVE DIRECTOR FOR OPERATIONS DECISION UNDER 10 CFR 1.40(o); DPRM-79-5, 10 NRC 515 (1979)
- MARBLE HILL NUCLEAR GENERATING STATION, Units 1 and 2; Dockets STN50-546, 50-547
SHOW CAUSE; October 11, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-17, 10 NRC 613 (1979)
CONSTRUCTION PERMITS; November 27, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-21, 10 NRC 717 (1979)
- MARBLE HILL NUCLEAR GENERATION STATION, Units 1 and 2; Dockets STN 50-546, STN 50-547
CONSTRUCTION PERMITS; July 6, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-10, 10 NRC 129 (1979)
- NORTH ANNA NUCLEAR POWER STATION, Units 1 and 2; Dockets 50-338OL, 50-339OL
OPERATING LICENSE; July 13, 1979; MEMORANDUM and ORDER; ALAB-555, 10 NRC 23 (1979)
SPECIAL PROCEEDING; October 29, 1979; MEMORANDUM and ORDER; ALAB-568, 10 NRC 554 (1979)
- NORTH ANNA POWER STATION, Units 1 and 2; Dockets 50-338-SP, 50-339-SP
SPECIAL PROCEEDING; August 25, 1979; ORDER GRANTING VEPCO'S MOTION FOR SUMMARY DISPOSITION; LBP-79-25, 10 NRC 234 (1979)
CONSTRUCTION PERMIT; August 25, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-13, 10 NRC 251 (1979)
SPECIAL PROCEEDING; August 2, 1979; DENIAL OF PETITION FOR RULEMAKING; DPRM-79-4, 10 NRC 253 (1979)
- NORTH ANNA POWER STATION, Units 1 and 2; SURRY POWER STATION, Units 1 and 2; Dockets 50-338/339, 50-280/281
OPERATING LICENSE; December 20, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-24, 10 NRC 862 (1979)
SPECIAL PROCEEDING; December 11, 1979; DENIAL OF PETITION FOR RULEMAKING; DPRM-79-7, 10 NRC 865 (1979)
- PALISADES NUCLEAR PLANT; Docket 50-2555P
OPERATING LICENSE AMENDMENT; July 23, 1979; SPECIAL PREHEARING CONFERENCE ORDER; LBP-79-20, 10 NRC 108 (1979)
- PEACH BOTTOM ATOMIC POWER STATION, Units 2 and 3; Dockets 50-277, 50-278
SPECIAL PROCEEDING; September 10, 1979; DECISION; ALAB-562, 10 NRC 437 (1979)
SPECIAL PROCEEDING; October 11, 1979; MEMORANDUM; ALAB-566, 10 NRC 527 (1979)
- PERRY NUCLEAR POWER PLANT, Units 1 and 2; Dockets 50-440A, 50-441A
ANTITRUST; September 6, 1979; DECISION; ALAB-560, 10 NRC 265 (1979)
- POINT BEACH NUCLEAR PLANT, Unit 1; Docket 50-266
SHOW CAUSE; November 30, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-22, 10 NRC 728 (1979)
- RANCHO SECO NUCLEAR GENERATING STATION; Docket 50-3125P
SPECIAL PROCEEDING; December 14, 1979; REFERRAL OF A LICENSING BOARD RULING TO THE ATOMIC SAFETY and LICENSING APPEAL BOARD; LBP-79-33, 10 NRC 821 (1979)
- SEABROOK STATION, Units 1 and 2; Dockets 50-443, 50-444
SPECIAL PROCEEDING; August 6, 1979; MEMORANDUM and ORDER; ALAB-557, 10 NRC 153 (1979)
SPECIAL PROCEEDING; September 6, 1979; MEMORANDUM; ALAB-561, 10 NRC 410 (1979)

FACILITY INDEX

- CONSTRUCTION PERMIT; November 16, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-20, 10 NRC 703 (1979)
- SHEARON HARRIS NUCLEAR POWER PLANT, Units 1, 2, 3, and 4; Dockets 50-400, 50-401, 50-402, 50-403
- CONSTRUCTION PERMIT; July 13, 1979; SUPPLEMENTAL INITIAL DECISION ON RE-MAINED ISSUE (Construction Permit); LBP-79-19, 10 NRC 37 (1979)
- CONSTRUCTION PERMIT; November 5, 1979; ORDER; CLI-79-10, 10 NRC 675 (1979)
- SKAGIT NUCLEAR POWER PROJECT, Units 1 and 2; Dockets STN 50-522, STN 50-523
- CONSTRUCTION PERMIT; July 9, 1979; MEMORANDUM and ORDER; ALAB-552, 10 NRC 1 (1979)
- CONSTRUCTION PERMIT; July 30, 1979; MEMORANDUM and ORDER; ALAB-556, 10 NRC 30 (1979)
- CONSTRUCTION PERMIT; August 31, 1979; DECISION; ALAB-559, 10 NRC 162 (1979)
- CONSTRUCTION PERMIT; November 20, 1979; MEMORANDUM and ORDER; ALAB-572, 10 NRC 693 (1973)
- SOUTH TEXAS PROJECT, Units 1 and 2; Dockets 50-498A, 50-499A
- ANTITRUST; October 5, 1979; ORDER REGARDING MOTIONS BASED UPON DECISION OF UNITED STATES DISTRICT COURT; LBP-79-27, 10 NRC 563 (1979)
- ANTITRUST; October 23, 1979; ORDER GRANTING PRODUCTION OF DRAFT TESTIMONY OF EXPERT WITNESS; LBP-79-30, 10 NRC 594 (1979)
- ST. LUCIE NUCLEAR POWER PLANT, Unit No. 2; Docket 50-389
- SPECIAL PROCEEDING; July 11, 1979; MEMORANDUM and ORDER; ALAB-553, 10 NRC 12 (1979)
- ST. LUCIE PLANT, Units 1 and 2; Dockets 50-335A, 50-389A
- ANTITRUST; December 21, 1979; ORDER; CLI-79-12, 10 NRC 767 (1979)
- STERLING POWER PROJECT, NUCLEAR Unit 1; Docket STN 50-485
- SPECIAL PROCEEDING; September 10, 1979; DECISION; ALAB-562, 10 NRC 437 (1979)
- SPECIAL PROCEEDING; October 11, 1979; MEMORANDUM; ALAB-566, 10 NRC 527 (1979)
- SURRY POWER STATION, Units 1 and 2; Dockets 50-280, 50-281
- OPERATING LICENSE; October 24, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-19, 10 NRC 625 (1979)
- SPECIAL PROCEEDING; October 24, 1979; DENIAL OF PETITION FOR RULEMAKING; DPRM-79-6, 10 NRC 667 (1979)
- SUSQUEHANNA STEAM ELECTRIC STATION, Units 1 and 2; Dockets 50-387, 50-388
- OPERATING LICENSE; September 19, 1979; MEMORANDUM and ORDER; ALAB-563, 10 NRC 449 (1979)
- OPERATING LICENSE; October 19, 1979; MEMORANDUM and ORDER CONCERNING CLASS 9 ACCIDENT CONTENTION; LBP-79-29, 10 NRC 586 (1979)
- SPECIAL PROCEEDING; October 30, 1979; MEMORANDUM and ORDER ON DISCOVERY MOTIONS (II) (October 30, 1979); LBP-79-31, 10 NRC 597 (1979)
- THREE MILE ISLAND NUCLEAR STATION, Unit 1; Docket 50-289
- SPECIAL PROCEEDING; December 18, 1979; FIRST SPECIAL PREHEARING CONFERENCE ORDER; LBP-79-34, 10 NRC 828 (1978)
- THREE MILE ISLAND NUCLEAR STATION, Unit 2; Docket 50-320
- SPECIAL PROCEEDING; November 2, 1979; MEMORANDUM and ORDER; ALAB-570, 10 NRC 679 (1979)
- THREE MILE ISLAND NUCLEAR STATION, Unit No. 1; Docket 50-289
- SPECIAL PROCEEDING; August 9, 1979; ORDER and NOTICE OF HEARING; CLI-79-8, 10 NRC 141 (1979)
- THREE MILE ISLAND NUCLEAR STATION, Unit No. 2; Docket 50-320
- SPECIAL PROCEEDING; September 10, 1979; DECISION; ALAB-562, 10 NRC 437 (1979)
- SPECIAL PROCEEDING; October 11, 1979; MEMORANDUM; ALAB-566, 10 NRC 527 (1979)
- TROJAN NUCLEAR PLANT; Docket 50-344
- SPECIAL PROCEEDING; November 30, 1979; MODIFICATION OF ORDER PERMITTING INTERIM OPERATION OF TROJAN NUCLEAR PLANT; LBP-79-32, 10 NRC 699 (1979)
- TROJAN NUCLEAR POWER PLANT; Docket 50-344
- SPECIAL PROCEEDING; September 10, 1979; DIRECTOR'S DECISION UNDER 10 CFR 2.206; DD-79-14, 10 NRC 509 (1979)
- TURKEY POINT NUCLEAR GENERATING Units 3 and 4; Dockets 50-250(SP), 50-251(SP)
- OPERATING LICENSE; August 3, 1979; ORDER RULING ON THE PETITION OF MARK P. ONCAVAGE; LBP-79-21, 10 NRC 183 (1979)

FACILITY INDEX

TURKEY POINT PLANT, Units 3 and 4; Dockets 50-250A, 50-251A
ANTITRUST; December 21, 1979; ORDER; CLI-79-12, 10 NRC 767 (1979)
TYRONE ENERGY PARK, Unit No. 1; Docket STN 50-484
SPECIAL PROCEEDING; September 10, 1979; DECISION; ALAB-562, 10 NRC 437 (1979)
WILLIAM H. ZIMMER NUCLEAR STATION; Docket 50-3580L
OPERATING LICENSE; August 7, 1979; MEMORANDUM and ORDER ADMITTING NEW
CONTENTIONS; LBP-79-22, 10 NRC 213 (1979)
OPERATING LICENSE; August 15, 1979; MEMORANDUM and ORDER DENYING MO-
TION TO DELAY DELIVERY OF FUEL TO THE SITE; LBP-79-24, 10 NRC 226 (1979)
WOLF CREEK GENERATING STATION, Unit 1; Docket STN 50-482
CONSTRUCTION PERMIT; July 12, 1979; DIRECTOR'S DENIAL OF REQUEST UNDER 10
CFR 2.206; DD-79-11, 10 NRC 136 (1979)
WPPSS NUCLEAR PROJECT NO. 2; Docket 50-3970L
OPERATING LICENSE; November 14, 1979; MEMORANDUM; ALAB-571, 10 NRC 687
(1979)

