NUCLEAR REGULATORY COMMISSION ISSUANCES

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July 1, 1980 — December 31, 1980

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PREFACE

This is the twelfth volume of issuances (1 - 742) 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, 1980 to December 31, 1980.

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.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman

In the Matter of **Docket No. 50-445 OL**
50-446 OL

TEXAS UTILITIES GENERATING COMPANY *et al.*
(Comanche Peak Steam Electric Station, Units 1 and 2)

July 3, 1980

The Appeal Board Chairman summarily dismisses as interlocutory the appeal of an organization admitted to the proceeding as an intervenor from the Licensing Board's rejection of certain contentions advanced in connection with its intervention petition.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Commission's Rules of Practice prohibit a person from taking an interlocutory appeal from an order entered on his intervention petition unless that order has the effect of denying the petition in its entirety. 10 CFR 2.714a; *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-585, 11 NRC 469 (1980).

APPEARANCES

Mrs. Juanita Ellis; Dallas, Texas, for the intervenor, Citizens Association for Sound Energy.

MEMORANDUM AND ORDER

Citizens Association for Sound Energy (CASE) endeavors to appeal from so much of the Licensing Board's unpublished June 16, 1980 prehearing conference order as rejected several of the contentions which that organization wishes to litigate in this operating license proceeding. It is

apparent from that order, however, that other CASE contentions were accepted by the Licensing Board as litigable and, thus, that the organization has been admitted to the proceeding as an intervenor. In these circumstances, the appeal must be summarily dismissed on the ground that it is unauthorized by the Commission's Rules of Practice. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-585, 11 NRC 469 (1980), and ALAB-586, 11 NRC 472 (1980). As there observed:

> Those Rules do not permit a person to take an interlocutory appeal from an order entered on his intervention petition unless that order has the effect of denying the petition in its entirety. 10 CFR 2.714a; *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-329, 3 NRC 607, 610 (1976), and cases there cited.

ALAB-585, 11 NRC at 470; ALAB-586, 11 NRC at 473.[1]

Appeal *dismissed.*
It is so ORDERED.

FOR THE APPEAL BOARD
CHAIRMAN

C. Jean Bishop
Secretary to the Appeal Board

This action was taken by the Appeal Board Chairman under the authority of 10 CFR 2.787(b).

[1]As also pointed out in those decisions, an intervenor in CASE's situation must await the rendition of the Licensing Board's initial decision. If dissatisfied with that decision, an appeal can be taken from it under 10 CFR 2.762(a). One of the matters that can be raised on such an appeal is whether the Licensing Board erred in rejecting one or more of the appellant's contentions. Further, the appellant may then complain of any Board-ordered revisions in the wording of those of its contentions which were admitted to the proceeding. (CASE's premature appeal contains a claim of error on that score as well.)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. W. Reed Johnson
Thomas S. Moore

In the Matter of **Docket No. 50-275 OL**
50-323 OL

PACIFIC GAS AND ELECTRIC COMPANY
(Diablo Canyon Nuclear Power Plant, Units 1 and 2)

July 15, 1980

The Appeal Board revises the affidavit of non-disclosure for those seeking access to the facility's security plan to reflect the Commission's ruling in CLI-80-24, 11 NRC 775, relating to restrictions on public discussion of information protected under the affidavit. The Board allows the Governor of California as the representative of an interested state to participate in the security plan proceeding, subject to his "taking the proceeding as he finds it;" and establishes a schedule for the next phase of the proceeding.

APPEARANCES

Mr. Bruce K. Norton, Phoenix, Arizona, for the Pacific Gas and Electric Company, applicant.

Mr. Yale I. Jones, San Francisco, California, for the San Luis Obispo Mothers for Peace, intervenor.

Mr. Herbert H. Brown, Washington, D.C., for the Governor of California.

Messrs. James R. Tourtellotte and William J. Olmstead for the Nuclear Regulatory Commission staff.

MEMORANDM AND ORDER

I.

PROTECTIVE ORDER

1. In our Second Prehearing Conference Order[1] we directed applicant to grant access to a "sanitized" version of the Diablo Canyon physical security plan to intervenor's counsel and (potentially) its expert witness, subject to the terms of a protective order which incorporated an "affidavit of nondisclosure." Clause 8(b) of that affidavit precluded one given access to the security plan from "publicly discuss[ing] or disclos[ing] any protected information...receive[d] by any means whatever." Both the applicant and the intervenor sought Commission review, the former contending that no disclosure of its security plan was warranted and the latter that the protective order was overly restrictive. On April 21, 1980, the Commission stayed disclosure of the security plan pending its further order.

On June 11, 1980, the Commission denied applicant's petition, reaffirming "that intervenors in Commission proceedings may raise contentions relating to the adequacy of the applicant's proposed physical security arrangements, and that the Commission's regulations, 10 CFR 2.790, contemplate that sensitive information may be turned over to intervenors in NRC proceedings under appropriate protective orders." CLI-80-24, 11 NRC 775, 776. The Commission then directed PG&E to make the sanitized version of the security plan available to the intervenor. *Ibid.*

At the same time, the Commission accepted intervenor's argument that the restrictions on public discussion of protected information in clause 8(b) of the non-disclosure affidavit contravened the First Amendment. Nevertheless, it cautioned that those subject to the protective order are "prohibited from corroborating the accuracy or inaccuracy of outside information by using protected information gained through the hearing process." *Id.* at p.778.

2. The protective order and non-disclosure affidavit must be modified to reflect the Commission's ruling, but how we should do so is complicated by a disagreement. Chairman Ahearne and Commissioner Hendrie took the position "that before intervenors publicly disseminate protected informa-

[1]Order of April 11, 1980, ALAB-592, 11 NRC 744.

tion gained outside the hearing process they should be required to establish to the satisfaction of...the Appeal Board...that the information was in fact gained outside of the hearing process." CLI-80-24, 11 NRC at p. 778. Commissioners Gilinsky and Bradford, however, were opposed on the ground "that any such clearance procedure is an unconstitutional prior restraint." *Ibid.* (The remaining Commissioner — whose term has since expired — had voluntarily recused himself.) In light of this division, the Commission remanded the issue to us with instructions to select one of those options on the basis of our reading of the law and to modify the protective order and non-disclosure affidavit accordingly. CLI-80-24, 11 NRC at p. 778.

In response to our request for their views, the staff reported that it, the applicant and the intervenor were all prepared to stipulate (a) that clause 1 (a)(2) of the non-disclosure affidavit be amended to define "protected information" as "information *obtained during the course of these proceedings* dealing with or describing details of [the security] plan" (new matter italicized); (b) that clause 8(b) be deleted from that affidavit; and (c) that no further protection of the confidentiality of the security plan was needed.[2]

By letter dated July 10th, however, intervenor's counsel advised us that, while intervenor was agreeable to items (b) and (c) of the stipulation as reported by the staff, item (a) did not correspond precisely to his understanding of the stipulation. (Apparently the stipulation was negotiated over the telephone.) Intervenor's version appears in the margin below.[3] The disagreement about the precise wording to one side, however, it is evident that the parties have opted for the approach favored by Commissioners Gilinsky and Bradford.

3. We are surprised at the applicant's and staff's acquiescence in this position. At the prehearing conference in San Luis Obispo on April 2nd and in their presentations to the Commission, they argued that far greater restrictions were needed to protect the security plan — arguments that carried the day before us.

Be that as it may, we now face a narrower question: whether those receiving the security plan may publicly discuss protected information without first demonstrating to us that they obtained it outside the hearing

[2]Counsel for the staff informed us by telephone on July 3 that he had spoken to Governor Brown's lead counsel who expressed no objections to the stipulation.

[3]"1. As used in Affidavit of Non-Disclosure

> (a) 'Protected Information' is (1) any form of the physical security plan for the licensee's Diablo Canyon Nuclear Power Plant, Units 1 and 2; or (2) any information obtained *from applicant or the Commission by virtue of these proceedings which is not otherwise a matter of public record and which deals with or describes details of the security plan."* (New matter italicized.)

process. Whether or not such a demonstration could be required in some circumstances,[4] we do not write on a clean slate. The applicant and staff have performed a *volte-face.* They no longer contend it necessary to preclude public discussion of protected information before it is shown to come from outside sources. We do not feel justified in imposing such a restraint on our own initiative. Therefore, we will modify the non-disclosure affidavit essentially as the parties suggest. In this connection, however, neither of the suggestions put forward precisely reflect what the Commission's ruling intended. The version transmitted by the staff is too broadly drawn. It does not exclude information obtained during the course of the proceeding *but outside the hearing process.* On the other hand, we can envision circumstances in which protected information may be provided to A and not to B. Intervenor's phraseology could be read to permit public disclosure of that information where B obtained it from A and not directly "from applicant or the Commission," even though it had been released by virtue of these proceedings. Without suggesting that this is a likely occurrence, there is no occasion to leave that loophole open. Accordingly, we will amend the non-disclosure affidavit to conform to the intervenor's suggestion but omitting the phrase "from applicant or the Commission." This should make clear that "protected information" is that provided "by virtue of these proceedings," *i.e.,* pursuant to our order and not otherwise in the public domain.[5]

We think it important, however, to reemphasize the Commission's warning: those subject to the protective order may not corroborate the accuracy (or inaccuracy) of outside information by using protected information gained through the hearing process (see at p. 4 , *supra*). We substitute that caveat for the present clause 8(b).

Moreover, some elaboration of this caveat is useful. Rumors, gossip and speculation abound and sometimes get into print. It is one thing for a reporter to speculate or guess that something is so or quote an undisclosed source to the same effect. It would be quite another, however, for an individual who is known to possess the facts to repeat what otherwise would be only rumor, gossip or speculation. In the latter instance, his doing so may make his statements corroborative of the actual facts. This follows

[4]For example, such a restraint might be appropriate where (1) the information would likely be classified were it of government rather than private origin; (2) public disclosure could jeopardize the physical security of a nuclear power plant and subject the public to extreme danger; (3) only a very narrow class of individuals would be affected; (4) a prompt administrative remedy subject to judicial review would be available, and (5) there exists no alternative means of protecting the public health and safety less intrusive on the right of public expression. *See, In re Halkin,* 598 F.2d 176, 191-96 (D.C. Cir. 1979); *cf., Alfred A. Knopf, Inc.* v. *Colby,* 509 F.2d 1362, 1370-71 (4th Cir. 1975).

[5]The non-disclosure affidavit is appended to this order in the amended form.

because reports from undisclosed and uncertain sources are likely to be treated skeptically, but the same information announced by an individual in a position to know is liable to be credited.

Similarly, receipt of protected information may position the recipient to gather and collate from the public domain otherwise useless bits and pieces of information into a reproduction of the security plan. In such circumstances, simply the public revelation of the information as a coherent mass may corroborate protected information.

These examples are obviously not exhaustive. But they point up the caution those receiving protected information must exercise in making public utterances about the security plan for the applicant's facility. We therefore stress to those who receive protected information that rumors and gossip from uninformed or unauthorized sources do not necessarily mean that protected information has become public knowledge to the extent that they are free to join in discussing it publicly. *Cf., Alfred A. Knopf* v. *Colby,* 509 F.2d 1362, 1370-71 (4th Cir. 1975). We add our caution to the Commission's and urge that all privy to the security plan exercise the utmost restraint in discussing its contents lest it be compromised. And it should be unnecessary to remind all counsel again of the American Bar Association Canons restricting statements made during the course of an administrative proceeding. See ABA Disciplinary Rule 7-107.

Finally, we note that at the prehearing conference intervenor's counsel articulated only one objection to a complete ban on discussing protected information. This was a fear that the prohibition might somehow handicap their defense, should they be charged with improper disclosure of protected information. We do not attempt to judge the reasonableness of that concern. However, a procedure whereby counsel demonstrate that they obtained protected information outside the hearing process (and that their intended public utterances are not corroborative of it) would serve to shield them against charges of unauthorized disclosure. We therefore stand ready to rule on whether protected information was in fact obtained from independent sources should counsel wish to submit that question to us.

The Protective Order on Security Plan Information issued April 3, 1980, and the form of non-disclosure affidavit are hereby amended and reissued in the form annexed. Intervenor's counsel should execute new affidavits of non-disclosure and file them with this Board no later than *July 25, 1980.*

II.

PARTICIPATION OF THE GOVERNOR OF CALIFORNIA

The Licensing Board rendered its partial initial decision covering security plan issues on September 27, 1979. LBP-79-26, 10 NRC 453. The Governor of California later sought leave to intervene before that Board pursuant to 10 CFR 2.715(c) as the representative of "an interested State." The Board below admitted the Governor for that purpose on November 16, 1979, with the direction that he "take the proceeding as he finds it."[6]

The Governor did not participate in the appeal of the security plan issues (which we heard in San Francisco on January 22, 1980) or in any of the other proceedings before us that followed in the wake of our February 15th decision on that appeal. ALAB-580, 11 NRC 227 (1980). On June 11, 1980, the Governor submitted a notice of his intention to participate in the *de novo* security plan proceeding we have been conducting. Notwithstanding the belatedness of his decision to do so, the staff responded on June 25th and the applicant on July 7th that they had no objection to the Governor's participation provided that no delay resulted therefrom.

There appears to be no legal impediment to the Governor's becoming a party. However, as is apparent from this memorandum, the Commission's decision in CLI-80-24, *supra,* and our Second Prehearing Conference Order of April 11th (ALAB-592, *supra*), many matters have been considered and decided since we took up the security plan issues at the beginning of the year. We note that, in analogous circumstances, the Commission ruled that "allowance of a late intervention need not disrupt established discovery schedules and other preparations for hearing. A tardy petitioner with no good excuse may be required to take the proceeding as it finds it. For...'any disadvantage which it might suffer in terms of the opportunity for trial preparation would be entirely of its own making.' " *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 276 (1975) (on application of a county government to participate).

Accordingly, the Governor may participate as the representative of an interested state, "taking the proceeding as he finds it;" he may not, however, complain of rulings made or procedural arrangements settled prior to his participation. Subject to the protective order and provided that their non-disclosure affidavits in the form attached are executed and filed with us by July 25, 1980, the Governor's counsel may examine the "sanitized" security plan to the extent and under the terms and conditions

[6]We understand that the Governor was placed on the service list at that point and his counsel has been receiving copies of the documents filed and issued in this case.

afforded the intervenor's representatives. The protective order provisions, including those governing the service of documents containing sensitive material, and the schedule set forth in part III, below, shall henceforth apply to the Governor as well as to the other parties.

III.

FUTURE PROCEEDINGS

Our April 11, 1980 Second Prehearing Conference Order stated that we would issue a schedule for completing the necessary prehearing procedures after we had had an opportunity to review the staff and applicant's version of the sanitized security plan. We did not anticipate, however, the long delay between our April order and this one occasioned by the parties' various petitions for review filed with the Commission. Now that the Commission has confirmed that the applicant must make the sanitized security plan available to the intervenor it is time to move ahead. Accordingly, unless modified by subsequent order, the following timetable will control the remainder of the prehearing security plan proceedings.

1. Our April 11 order required that any depositions for the purpose of determining the qualifications of proffered expert witnesses be completed by April 17, 1980. Only one deposition, that of Jermiah P. Taylor, has been filed with us.

Any objection or other motion concerning the qualifications of the expert witnesses shall be filed so that it is in our hands by July 28, 1980. Any response shall be filed so that it is *in our hands* by August 4, 1980. We will rule promptly on any motions. If we find the proffered expert witnesses qualified, the applicant shall then make the sanitized security plan available to the expert witnesses and to those attorneys who have executed and filed appropriate affidavits of non-disclosure.

In the absence of any timely filed objections or motions, all counsel and witness who have executed and filed affidavits of non-disclosure shall be entitled to access to the sanitized security plan beginning July 30, 1980.

2. Because the Commission determined that a portion of the affidavit of non-disclosure previously executed by intervenor's counsel was overboard, counsel for all intervening parties must execute new affidavits as provided in part I, above.

3. Any objections to the sanitized security plan and motions for disclosure of additional information must be *in our hands* by August 11, 1980; response must be *in our hands by* September 2, 1980; and replies *in our hands* by September 15, 1980. All objections, responses, and replies shall follow the procedures and format set forth below.

(a) Any objection to the sanitized security plan and motion for disclosure of additional information must identify the chapter, page, section, subsection and subject matter of each item of information sought. The motion shall succinctly state the reason why the deleted information is relevant and refer to any applicable section of the Commission's site security regulations. 10 CFR Part 73. We recognize that the movant cannot know the precise content of the information sought. Nevertheless, the index to the sanitized security plan, the content of the surroundng information, and the applicant's general description of the deleted information appearing in the plan, when combined with the Commission's site security regulations, should enable the movant to state with reasonable specificity why disclosure of the withheld information is necessary.

The applicant and staff should respond to each specific objection by identifying the chapter, page, section, subsection and subject matter of each item of information sought. As the parties seeking to withhold the information, the applicant and staff shall explain in response to each particular objection: (1) the full nature of the information withheld (without revealing its exact content); (2) specifically why in light of the standards of ALAB-410, 5 NRC, 1398, 1405-06 (1977), it should be withheld; (3) the particular manner in which the information could be used to compromise the security plan; and (4) in response to movant's objections, why such information is not necessary to movant and should not be released. Assertions that release of any information would compromise the security plan must be supported by affidavits from knowlegeable individuals. Such affidavits should establish the affiant's expertise in the subject matter at issue and explain precisely how the information sought could be used to compromise the security plan.

Movant shall then file a reply in the same format as its initial objection and applicant's and staff's responses. Although the information withheld will still be unknown, those responses and accompanying affidavits will enable the movant to argue the case for disclosure with much greater particularity than in the initial objection. All assertions that disclosure of particular information is necessary must be supported by affidavits of an expert authorized to examine the sanitized plan. Again, such affidavits must establish the affiant's expertise in the subject matter at issue, explain why the information withheld is essential, and demonstrate why other information or more general information already disclosed would not suffice.

We are cognizant that the procedures set forth are burdensome. We are also painfully aware of the burden placed upon us in determining what (if any) further information need be included in the sanitized plan, should objections to that plan be filed. But the adversary nature of normal adjudicative proceedings is necessarily distorted by the movant's ignorance

of the withheld information and the usual process for dispute resolution will not serve. The procedures outlined are modelled on those adopted by the courts for use in analogous circumstances. They are designed to help us determine what, if any, further information need be disclosed by providing as much illumination of the issues as possible in the circumstances. *See, e.g., Vaughn* v *Rosen,* 484 F.2d 820 (D.C. Cir. 1973), *certiorari denied,* 415 U.S. 977 (1974).

(b) Dr. Johnson has suggested an alternative to the foregoing procedures for the parties' consideration. As will be evident, it would be less burdensome on all concerned should a substantial number of objections to the plan be filed. Because of obvious legal constraints, however, this suggested alternative is practicable only if all parties are agreeable to stipulate to it and to be bound by the results. See 10 CFR 2.753.

Dr. Johnson suggests, in the event objections to the sanitized security plan are filed, that this Board resolve them after conferring *in camera* with an expert witness named by each party and found qualified by us. In other words, for purposes of determining whether further information should be made available for use in this proceeding, qualified experts named by the parties would advise us *in camera* of their respective opinions concerning the need for each item of information sought to be disclosed. Obviously, the "outside" expert witness would have to be given access to each item of withheld information as necessary to fulfill his responsibility to us as an advisor. Of course, movant's experts would not be permitted to record the *in camera* advisory conference and any notes concerning the plan would have to be turned over to us. No counsel for any party would be present. Our decision on this matter would be final and binding on all parties. *Cf., The Toledo Edison Company* (Davis-Besse Station), ALAB-300, 2 NRC 752, 764-68 (1975).

If the parties accept this alternative, the more burdensome and time consuming procedures we previously outlined in point 3(a) could be avoided and the timetable for concluding the remaining prehearing procedures shortened considerably. We instruct all counsel to confer promptly about Dr. Johnson's suggestion and, if it is acceptable, to file an appropriate stipulation, containing any additional details deemed necessary by August 4, 1980. We will make every effort to accommodate the schedules of the parties' expert witnesses concerning the date and location of such an *in camera* advisory conference.

If, after conferring, the parties are unable to agree on Dr. Johnson's suggested alternative procedure, they should tell us so promptly and the procedures and timetable previously set forth will control the proceedings. However, we will entertain suggestions for less burdensome alternative procedures that the parties are able to agree upon if filed by August 4, 1980.

4. In the absence of objections to the sanitized plan, amended contentions particularizing the exact aspects of the plan that are being challenged shall be filed no later than August 11, 1980. If objections are filed, then one week from the date of our order disposing of those objections the applicant shall revise and make available the sanitized plan. Two weeks thereafter amended contentions addressed to the revised plan shall be filed.

5. At the April 2, 1980 prehearing conference we requested that the parties attempt to reach agreement on the order for presenting direct testimony and the deadlines for filing such testimony. (Tr. 116-117). Within seven days of the filing of the amended contentions, the parties shall submit a schedule covering both the timing and order for filing direct testimony, bearing in mind that, in our judgment, more than 30 days for preparing direct testimony would not be appropriate in the circumstances of this case. If the parties are unable to agree on a schedule by that date, we will set one ourselves.

6. All direct testimony shall be filed in question and answer form. The use of this format should remind counsel and their witnesses to avoid broad and general answers to vague and general questions. Rather, specific, narrowly drawn questions and precise answers should be the watchword. Expert witnesses who will present opinion evidence are to be reminded by counsel that they are not advocates. Rather, such witnesses should retain their professional objectivity during cross-examination and during questioning by us. A witness' views which differ from those of his colleagues should be acknowledged with appropriate explanations for those differences.

7. Once a schedule for filing direct testimony is established, we will set the hearing dates for the *in camera* hearing on the adequacy of the applicant's security plan.

8. Two final matters. First, counsel are reminded that any security plan information and similar sensitive material should not be sent through the mail but must be hand-delivered.[7] Counsel attending the April 2, 1980 prehearing conference were asked to work out the details for accomplishing hand delivery and to inform us of those procedures. (Tr. 112-114). By letter dated May 2, 1980, the Secretary to the Appeal Board requested applicant's counsel to take the lead in this matter. It was there requested that, after consultation with other counsel, he submit a stipulation to govern future service of security plan materials. We still have received no word on the

[7]Should an occasion arise where hand-delivery would be too burdensome, mailings containing protected information, at a minimum, should be made from the facility furnished by the Pacific Gas and Electric Company.

subject. Accordingly, we instruct all counsel to turn their attention to this matter immediately and file a stipulation by July 28, 1980, governing the service of documents containing protected information. We would prefer an agreed-upon procedure to one imposed by us, but the absence of an appropriate stipulation will leave us no choice.

Second, the admonition contained in our first prehearing order is even more appropriate today: requests for extensions of time or postponements will be viewed with disfavor; unexcused delays will not be permitted.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

AMENDED PROTECTIVE ORDER ON SECURITY PLAN INFORMATION

(July 15, 1980)

Counsel and witnesses for Intervenor San Luis Obispo Mothers for Peace (Intervenor) and for the Governor of California (Governor) who have executed an Affidavit of Non-Disclosure in the form attached, shall be permitted access to "protected information"[1] upon the following conditions:

1. Only Intervenor's and the Governor's counsel and Intervenor's experts who have been qualified in accordance with the requirements of our decision in *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-410, 5 NRC 1398 (1977), and our subsequent orders in this proceeding may have access to protected information on a "need to know" basis.

2. Counsel and experts who receive any protected information (including transcripts of *in camera* hearings, filed testimony or any other document that reveals protected information) shall maintain its confidentiality as required by the annexed Affidavit of Non-Disclosure, the terms of which are hereby incorporated into this protective order.

3. Counsel and experts who receive any protected information shall use it solely for the purpose of participation in matters directly pertaining to this security plan hearing and any further proceedings in this case directly involving security matters, and for no other purposes.

4. Counsel and experts shall keep a record of all documents containing protected information in their possession and shall account for and deliver that information to the Commission official designated by this Board in accordance with the Affidavit of Non-Disclosure that they have executed.

5. In addition to the requirements specified in the Affidavit of Non-Disclosure, all papers filed in this proceeding (including testimony) that contain any protected information shall be segregated and:

(a) served on lead counsel and the members of this Board only;

(b) served in a heavy, opaque inner envelope bearing the name of the addressee and the statement "PRIVATE. TO BE OPENED BY ADDRESSEE ONLY." Addressees shall take all necessary precautions to ensure that they alone will open envelopes so marked.

6. Counsel, experts or any other individual who has reason to suspect that documents containing protected information may have been lost or

[1]As used in this order, "protected information" has the same meaning as used in the Affidavit of Non-Disclosure, annexed hereto.

misplaced (for example, because an expected paper has not been received) or that protected information has otherwise become available to unauthorized persons shall notify this Board promptly of those suspicions and the reasons for them.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

AMENDED AFFIDAVIT OF NON-DISCLOSURE

I, _____, being duly sworn, state:

1. As used in this Affidavit of Non-Disclosure,

(a) "Protected information" is (1) any form of the physical security plan for the licensee's Diablo Canyon Nuclear Power Plant, Units 1 and 2; or (2) any information obtained by virtue of these proceedings which is not otherwise a matter of public record and which deals with or describes details of the security plan.

(b) An "authorized person" is (1) an employee of the Nuclear Regulatory Commission entitled to access to protected information; (2) a person who, at the invitation of the Atomic Safety and Licensing Appeal Board ("Appeal Board"), has executed a copy of this affidavit; or (3) a person employed by Pacific Gas and Electric Company, the licensee, and authorized by it in accordance with Commission regulations to have access to protected information.

2. I shall not disclose protected information to anyone except an authorized person, unless that information has previously been disclosed in the public record of this proceeding. I will safeguard protected information in written form (including any portions of transcripts of *in camera* hearings, filed testimony or any other documents that contain such information), so that it remains at all times under the control of an authorized person and is not disclosed to anyone else.

3. I will not reproduce any protected information by any means without the Appeal Board's express approval or direction. So long as I possess protected information, I shall continue to take these precautions until further order of the Appeal Board.

4. I shall similarly safeguard and hold in confidence any data, notes, or copies of protected information and all other papers which contain any protected information by means of the following:

(a) my use of the protected information will be made at a facility in San Francisco to be made available by Pacific Gas and Electric Company.

(b) I will keep and safeguard all such material in a safe to be obtained by intervenors at Pacific Gas and Electric Company's expense, after consultation with Pacific Gas and Electric Company and to be located at all times at the above designated location.

(c) Any secretarial work performed at my request or under my supervision will be performed at the above location by one secretary of my designation. I shall furnish Pacific Gas and Electric Company, the Board and Staff an appropriate resume of the secretary's background and experience.

(d) Necessary typing and reproduction equipment will be furnished by Pacific Gas and Electric Company.

(e) All mailings by me involving protected information shall be made from the facility furnished by Pacific Gas and Electric Company.

5. If I prepare papers containing protected information in order to participate in further proceedings in this case, I will assure that any secretary or other individual who must receive protected information in order to help me prepare those papers has executed an affidavit like this one and has agreed to abide by its terms. Copies of any such affidavit will be filed with the Appeal Board before I reveal any protected information to any such person.

6. I shall use protected information only for the purpose of preparation for this proceeding or any further proceedings in this case dealing with security plan issues, and for no other purpose.

7. I shall keep a record of all protected information in my possession, including any copies of that information made by or for me. At the conclusion of this proceeding, I shall account to the Appeal Board or to a Commission employee designated by that Board for all the papers or other materials containing protected information in my possession and deliver them as provided herein. When I have finished using the protected information they contain, but in no event later than the conclusion of this proceeding, I shall deliver those papers and materials to the Appeal Board (or to a Commission employee designated by the Board), together with all notes and data which contain protected information for safekeeping during the lifetime of the plant.

8. I make this agreement with the following understandings: (a) I do not waive any objections that any other person may have to execute an affidavit such as this one; (b) I will not corroborate the accuracy or inaccuracy of information obtained outside this proceeding by using protected information gained through the hearing process.

_____

Subscribed and sworn to before me this __ day of __ 1980.

_____

Notary Public

DECISION

I

On April 5, 1979, the Commonwealth Edison Company, the Interstate Power Company and the Iowa-Illinois Gas and Electric Company (applicants) applied for permits to construct Units 1 and 2 of the Carroll County Station on a site located in Carroll County, Illinois, approximately five miles southeast of Savannah and three miles east of the Mississippi River. The application was accompanied by a request for an early site review, hearing and partial initial decision on site suitability issues.

Acting upon this request, the Commission issued a notice of hearing which established a licensing board and provided that any person whose interest might be affected could seek leave to intervene in conformity with the terms of 10 CFR 2.714(a). 44 FR 26229, 26230 (May 4, 1979). The notice indicated that, pursuant to 10 CFR 2.606 and 2.761a, the Board was to "make findings on issues of site suitability for which early consideration is sought and [to] render a partial decision." *Id.* at 26229. In this connection, it stated:

> The application for construction permits with a request for an early site review identified as the issues of site suitability for which early consideration is sought the following: whether, from both an environmental and safety standpoint, the Carroll County site is suitable with respect to: geology, hydrology, meteorology, terrestrial and aquatic ecology, water use, regional demography, community characteristics, economy, historical and national landmarks, land use, noise considerations, and aesthetics. In the event the Board makes favorable findings on these issues, the partial decision shall remain in effect either for a period of five years or until the applicant for the construction permit has made timely submittal of the remaining information required to support the application and the proceeding for a permit to construct a facility on the site identified in the partial decision has been concluded, unless the Commission, Atomic Safety and Licensing Appeal Board, or Atomic Safety and Licensing Board, upon its own initiative or upon motion by a party to the proceeding, finds that there exists significant new information that substantially affects the earlier conclusions and reopens the hearing record on site suitability issues.
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> • • • •
>
> With respect to the Commission's responsibilities under NEPA, and regardless of whether the proceeding is contested or uncontested, the Board will, in accordance with 10 CFR 51.52(c): (1) determine whether the requirements of Section 102(2)(A), (C), and (E) of NEPA and 10 CFR Part 51 have been complied with in this proceeding; (2) independently consider the final balance among conflicting factors contained in the record of the proceeding; and (3) determine, after weighing the environmental, economic,

technical and other benefits against environmental and other costs, the suitability of the site with respect to the factors reviewed.

Ibid.

Among the intervention petitions filed was that submitted jointly by James Runyon, Edward Gogol and Citizens Against Nuclear Power (CANP), hereinafter "petitioners." According to the petition, (1) Mr. Runyon resides, owns property and is employed in Rock Island, Illinois, some 40 miles south of the proposed site; (2) Mr. Gogol lives and owns property in Chicago, approximately 133 miles east of the site; and (3) both of these individuals belong to CANP, an organization said to be concerned with protecting its members and the general public "from the environmental, economical and physical safety hazards of nuclear energy."[1]

Thereafter, the petitioners filed an amended petition, specifying the 15 contentions which they wished to litigate in the proceeding. One or more of the contentions dealt with each of the following subjects: the need for the power to be generated by the proposed facility; alternative energy sources; the applicants' financial qualifications; feasibility of decommissioning the facility; economic costs of operating and decommissioning the facility; the overall cost/benefit balance for the facility; waste disposal; availability to the applicants of uranium fuel; the applicants' ability to build and operate nuclear plants without undue risk to the public health and safety; adequacy of insurance coverage; and the ability to provide for emergency evacuation in the event of a serious accident.

At a special prehearing conference on September 19, 1979, the Licensing Board considered the various intervention petitions. With regard to these petitioners, both the applicants and the NRC staff urged (1) that Mr. Gogol lacked standing to intervene in view of the geographical distance between his Chicago residence and the proposed facility site; and (2) none of the 15 tendered contentions was appropriate for litigation in an early site review hearing (as distinguished from the later hearings which must precede a grant of the construction permit application).[2] The Board took the standing question under advisement.[3] It did, however, rule orally upon the acceptability of the joint petitioners' contentions. Fourteen of them were rejected; judgment on the fifteenth (that dealing with emergency evacuation) was reserved.[4]

[1]Although the petition was filed a week after the deadline specified in the notice of hearing, it was accompanied by an explanation of the tardiness. In any event, it was not denied below on untimeliness grounds.
[2]Tr. 6-9, 10-12.
[3]Tr. 13, 16.
[4]Tr. 50-55.

On October 10, the Board issued an unpublished order. Although findng (at p. 2) that CANP and Mr. Runyon had the requisite standing to intervene, it stated (without elaboration) that "Ed Gogol is not made a party hereto for lack of standing." Insofar as the contentions were concerned, the Board made no mention whatsoever of the fourteen which it had orally rejected at the prehearing conference. Rather, the order was confined to the identification (at pp. 3-13) of (1) those contentions (contained in other petitions) which had been "tentatively accepted," and (2) those contentions as to which judgment was being reserved. In the latter category was petitioners' fifteenth contention, as to which the Board announced (consonant with its oral ruling) that a determination of its acceptability would be held in abeyance to await "the publishing of the Three Mile Island NRC Staff report or further Commission action" (*id.* at p. 12).

The order concluded with the notation that the participants could "submit briefs in support of any contentions which were previously filed and which have now been rejected by the Board" (*id.* at p. 13). Subsequently, the petitioners filed a brief in which they argued at some length that consideration of their contentions is mandated by the National Environmental Policy Act — a subject the Board's oral rulings had not addressed.

On May 30, 1980, the Licensing Board entered a second unpublished order, denying the petition. In that order, the Board made no reference whatsoever to the petitioners' NEPA claim. Rather, the Board simply stated (at 11): "Contentions 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; and 15 are rejected as issues in the early site suitability hearing. Many, if not all, of these contentions will, if offered, be acceptable at later hearings in this matter."

Invoking 10 CFR 2.714a, the joint petitioners have taken this appeal. They complain of both the rejection of their contentions[5] and the determination that Mr. Gogol lacked standing to intervene. In response, the applicants and the staff urge affirmance.

II

As has been seen, the two orders below are not very illuminating insofar as they relate to the questions raised by the appeal before us. To begin with,

[5]More specifically, the appeal focuses on ten of those contentions, which it is said (Br. at p. 4) relate to "issues which must be considered at some time in the Carroll County proceedings pursuant to [NEPA]." The remaining five contentions not embraced by the appeal were those dealing with such matters as economic burden on ratepayers; financial qualifications; uranium fuel availability; inadequacy of insurance coverage; and emergency evacuation.

although the October 1979 order did announce the Licensing Board's conclusion that Mr. Gogol lacked standing to intervene, it neither set forth specifically the basis for that conclusion nor referred to the fact which the Board presumably thought dispositive (*i.e.,* that that petitioner resided at a considerable distance from the proposed facility site). Nor does it appear that the Board passed upon Mr. Gogol's alternative argument that he should be allowed to participate in the proceeding as a matter of discretion.[6] See *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 614-17 (1976); see also, *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-397, 5 NRC 1143, 1145 (1977).

Much the same is true of the Board's treatment in both orders of the question of the present litigability of the contentions advanced in the petition. The October 1979 order did not take note of the summary oral rejection of fourteen of those contentions during the course of the prehearing conference, let alone cite the pages of the conference transcript at which that rejection appears. It was thus left to us to canvass the entire transcript in search of the Board's rulings. With regard to the fifteenth contention (as to which the October order reserved judgment), the May 1980 order did not explain why it was then being rejected. Further, the latter order did not confront the petitioners' NEPA argument which had been advanced in their brief (submitted with the Board's authorization in the interval between October and May).

We call attention to these matters for the purpose of enlisting the cooperation of the Board below in insuring that its future orders in this proceeding either (1) explicate the foundation for each ruling contained therein; or (2) in the event that the ruling was earlier announced and explained orally, contain an express reference to where the explanation can be found. In this connection, we assume the Board's awareness of its obligation to make known the underpinnings of its determinations on all significant matters of law and fact. *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-504, 8 NRC 406, 410-11 (1978) and cases there cited. We might remand the matter for the Licensing Board to explain fully the basis of its decision. But no such remand is necessary here. For it is possible to decide the appeal at hand even without the benefit of the reasoning which led the Board to its undeveloped conclusions.

A. The appropriate starting point in our examination of the merits of the appeal is the petitioners' attack upon the total dismissal of their petition

[6]Tr. 10.

for want of a now litigable contention. In this regard, petitioners maintain that ten of the fifteen contentions put forth by them[7] raise issues which must be explored in this early site review proceeding — rather than deferred for scrutiny at such time as the Licensing Board may be called upon to address the issuance of a construction permit or limited work authorization.

1. It is settled that, in determining whether it is empowered to entertain a particular issue, a licensing board must respect the terms of the notice of hearing published by the Commission for the proceeding in question. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976); see also, *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), ALAB-577, 11 NRC 18, 25-26, *reversed in part on other grounds,* CLI-80-12, 11 NRC 514 (1980). Here, the notice of hearing was most explicit in identifying the issues which are to be considered in this early site review proceeding. See at p. 20, *supra.* Each of them is concerned with one aspect or another of the suitability of the Carroll County site for the placement of a nuclear power facility. As is equally obvious, none of the ten contentions currently before us comes within their scope. Indeed, petitioners themselves implicitly so concede.

In thus delineating with some precision the ambit of the proceeding, the Commission was giving effect to its regulations governing early site reviews. See 10 CFR 2.101(a-1), 2.600-2.606. We need not rehearse those regulations in detail here. Suffice it to say that they contemplate that any early review, hearing and partial initial decision will be confined to those site suitability issues as to which the applicant has (1) sought such action and (2) supplied the information required to be furnished in its preliminary safety analysis report (PSAR) and environmental report (ER).[8] In keeping with this contemplation, Section 2.604(a) provides that:

> Where an applicant for a construction permit for a utilization facility subject to this subpart requests an early review and hearing and an early partial decision on issues of site suitability pursuant to 2.101(a-1), the provisions in the notice of hearing setting forth the matters of fact and law to be considered, as required by 2.104, shall be modified so as to relate only to the site suitability issue or issues under review.[9]

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[7]See fn. 5, *supra.*

[8]An applicant invoking the early site review procedures need provide at the time its application is filed only that PSAR and ER information "which relates to the issue(s) of site suitability for which an early review, hearing and partial decision are sought...." 10 CFR 2.101(a-1)(1). The remainder may be later furnished.

[9]Section 2.104(b) prescribes the content of a notice of hearing in a construction permit proceeding.

2. The petitioners assert, however, that an early site suitability determination constitutes a "major Federal action significantly affecting the quality of the human environment" within the meaning of Section 102(2)(C) of NEPA, 42 USC 4332 (2)(C). For this reason, we are told, it is not sufficient for the staff now to prepare (as it intends to do) an environmental impact statement confined to the site suitability issues as to which an early decision has been sought by the applicant. Rather, according to the petitioners, fulfillment of the NEPA command necessitates a full staff environmental assessment of the proposed project, including an appraisal of the need for the power which would be generated by it. By the same token, so the argument goes, the Licensing Board has a statutory obligation to conduct a complete NEPA review in the course of the site suitability proceeding.

Both the applicant and the staff regard this thesis to be an impermissible attack upon the Commission's early site review regulations. See 10 CFR 2.758. We perceive no need, however, to pass upon that question. It is clear to us that the petitioners have misinterpreted the NEPA command. More particularly, we are satisfied that the statute imposes no obstacles to the Commission's adoption of the bifurcated environmental review process sanctioned by the regulations in question.

a. To begin with, the fundamental premise undergirding petitioners' reasoning is faulty. An early site review does not, of itself, amount to "major Federal action significantly affecting the quality of the human environment." It neither does nor can authorize any work on the site which might produce environmental effects. In order for such work to commence, the applicant must have in hand either a construction permit or a limited work authorization. Neither of those documents can issue unless and until a full environmental review has been undertaken and completed by both the staff and the Licensing Board. 10 CFR 50.10(e), 51.5(a)(1), 51.52.

This does not mean that NEPA has no bearing upon an early site review. As recognized in the notice of hearing here (see at p. 20, *supra*), the review has to be conducted in conformity with that statute insofar as it encompasses issues pertaining to the suitability of the proposed site from an environmental standpoint. For this reason, the Licensing Board will have before it so much of the staff's environmental impact appraisal as addresses those issues. The significance of our determination regarding the operative effect of an early site review is, once again, simply that such a review need not entail an assessment of environmental concerns which are unrelated to the suitability of the proposed site.

b. The purpose served by an early site suitability review is illumed by our decision in *Potomac Electric Power Company* (Douglas Point Nuclear

Generating Station, Units 1 and 2), ALAB-277, 1 NRC 539, 546-47 (1975).[10] As there pointed out, such a review — even if conducted well in advance of the ultimate determination on the construction permit application — might disclose either that the site does not meet applicable safety standards or that it has environmental shortcomings which (at least if not remediable) would very likely lead to its rejection. Such a disclosure at the threshold would benefit the public as well as the applicant. In the instance of a site which was found unsatisfactory *per se,* for example, it would obviate "wasteful expenditures of both time and money...by alerting the applicant promptly to the need to find a better location for its plant." *Id.* at p. 546.

The value of early findings on any licensing issue — whether safety or environmental — is heavily influenced by the degree of likelihood that those findings will lose their validity over the passage of time. With respect to suitability findings based upon the physical characteristics of the site and its environs (*e.g.,* local geological and weather conditions), that risk would not appear substantial. *Douglas Point, supra,* 1 NRC at p. 546. But the same is not true of early determinations on such issues as need for power, which has been singled out by the petitioners (Br. at p. 7) as the one "most urgently warrant[ing] consideration" at this time. If recent experience teaches anything, it lays to rest any serious doubt that predictions of future electricity demand are fraught with uncertainty and, more probable than not, will require significant revision from year to year.

Thus, there is every practical reason why an early site review should be limited to issues of the type described in the notice of hearing published in this case. In this connection, the fact that an applicant has requested such review on a particular issue does not insure that it will be forthcoming. The regulations reserve to the Commission the discretion to deny the request if, *inter alia,* it appears that an early partial decision on the issue "would not be in the public interest considering (i) the degree of likelihood that any early findings...would retain their validity in later reviews...." 10 CFR 2.605(b)(2).

c. Our attention has been directed by the petitioners to no judicial authority which might lend any support to the notion that NEPA forbids an early appraisal of the suitability of a proposed nuclear power facility site unless accompanied by the evaluation of all other environmental aspects of plant construction and operation.[11] And there is evidence that, for its part, the Council on Environmental Quality does not discern any inconsistency between the statute and the Commission's early site review regulations. In

[10]*Douglas Point* was specifically alluded to by the Commission in connection with its promulgation in 1977 of the early site suitability review regulations. See 42 FR 22882 (May 5, 1977).

[11]Without belaboring the point, the decisions cited by them simply do not stand for that proposition.

commenting upon the regulations when still in draft form, the Council expressly endorsed what it perceived to be their underlying concept — "namely, that genuine consideration of alternative nuclear facility sites is more likely to occur if an applicant has not invested substantial amounts in site-specific design at the time of site review."[12]

B. It follows from the foregoing that the Licensing Board correctly concluded that none of the joint petitioners' contentions is now litigable. Consequently, the outright denial of their petition was mandated.

In these circumstances, it is unnecessary to reach the question whether Mr. Gogol lacked standing to intervene. We can also pass the question whether, not having been taken within ten days of the entry of the October order, the appeal on that issue was untimely. See 10 CFR 2.714a.

The denial of the joint petition for leave to intervene is *affirmed.*

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

[12]See April 27, 1977 letter from the Council to the Chairman of this Commission (appended to the staff's brief as Attachment A), at p. 1. The Council did go on to note a few concerns respecting the manner in which the concept was implemented in the draft which had been submitted to it. In all respects here material, its suggested revisions to accommodate those concerns were thereupon adopted by the Commission.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman

In the Matter of **Docket No. 50-309**

MAINE YANKEE ATOMIC POWER COMPANY (Maine Yankee Atomic Power Station)

July 29, 1980

The Appeal Board Chairman summarily dismisses as interlocutory the appeal of a petitioner for intervention from the Licensing Board's order postponing a special prehearing conference in this proceeding.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Commission's Rules of Practice prohibit interlocutory appeals from licensing board rulings made during the course of a proceeding. 10 CFR 2.730(f). The single exception to this prohibition, found in 10 CFR 2.714a, allows an appeal insofar as a petitioner for intervention is concerned only from an order denying his petition outright. *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-370, 5 NRC 131 (1977).

APPEARANCES

Mr. David Santee Miller, Washington, D.C., for the petitioner, Sensible Maine Power.

MEMORANDUM AND ORDER

On July 14, 1980, the Licensing Board entered an unpublished interlocutory order in this proceeding which granted the licensee's motion to postpone the special prehearing conference until after October 1, 1980. A

petitioner for intervention in the proceeding, Sensible Maine Power, seeks to appeal from that order.

The appeal must be summarily dismissed. Section 2.730(f) of the Commission's Rules of Practice, 10 CFR 2.730(f),

> contains a general prohibition against interlocutory appeals from licensing board rulings made during the course of a proceeding. The single exception to this prohibition is found in 10 CFR 2.714a. Insofar as a petitioner for intervention is concerned, that Section allows an appeal from an order concerning his petition if — but only if — the order denied the petition outright.

Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), ALAB-370, 5 NRC 131 (1977), and cases there cited.[1]

Appeal *dismissed.*
It is so ORDERED.

FOR THE APPEAL BOARD
CHAIRMAN

C. Jean Bishop
Secretary to the Appeal Board

This action was taken by the Appeal Board Chairman under the authority of 10 CFR 2.787(b).

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[1]Sensible Maine Power would not be aided were its papers to be treated alternatively as a request that we exercise our authority to review the July 14 order as a matter of discretion. See 10 CFR 2.718(i) as interpreted in *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975). We have made it clear that that authority normally will not be invoked to entertain scheduling controversies. See *e.g., Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-541, 9 NRC 436, 427-38 (1979), and cases there cited. Our attention has been called to no extraordinary circumstances which might warrant making an exception to the general rule in this instance.

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 **Docket No. 50-389 CP**

FLORIDA POWER AND LIGHT COMPANY
(St. Lucie Nuclear Power Plant, Unit No. 2) **July 30, 1980**

Upon completion of an evidentiary hearing, the Appeal Board: (1) determines that the design of the circuits connecting the facility with the offsite electrical grid, the principal source of electric power under emergency shutdown conditions, is in compliance with Commission requirements; (2) concludes that the probability of a complete loss of electric power at the facility (other than onsite battery power) is sufficiently high to warrant designating such a loss a "design basis" event; and (3) directs the applicant to include in its FSAR both an analysis demonstrating the ability of the plant, in its final design, to withstand a total loss of such power and a description of the training program and operating procedures to be used in response to such a loss.

TECHNICAL ISSUES DISCUSSED:

Consequences of concurrent loss of offsite and onsite AC power; diesel generator reliability; and single failure criterion.

APPEARANCES

Messrs. Norman A. Coll and **Mario Villar,** Miami, Florida, and **Harold F. Reis,** Washington, D.C., for the Florida Power and Light Company, applicant.

Messrs. Terrence J. Anderson, Coral Gables, Florida, and **Martin Harold Hodder,** Miami, Florida for Rowena E. Roberts *et al.,* intervenors.

Messrs. William J. Olmstead and **William D. Paton** for the Nuclear Regulatory Commission staff.

DECISION

Introduction and Summary. This decision disposes of several questions addressed at an evidentiary hearing we conducted to consider the adequacy of electric power systems for Unit 2 of the St. Lucie nuclear plant. As recounted more fully in Part I (at 33 - 35 below), the hearing was necessary to review matters that arose shortly after our affirmance of a Licensing Board decision authorizing issuance of a permit to Florida Power and Light Company to construct that plant. Briefly, because of Florida's peninsular shape the applicant's electrical distribution system (grid) can be connected with the grids of other utilities only to the north. This suggested — and the applicant's operating history tended to confirm — that FP&L's grid might be less reliable than ones interconnected with multiple grids. There was no indication, however, that the onsite emergency power system at St. Lucie had been designed to compensate for a lesser degree of grid stability and the Licensing Board had no occasion to explore the matter. We therefore determined that further proceedings were necessary for that purpose and elected to conduct them ourselves.

In Part II we discuss the first of two major concerns explored at the hearing: the St. Lucie station's compliance with General Design Criterion (GDC) 17, which deals with offsite and onsite electrical power systems. We review (a) the circuits connecting St. Lucie to the applicant's electrical grid (at pp. 35-37); (b) the means by which offsite power to St. Lucie may be or has been interrupted and the probability of such occurrences in the future (at pp. 37 - 41); and (c) improvements now being undertaken to increase the reliability of the applicant's grid (at pp. 42-43). We conclude that: (1) the three circuits between St. Lucie and the applicant's grid have been designed and located to minimize the likelihood of their simultaneous failure as GDC 17 requires; (2) the reliability of the applicant's electrical distribution system is improving; and (3) as elsewhere, loss of offsite power must nevertheless be anticipated during the operating life of St. Lucie Unit 2.

Part III (at p. 44) addresses our second main concern, which proved to be of principal significance: whether Unit 2 should be designed to withstand the events connected with a station blackout (*i.e.,* complete loss

of alternating current (AC) power). First, in order to assess the need to design for a complete loss of AC power, we consider the reliability of the diesel generators used to supply emergency AC power onsite and the adequacy of the "single failure criterion" as applied to those generators (at pp. 44 - 52). We conclude that there is a sufficiently high probability of station blackout to warrant protecting against it in designing the plant (*i.e.*, to make it a "design basis" event). Next, we trace the circumstances that can be expected to follow a loss of all AC power (at pp. 52 - 57). We conclude that although it appears that the plant can accommodate a station blackout of some duration, a thorough analysis of the plant's behavior during such an event must be performed to ensure that this is true. Third, we examine the time required to reinstate some source of AC power, whether from offsite or by returning an onsite diesel generator to service (at pp. 57 - 61). We find the evidence to indicate that power can reasonably be expected to be restored soon enough that a station blackout will not result in core damage or undue hazard to the public health and safety. But we emphasize our view that the plant's ability to survive a loss of AC power rests in large measure on the response of the operators. This in turn depends on how well they have been trained to maneuver through such an event and whether they have procedures to guide them in that abnormal operation. The need for training and procedures extends also to those operations which may be necessary to restore AC power to the station following a blackout. Finally, we turn to measures for decreasing the probability and consequences of a complete loss of AC power (at pp. 61 - 63).[1]

A summary of our ultimate findings and conclusions, together with our order setting out the appropriate action to be taken, appears in Part IV (at pp. 63 - 65).

Our finding that station blackout should be considered as a design basis event for St. Lucie Unit 2 manifestly could be applied equally to Unit 1, already in operation at that site. By a parity of reasoning, this result may well also obtain at other nuclear plants on applicant's system, if not at most power reactors. Our jurisdiction, however, is limited to the matter before us — licensing construction of St. Lucie 2. Beyond that, we can only alert the Commission to our concerns.

We are aware that the staff has been evaluating the station blackout scenario under Task Action Plan A-44. This study was started in 1977, however, and according to the 1979 NRC Report to Congress its completion is not anticipated until 1982. For the reasons developed in this

[1]In this connection, we note that the applicant has committed itself *first*, to test the reliability of its diesel generators initially and periodically in accordance with Regulatory Guide 1.108 (at p. 61 - 62); and *second*, to develop operating and training procedures for coping with a station blackout (at pp. 62 - 63).

opinion we believe the problem merits more immediate attention. We therefore respectfully suggest to the Commission that, for nuclear power facilities with a station blackout likelihood comparable to that of St. Lucie Unit 2, expeditious measures be taken to ensure that these plants and their operators are equipped to accommodate such an event in a manner that assures public health and safety.

I.

BACKGROUND

Our involvement with these issues began in October 1977, when we affirmed the Licensing Board's initial decision authorizing the issuance of a construction permit for the facility.[2] Two weeks later, the NRC staff apprised us and the other parties of allegations made by Robert D. Pollard (a former Commission staff member) in a letter to the Attorney General of the United States. Among other things, those allegations questioned the reliability of the offsite power grid serving the St. Lucie facility.[3] We amended our decision to retain jurisdiction over those questions and called upon the applicant and staff to supply certain information regarding them.

Our review of the material submitted raised a number of questions. The geographic configuration of the Florida peninsula obviously limits applicant's opportunities to connect its grid system with others. This, it seemed, would make its electrical distribution system less reliable than one located where greater interconnections are possible. The Florida Power and Light Company's operating history appeared to confirm that observation. This caused us to be concerned about the onsite power system's apparent lack of features designed to compensate for the reduced reliability of offsite power. Consequently, on March 10, 1978 we directed the parties to answer a number of questions about that apparent design inadequacy and to advise us whether they believed further proceedings were necessary.

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[2]ALAB-435, 6 NRC 541 (1977), *affirming* LBP-77-27, 5 NRC 1038 (1977). In ALAB-435, we retained jurisdiction to explore further the issue of steam generator tube integrity. 6 NRC at pp. 544-46. Upon consideration of additional information we terminated that jurisdiction in ALAB-537, 9 NRC 407 (1979). Still before us is the radon release issue, which is also pending in a number of other proceedings; that issue will be disposed of separately. See *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-480, 7 NRC 796 (1978).

[3]The letter also suggested that the staff had improperly failed to alert the Licensing Board to the grid stability question. The Commission investigated the matter and concluded that the staff's failure to include pertinent information in its Safety Evaluation Report (SER) for the facility was a result of confusion rather than willful misconduct. See ALAB-537, 9 NRC at pp. 408 and 412 (fns. 5 and 16). The allegations of weaknesses in the SER were one reason for our conducting an evidentiary hearing on grid stability.

By June of 1978 we had received both the applicant's materials and the staff's reply. The intervenors, private individuals residing in the St. Lucie area, filed no responsive information immediately. Rather, on August 11, 1978 they moved to advance a "new" contention on grid reliability and to suspend the construction permit pending completion of a hearing on that issue. The applicant and staff opposed both requests. With our leave, intervenors replied belatedly on January 30, 1979.

The substantial amount of information submitted by the parties convinced us that an evidentiary hearing was needed to explore our questions about the stability of Florida Power and Light's electrical grid and the reliability of AC power for St. Lucie Unit 2.[4] We had several particular concerns: (a) the implications of then recent grid disturbances (including a complete loss of offsite power on May 14, 1978); (b) the staff's opinion that offsite power was less assured for St. Lucie than for nuclear plants in nonpeninsular areas,[5] and (c) the lack of compensation for that situation in the design of the onsite power system. We therefore ordered a hearing held before us on those concerns and directed the parties to answer additional questions in preparation for it.[6]

Briefly, our questions involved the St. Lucie station's compliance with General Design Criterion 17 (dealing with offsite and onsite power system requirements);[7] an analysis of the probability of and consequences that might result from a loss of offsite power with a simultaneous failure of onsite power (in other words, a complete loss of AC power); whether that sequence of events should be guarded against in designing the plant (that is, whether it should be a "design basis" event); the measures that might be taken to assure or increase system reliability during an "alert status"; and any ongoing or planned improvements that might enhance the reliability of the applicant's system.

We conducted a four-day evidentiary hearing in Florida in early December 1979. The applicant and staff presented expert testimony and supporting exhibits; the intervenors restricted their participation to cross-examination of witnesses.[8] Based on the record established at the hearing, we have concluded that the St. Lucie station complies with General Design Criterion 17. Nevertheless, the probability and potential consequences of a

[4]We denied the intervenors' motion for a stay and dismissed as moot their motion to add a new contention on the grid stability issue in light of our own prior decision to consider the matter. Intervenors were told they would be given the opportunity to participate in the forthcoming hearing.

[5]Fitzpatrick Affidavit of June 12, 1978, at pp. 5-6.

[6]See ALAB-537, *supra*, 9 NRC at pp. 413-16.

[7]See 10 CFR Part 50, Appendix A ("General Design Criteria for Nuclear Power Plants").

[8]Although the other parties submitted proposed findings for our consideration, the intervenors chose not to do so.

complete loss of AC power at the site require that such a "station blackout" be treated as a design basis event with all that this entails. An elucidation of our findings, conclusions, and reasoning follows.

II.

GENERAL DESIGN CRITERION (GDC) 17

1. This criterion establishes the basic requirement that both offsite and onsite electrical power systems must be available to a nuclear plant to supply the electrical needs of structures, systems, and components important to safety.[9] Our primary concern was with the criterion's third paragraph. This states that:

> [e]lectric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. A switchyard common to both circuits is acceptable.[10]

As we noted in our April 5, 1979 memorandum,[11] although three transmission lines connect the St. Lucie station to the applicant's grid, all

[9]See fn. 7, *supra.*

[10]We also raised a question about the first paragraph of the criterion which, read literally, appears "to establish an unattainable set of conditions for electrical power systems generally." ALAB-537, 9 NRC at p. 414. We initially read that paragraph to call for an assessment of the offsite power system that assumed the onsite power system was not functioning but, nevertheless, required sufficient electrical capacity to enable the plant to survive "anticipated operational occurrences" — one of which might reasonably be a loss of the offsite power system itself. The applicant's and staff's testimony, however, demonstrated that our literal interpretation misconstrued the purpose of GDC-17. That purpose is to ensure that sufficient power is available for the plant's protective systems to function. The applicant's witness Mr. Flugger explained that the onsite power system is viewed as a "standby" system to provide electricity when the offsite or "preferred" power system is not available. Flugger, fol. Tr. 483, at pp. 4-5; see Regulatory Guide 1.32 (endorsing IEEE Standard 308-1974, which employs the "preferred" and "standby" terminology, as an adequate basis for compliance with GDC-17). Mr. Fitzpatrick, a staff witness, concurred, adding that our reading of GDC-17 would have the effect of requiring a "single-failure-proof" offsite power system. This he characterized as "neither attainable nor within the purview of the NRC." Fitzpatrick, fol. Tr. 624, at pp. 12-13. Finally, Mr. Flugger pointed out that, based on the safety analysis required at the construction permit stage by 10 CFR 50.34, limiting conditions for operation would be established pursuant to 10 CFR 50.36 and Regulatory Guide 1.93. These would make operation of Unit 2 with both onsite diesel generators down a violation of the "Technical Specifications," *i.e.,* contrary to the conditions of the facility's operating license. Flugger, fol. Tr. 483, at pp. 5-6. This would tend to minimize the risk posed by our literal reading of GDC-17. The parties thus satisfied our concern. We did not pursue the matter further and instructed them that there was no need to prepare findings on this question. See Tr. 875-76.

[11]ALAB-537, 9 NRC at p. 414.

three terminate at the same substation. That substation, "Midway," is on the Florida mainland, across the Indian River from and ten miles west of the St. Lucie site on Hutchinson Island. On May 14, 1978, all power at Midway was lost. This strongly suggested to us that the three circuits were in fact susceptible to simultaneous failure; hence our questions about whether the St. Lucie station complied with the foregoing requirements of GDC-17.

The applicant responded with the joint testimony of Ernest L. Bivans, Florida Power and Light Company's Vice President in charge of system planning; Michel P. Armand, a supervising engineer responsible for the areas of reliability and system security in the company's system planning department; and Wilfred E. Coe, the applicant's director of power supply.[12] The staff's witness on this subject was Robert G. Fitzpatrick, an NRC senior power systems engineer.[13] Mr. Fitzpatrick's work since 1974 has involved the technical review of electrical systems. The gravamen of their testimony was that the present system connecting St. Lucie to the Midway substation does satisfy Design Criterion 17.[14]

Loss of offsite power is expected to occur at least once during the life of a nuclear power plant;[15] the goal of power system design is to minimize and accommodate rather than preclude the possible occurrence of that event. In the staff's view, we have misconstrued the purpose of the GDC-17 provision to which we were referring. The staff points out that its focus is directed at minimizing the possiblity that the circuit connecting a nuclear power plant to the grid will all fail simultaneously; it is not aimed at reducing the likelihood that offsite power will be lost by reason of grid failure.[16] Thus, from the standpoint of GDC-17, the important consideration for the connecting circuits is their reliability. As long as they are as reliable as the offsite power system itself, where they connect to that system is of "secondary concern."[17]

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[12]Armand, Bivans and Coe (hereinafter referred to as Armand *et al.*) fol. Tr. 45.

[13]Fitzpatrick, fol. Tr. 624.

[14]Armand *et al.*, fol. Tr. 45, at pp. 3-8; Fitzpatrick, fol. Tr. 624, at p. 3.

[15]See 10 CFR Part 50, Appendix A, which provides a definition of "anticipated operational occurrence" that includes loss of offsite power as an event that is expected to occur at least once during the plant's operating life.

[16]Fitzpatrick, fol. Tr. 624, at p. 3. Grid failure is addressed in the fourth paragraph of GDC-17, which requires, among other things, the inclusion of provisions "to minimize the probability of losing electric power from any of the remaining supplies as a result of, or coincident with, the loss of power...from the transmission network."

[17]Fitzpatrick, fol. Tr. 624, at p. 5. The relationship between location and reliability of the connecting circuits is illustrated by Mr. Fitzpatrick's responses to our questions concerning a hypothetical situation posed by us. We asked what might be required pursuant to GDC-17 if some potentially serious hazard were present in the vicinity of the Midway substation, using as an example a railway terminal presenting a risk of fire from a heavy volume of traffic in liquid

(FOOTNOTE CONTINUED ON NEXT PAGE)

2. The testimony suggested three means by which offsite power to the St. Lucie station could become unavailable: simultaneous failure of the circuits connecting St. Lucie to Midway; loss of the Midway substation; and failure of the electrical grid itself. We examine those three failure modes in an effort to judge the relative likelihood of their occurrence.

The parties did not specifically assess the probability of simultaneous failure of the three circuits connecting St. Lucie to Midway. Rather, they focused on the presence of features designed to minimize that likelihood. St. Lucie is connected to the grid through the Midway substation by means of three 240 kV transmission lines (circuits) separated sufficiently to preclude their physical interference with one another.[18] The circuits enter Midway in bays spaced 35 to 40 feet apart.[19] As shown in Figure 1 (at p.38), within Midway each of the three circuits is tied to the grid by means of two independent busses (separated by a distance of about 150 feet) through a "breaker-and-one-half" scheme.[20] This configuration provides that even if both 240 kV busses at Midway are lost, power coming directly from other substations should remain available to St. Lucie along each of the three connecting lines. Substation components are protected so as not to disrupt one another; transformers are located about 150 feet apart in concrete reservoirs filled with gravel to contain any oil leakage and prevent the spread of possible fires.[21] In fact, applicant and staff witnesses testified that the St. Lucie-Midway connection exceeded the basic requirements of GDC-17. Three physically independent circuits exist instead of the requisite two.[22] And, whereas GDC-17 requires one of those circuits to be designed to be available to supply offsite power to the onsite distribution system within a few seconds following a loss-of-coolant accident, the breaker-and-one-half scheme at St. Lucie makes two circuits immediately available.[23]

(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

propane. The witness explained that, *in those circumstances,* termination of all three circuits at Midway *would not* satisfy the criterion's requirements. This follows because running one or more of the lines to another substation would further increase the reliability of circuits (by reducing the likelihood of their simultaneous failure due to an event at Midway). Mr. Fitzpatrick stressed that this was not the case here. See Tr. 707-13.

[18]Armand *et al.,* fol. Tr. 45, at p. 7.

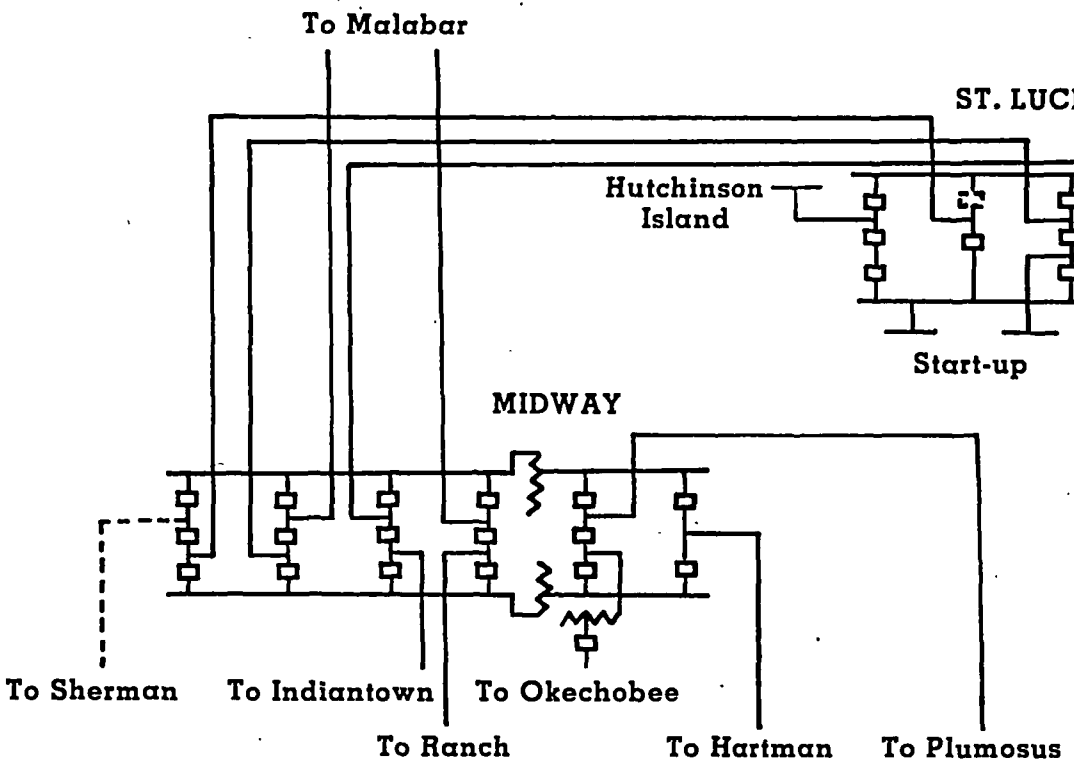
[19]Tr. 668.

[20]This configuration employs three breakers for every two circuits involved. D.G. Fisk, *Standard Handbook for Electrical Engineers* (10th Ed.) at pp. 10-89.

[21]Armand *et al.,* fol. Tr. 45, at pp. 6-7, Tr. 78-83, 229-31.

[22]Armand *et al.,* fol. Tr. 45, at p. 8; Fitzpatrick, fol. Tr. 624, at 3-4; Tr. 627-28.

[23]Tr. 626-27.



Adapted from Armand et al., fol. TR. 45, Attachment 5.

FIGURE 1
CIRCUITS CONNECTING ST. LUCIE TO MIDWAY

Thus, the testimony indicates the likelihood of simultaneous failure of the circuits has been minimized. The fact that there have been no simultaneous failures of the St. Lucie to Midway transmission lines confirms this.[24] In the staff's view, the May 14, 1978 loss of power from the Midway substation was an instance of grid unavailability (or separation of Midway from the grid) rather than a failure of the three circuits connecting St. Lucie to Midway.[25]

Offsite power may nevertheless be lost in ways unrelated to the reliability of the connecting lines. Termination of all three circuits at Midway presents a risk of such loss caused by the failure of the substation itself. Applicant's witnesses testified that the substations and transmission lines are designed to prevent outages resulting from the effects of strong winds, lightning, and various forms of environmental contamination, such as salt deposition.[26] However, certain kinds of accidents (for example, a fire or heavy aircraft crash) conceivably might disable the Midway substation. Mr. Bivans acknowledged that such incidents could be postulated, but doubted that fire alone would disable the entire substation. He explained that the worst kind of fire would be one in the auto transformers, and that the substation had been designed to minimize the likelihood of such a fire starting or spreading.[27] In Mr. Bivans' judgment, the probability of a complete outage at Midway as a result of a major accident was "very remote."[28] Similarly, Mr. Fitzpatrick testified that the staff's acceptance of the St. Lucie to Midway connection as satisfying GDC-17 hinged on the absence of any potentially serious threat to the three circuits in the vicinity of the Midway substation.[29]

On May 14, 1978, a series of events occured which did isolate Midway from the applicant's grid and cut off all offsite power to St. Lucie. While one of the transmission lines connecting Midway to the grid from the south was out of service for testing, an operator at another station made a switching error that caused a second line serving Midway to go out. An improperly connected polarizing circuit at Midway then caused the remaining lines to trip, separating Midway from the grid.[30] As we mentioned (at 37, *supra*), the staff characterized this as a grid failure rather than a simultaneous loss of all three lines from Midway to St. Lucie.

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[24]Fitzpatrick, fol. Tr. 624, at p. 3.
[25]*Ibid.* See the further discussion of this incident at p. 40, *infra.*
[26]Armand *et al.*, fol. Tr. 45, at p. 4; Tr. 274-75.
[27]Tr. 230-31.
[28]Tr. 234.
[29]Tr. 707-710. See also fn. 17, *supra.*
[30]Armand *et al.*, fol. Tr. 45, at pp. 5-6, note 8; Tr. 64-65.

Our concern with the May 1978 incident prompted an inquiry into the feasibility and advisability of supplementing the circuits between St. Lucie and Midway with a connection to a different point on the grid. Neither the applicant nor the staff studied those options extensively, however. In their judgment, the geographical configuration of the Florida grid is such that alternate connections would not significantly increase the grid's overall reliability and might decrease its operating flexibility.

The applicant did analyze the possibility of running one of the three existing lines to the nearby Ranch substation.[31] This would of course increase the number of substations directly tied to St. Lucie. However, because the present configuration with the breaker-and-one-half scheme provides the same electrical tie to the Ranch substation, the applicant found that the change would not make any electrical difference. Furthermore, the shift would require removal of the breakers at Midway and this would reduce the grid's operating flexibility. Moreover, reducing the number of lines tied into Midway would decrease that substation's reliability without concurrently increasing that of the Ranch substation. The applicant also considered other system configurations for the three existing circuits but rejected them, too, as inferior to the present arrangement.[32]

The staff agreed that, although a direct St. Lucie-to-Ranch connection might lessen the possibility of recurrence of a failure like the one in May 1978, Midway and Ranch would remain subject to the same power outages. The staff essentially agreed that the system's overall reliability would not be significantly enhanced by any of the various options that the applicant had analyzed.[33]

The reliability of the Midway substation and its connections to St. Lucie notwithstanding, offsite power to that nuclear plant may still be lost if the grid itself is lost. To minimize that possibility, Midway is tied to a number of different points throughout the grid. As shown in Figure 2 on page 41, these are: (a) two 240 kV circuits to the Malabar substation to the north; (b) two 240 kV circuits to the Ranch substation to the south, one direct and one via the Indiantown and Pratt and Whitney substations; (c) one 240 kV circuit to the Martin Plant to the southwest by way of the Sherman substation; and (d) two 138 kV lines, one north to Malabar and the other south to the Plumosus substation.[34] The applicant's witnesses testified that

[31]Armand *et al.*, fol. Tr. 45, at p. 8.
[32]Armand, fol. Tr. 147, at p. 3 and Attachment B.
[33]Tr. 716-17.
[34]Armand *et al.*, fol. Tr. 45, Attachment 1, at pp. 6-7, 9, and Attachment 6.

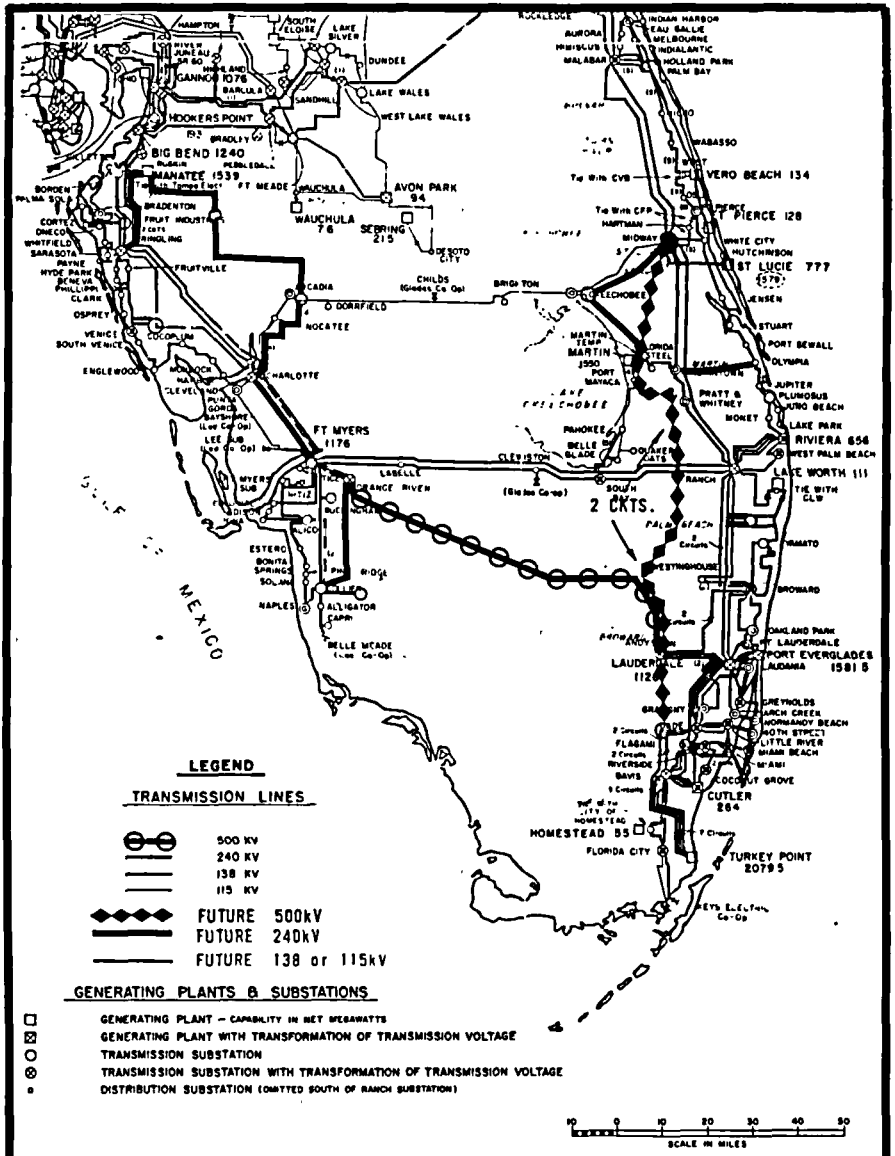

FIGURE 2
STATE OF FLORIDA ELECTRIC SYSTEM MAP
(Excerpted From Attachment to Affidavit of Mr. Ernest L. Bivans
Dated March 31, 1978)

Midway has lost all power on only two occasions since put into operation in November 1965.[35]

3. The reliability of these ties is nevertheless constrained by the strength of the Florida Power and Light Company's power distribution network. We asked the parties to discuss any existing or planned measures to enhance the reliability of the applicant's electrical power system, particularly in view of the large number of personnel errors that apparently led to the May 14, 1978 outage and contributed to the May 16, 1977 disturbance.[36] Applicant and staff witnesses testified that Florida Power and Light has undertaken a continuing program to improve the offsite power system for St. Lucie by (1) strengthening power generation and transmission capability; (2) improving the training and guidance of field personnel; and (3) building a centralized, automated facility to monitor and control the company's grid system.[37]

Major additions to the grid are being made and are expected to be completed this summer, well before St. Lucie Unit 2 is scheduled to begin operating. A new 240 kV tie is being constructed between the peninsular Florida grid and the Southern Company. This will connect FP&L directly to the Georgia Power Company's system and will enable the two systems to remain interconnected (instead of separating, as they have done in the past) in the event of a major system disturbance.[38] Several additions are also being made to the 500 kV portion of the applicant's system. These will triple its length, strengthen the Midway substation, and provide a direct source of offsite power to St. Lucie by connecting Midway to Unit 1 of the new Martin generating station.[39] The staff agreed that the new 240 kV tie to Georgia would generally be helpful in strengthening the applicant's grid system. But it considered the new Martin station and the 500 kV line to the south the more important for the St. Lucie site.[40]

The applicant has also taken steps designed to reduce personnel errors that might lead to system disturbances. Before a switching operation may be made, the proposed system configuration must be analyzed and a switching order must be prepared in accordance with written procedures.[41] According to staff witness Mr. Fitzpatrick, the required analysis and procedures are "major improvements" in the applicant's operations.[42]

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[35]The first incident was on May 16, 1977 and the second was on May 14, 1978. See Armand *et al.*, Tr. 45, at p. 5, fns. 7 and 8.
[36]ALAB-537, 9 NRC at p. 416.
[37]Armand *et al.*, fol. Tr. 45, at pp. 9-12; Fitzpatrick, fol. Tr. 624, at p. 23.
[38]Armand, *et al.*, fol. Tr. 45, at p. 9.
[39]*Id.* at pp. 9-10.
[40]Tr. 845-47.
[41]Armand, *et al.*, fol. Tr. 45, at pp. 10-11.
[42]Fitzpatrick, fol. Tr. 624, at p. 24.

Finally, the applicant has recently put into service a new system control center that allows operators to monitor and control the entire grid from a central location.[43] From it, a dispatcher aided by a computer can monitor the switching process both on a dynamic board depicting the whole system and on an electronic display of the power situation at the substation where the switching is to take place. The system permits the dispatcher not only to test the effect of proposed actions in advance but to intervene if necessary at various points in a switching sequence. The computer is programmed to generate alarms automatically whenever power system limits are approached. There is also a new "dispatcher training simulator." This is a computerized system used to teach operators how to respond more rapidly to emergencies by such techniques as isolating the outage and restoring critical components to the grid.[44] The staff agreed that the new system control center is a powerful operational tool, stressing that the center provides an accurate understanding of the status of the grid, which should eliminate the operator confusion that led to the May 1977 disturbance.[45]

4. In expressing our concern about the likelihood of a complete loss of AC power at St. Lucie, we postulated that based on past experience the probability of an offsite power failure is in the range of 1.0 to 0.1 per year.[46] Frederick G. Flugger, the applicant's supervisor of plant licensing and power plant engineering, estimated a grid outage frequency of about 0.4 per year.[47] He also doubted that any improvements in grid reliability could reduce the system failure rate below once in every ten years (or 0.1 per year).[48] Staff witness Robert L. Baer, a branch chief in the Office of Nuclear Reactor Regulation who supervises reactor safety reviews, agreed with Mr. Flugger. Mr. Baer explained that because of its limited possibilities for interconnection with other utilities' grids, improving the reliability of the Florida grid could not significantly reduce the risk of a loss of offsite power. In his judgment, a reduction factor of two (from 0.4 to 0.2 outages per year) was realistic; a four factor reduction (to 0.1 outages a year) was optimistic.[49] In short, no matter what steps are taken, it is not possible to achieve any dramatic improvement on this score; it would still be likely that offsite power will be lost sometime in the nuclear plant's operating life.

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[43]Members of this Board, along with representatives of the intervenors, applicant, and staff, toured Florida Power and Light's System Control Center in Miami on December 11, 1979. See Tr. 146.
[44]Armand *et al.*, fol. Tr. 45, at pp. 11-12.
[45]Fitzpatrick, fol. Tr. 624, at p. 24.
[46]ALAB-537, 9 NRC at p. 415.
[47]Flugger, fol. Tr. 483, at p. 1.
[48]Tr. 527.
[49]Tr. 772-73.

To sum up on this point, we have reviewed the design and location of the St. Lucie facility to determine its compliance with the requirements of General Design Criterion 17. Our primary concern was that St. Lucie is tied to the FP&L grid by three lines terminating at the same substation. We are uncertain whether such a configuration would be acceptable in every situation. We conclude that it meets GDC-17 in the special geographic circumstances presented here. Any major grid disturbance that would interrupt the flow of emergency power to Midway (and hence to St. Lucie) would probably affect any other substation to which St. Lucie might reasonably be tied.[50] A connection between St. Lucie and elsewhere on the Florida Power and Light grid would therefore not be a significant improvement. Given the absence of potential hazards likely to put Midway out of operation, the three St. Lucie-to-Midway transmission lines are far enough apart to satisfy GDC-17. Any problems St. Lucie might experience with the offsite power system are more likely to result from loss of the grid than from simultaneous circuit failure. And we agree that the steps the applicant has taken to increase the reliability of its grid should be effective.

Nevertheless, a loss of offsite power must be anticipated during the operating life of St. Lucie Unit 2. Even accounting for the improvements being made in the applicant's system, the evidence indicates a probability of a loss of offsite power of at least 0.1 per year. In that event, the facility's electrical needs will have to be supplied by its onsite power system. We turn next to the adequacy of that system.

III.

SIMULTANEOUS LOSS OF OFFSITE AND ONSITE POWER

A major concern of ours throughout this proceeding has been the complete loss of AC power — an interruption of offsite power followed by the failure of onsite power sources. The nature of this occurrence is illustrated by the following postulated sequence of events: A separation of the plant from the electrical grid causes a turbine trip, thereby resulting in an automatic shutdown of the reactor and a consequent loss of electrical power generated at the St. Lucie station. If the onsite emergency diesel generators then fail to start on demand, the plant will be left without the AC power required to permit functioning of its shutdown, cooling and other safety systems. As we previously explained, this scenario appears to have a probability in the range of 10^{-4} to 10^{-5} per year.[51] A failure to restore AC

[50]See Tr. 70-71, 716-17.

[51]ALAB-537, 9 NRC at pp. 415-16.

power in a timely manner could result in an unprotected loss-of-coolant accident with severe consequences for the public health and safety. We therefore directed the parties to address whether the complete loss of AC power should be taken into account in the design of St. Lucie Unit 2. Based on our review of the evidence presented at the hearing, we conclude that station blackout should indeed be made a design basis event.

A. Need To Design for Loss of All AC Power

In our order of April 5, 1979, we characterized the likelihood of loss of all AC power at St. Lucie as the product of two factors: (1) the probability of an offsite power failure — which, based on historical events, seemed to lie in the range of 1.0 to 0.1 per year; and (2) the probability of a simultaneous failure of both diesel generators to start on demand — which, based on the staff's estimate of one failure per hundred demands (or 10^{-2}) for each generator, we suggested might be 10^{-4} per year.[52] This yielded a combined probability for the "loss of all AC power sequence" in the range of 10^{-4} to 10^{-5} per year.

By way of analogy, we compared that probability range with values set forth in the staff's Standard Review Plan for Nuclear Power Plants as guidelines for determining whether certain accidents should be considered in designing a plant.[53] According to those guidelines, events must be so considered where they have (1) a realistically calculated probability of occurrence of at least 10^{-7} per year or (2) a conservatively calculated probability of 10^{-6} per year. Although we recognized that the category of events contemplated by the Standard Review Plan does not specifically include the postulated loss of all AC power, we nevertheless looked to that document as a starting point in determining the risk level acceptable for various situations.[54] The staff explained to us that, although it was developing a generic plan to resolve the station blackout issue, no

[52]ALAB-537, 9 NRC at p. 415. Our analysis assumed that the failure of the two diesel generators to start would be statistically independent events. *Id.* at p. 415 fn. 26. We discuss that assumption at pp. 46-48, *infra.*

[53]NUREG 75/087, Section 2.2.3. The Standard Review Plan (SRP) aids the NRC staff in the performance of its safety evaluation of applications for licenses to construct or operate nuclear power plants. The SRP furnishes guidance for four main categories: (1) scope and nature of review; (2) technical acceptance criteria; (3) procedures for review; and (4) standards for evaluation and findings. Section 2.2.3 deals specifically with the review of "design basis events resulting from the presence of hazardous materials or activities in the vicinity of the plant."

[54]We have previously accepted the Standard Review Plan guideline values as reasonable. *Public Service Electric and Gas Company* (Hope Creek Station, Units 1 and 2), ALAB-429, 6 NRC 229, 234 (1977).

numerical reliability goals for that event have yet been set.[55] Both the applicant and the staff adopted the suggested 10^{-7} guideline for analytical purposes.

As we shall see, the loss of AC power does not itself create an accident condition; rather, the plant can exist in a safe condition for some time following a station blackout. In responding to our questions concerning the complete loss of AC power, the applicant calculated various probabilities associated with different lengths of time required to restore AC power following a station blackout.[56] We discuss that analysis at greater length below. For present purposes, it suffices to note that the calculations provide a basis for determining the time available to restore AC power before the probability of events leading to reactor core damage exceeds 10^{-7} per year. They also reveal that a major determinant of that result is the reliability (or unreliability) of the emergency diesel generators.

1. **Diesel Generator Reliability.** The applicant assumed that a diesel generator would fail to start on demand once in a hundred times (*i.e.*, a failure probability of 10^{-2}).[57] According to the applicant's witness, Mr. Flugger, this number "was demonstrated by a 300-start shop test program for a Unit 1 diesel." To be counted as a successful attempt, the generator had to start quickly, reach full speed and voltage automatically, and then maintain a 60 percent load continuously for 5 minutes. A failure in any part of the sequence was considered a failure to perform on demand.[58]

Mr. Flugger also testified that the two diesel generators for St. Lucie Unit 2 were designed and located to preclude "common mode failures," that is, a single event or circumstance that would disable both machines. The two diesel generator systems are physically and electrically independent; a sequencer allocates loads on the diesels to prevent simultaneous, rapid loading (which might cause both to fail); diesel oil is tested when delivered to the site and is stored in separate tanks for each system; and the diesels are located in a building designed to withstand hurricanes and other

[55]Fitzpatrick, fol. Tr. 624, at p. 16. See also Tr. 622-23. The staff has been reviewing the generic issue of "station blackout" (that is, the complete loss of AC power) for some time. The Office of Nuclear Reactor Regulation formally established it as a generic task in 1977; since then, it has been elevated in priority and reported to Congress as an "unresolved safety issue" pursuant to Section 210 of the Energy Reorganization Act of 1974. *See, e.g.*, NUREG-0510, Report to Congress (January, 1979). The staff has taken a number of actions in connection with this issue (Baranowsky, fol. Tr. 760, at pp. 2-6) but has not yet published a final plan for its resolution. In the 1979 Annual Report of the NRC to the President for transmittal to Congress (as required by Section 307(c) of the Energy Reorganization Act of 1974), it is anticipated (at 87) that a final Task Action Plan can be completed in 1982. Our resolution of the issues now before us cannot await completion of the staff's generic review.

[56]Flugger, fol. Tr. 483, at pp. 10-12.

[57]*Id.* at p. 11.

[58]*Id.* at pp. 20-21.

anticipated weather conditions. On these bases, it was Mr. Flugger's professional judgment that the probability of one generator failing to start is truly unrelated to the probability that the other generator will likewise fail. Thus, the applicant assigned a probability of 10^{-4} to the simultaneous failure of both.[59]

In reviewing the applicant's analysis of the loss of all AC power sequence, the staff assumed a diesel generator unreliability value of 3×10^{-2}, an estimate taken from the Reactor Safety Study (also referred to as WASH-1400 or the Rasmussen Report).[60] That study includes some data on diesel generators used outside the nuclear industry as well as a table displaying the range of probabilities of failure on demand for other types of hardware often found in nuclear plant safety systems. The 3×10^{-2} value was the median demand failure probability for diesel generators.[61]

Mr. Patrick W. Baranowsky, a senior reactor engineer in the probabilistic analysis staff of the NRC's Office of Nuclear Regulatory Research and task manager for the station blackout issue,[62] testified for the staff that achieving a demand failure probability for individual diesel generators below 10^{-2} "might be very, very difficult" and that he considered the 10^{-2} figure a goal.[63] He also made the generic assessment that, given two diesel

[59]Tr. 539-44; 783.

[60]*Id.* at p. 17. The Reactor Safety Study in general and its "Executive Summary" in particular have been the subject of considerable criticism since their release in October 1975. In response to that criticism, the Commission established a Risk Assessment Review Group in July 1977 to identify the strengths and weaknesses of that Study. (The group is commonly referred to as the Lewis Committee after its chairman, Dr. H. W. Lewis, who was then a professor at the University of California at Santa Barbara.) Following the Lewis Committee's Report (NUREG/CR-0400, September 1978), the Commission issued a policy statement accepting the Committee's major findings and disclaiming endorsement of the Executive Summary of WASH-1400. With regard to the accident probabilities used in the study, the Commission stated that "absolute values of the risks presented by WASH-1400 should not be used uncritically either in the regulatory process or for public policy purposes." Nevertheless, the Commission stated that (at pp. 3-4):

> [w]ith respect to the component parts of the [Reactor Safety] Study, the Commission expects the staff to make use of them as appropriate; that is, where the data base is adequate and analytical techniques permit.

We note here that the Commission's conclusions are not inconsistent with the staff's use of probability values set forth in WASH-1400 for comparison purposes. See NRC Statement on Risk Assessment and the Reactor Safety Study Report (WASH-1400) in Light of the Risk Assessment Review Group Report, issued January 18, 1979.

[61]WASH-1400, App. III, Section 2, Table III 2-1. This table is reproduced herein as Table 1 (at 50-51) and is discussed at 49 and 52, *infra.*

[62]Baranowsky, fol. Tr. 760.

[63]Tr. 777-78.

generators each with a failure probability of 10^{-2}, the probability that both generators would simultaneously fail to start on demand would be approximately 10^{-3}. This takes into account the possibility of common mode failures attributable to maintenance problems, environmental factors and procedural or design deficiencies.[64]

A third source of data on diesel generator reliability was obtained from operating experience at St. Lucie Unit 1. At the evidentiary hearing, we directed the applicant to supply us with that information.[65] The applicant's analysis of the St. Lucie data subsequently supplied us indicated a probabiliy of 7 x 10^{-4} for the combined failure of both diesel generators.[66] Staff counsel informed us that the staff considered further comment unnecessary because the applicant's result was slightly more favorable than the comparable value of 9 x 10^{-4} derived by Mr. Fitzpatrick of the NRC Staff.[67] He also noted that the staff's position on the relevance of the information had been established at the hearing. He was referring to Mr. Fitspatrick's testimony that although the data might be "interesting" they were not particularly reliable because the applicant did not know exactly how many attempts had been made to start the generators.[68] Thus, the staff would rely on the provisions of Regulatory Guide 1.108 to ensure that the failure-on-demand rate for applicant's diesel generators does not exceed 10^{-2}.[69]

Based on the foregoing data, we conclude that the demand failure probability for both diesel generators must be considered to lie in the range of 10^{-3} to 10^{-4}. Even if true independence of the two diesel generator systems could be firmly established, the combined failure probability would be 10^{-4} at best.

2. **The Single Failure Criterion.** When we first posed questions about the loss of all AC power, both the applicant and the staff responded that they had not analyzed that sequence in detail because it was not a "design basis event," but they briefly discussed its consequences.[70] Later, when we directed the parties to prepare testimony on that issue for the evidentiary

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[64]*Ibid.*

[65]Tr. 867, 879-85; see also Tr. 790-91. The applicant's first submission of its diesel generator data, dated March 14, 1980, contained some inadequately explained deletions of certain diesel generator failure data points. Our order of April 16, 1980 requested the applicant to justify those deletions. It did so in a submission dated May 2, 1980.

[66]Liebler Affidavit of March 14, 1980, at p. 3.

[67]See at p. 47, *supra.*

[68]See Tr. 732-34. Mr. Liebler made the same point in his affidavit, noting that because it is more likely that successful generator starts might not have been recorded, the St. Lucie data may underestimate diesel generator reliability.

[69]*Id.* at p. 734. See at pp.61-62, *infra* for a discussion of those requirements.

[70]Flugger Affidavit of March 31, 1978, at p. 2, fol. Tr. 483; Fitzpatrick Affidavit of June 12, 1978, at p. 4.

hearing, the applicant filed a motion for reconsideration of ALAB-537 on the ground that our inquiry was precluded by Commission regulations. Specifically, the applicant objected to the underlying assumption that both diesel generators might simultaneously fail to start, which it argued was in violation of the "single failure criterion." We denied the applicant's motion because we believed that the single failure criterion might be inappropriate for application to diesel generators.[71]

A "single failure" is "an occurrence which results in the loss of capability of a component to perform its intended safety functions."[72] The single failure criterion is used in nuclear plant design to ensure that engineered safety features perform even if one component does not operate. Reflecting this principle, the second paragraph of GDC-17 requires that "[t]he onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions *assuming a single failure*" (emphasis added).

The diesel generators are "components" of the onsite power system. Under the single failure approach, should one generator fail to operate, the other could be counted upon to supply the electrical needs of the plant's safety systems. Although the single failure concept may well provide adequate assurance of plant safety and public protection when the component in question has a very small probability of failure, it becomes increasingly suspect when the equipment can be expected to fail at a higher rate.

The reliability figures for various classes of mechanical and electrical equipment included in the Reactor Safety Study provide a good illustration of why the single failure philosophy breaks down here.[73] As noted earlier, the staff's estimate of 3×10^{-2} for the demand failure probability of a single diesel generator was adopted from that study, and the other data for diesel generators in the record before us compare reasonably well with that figure. As can be seen in Table I on pages 50 - 51, diesel generators are considerably less reliable than most other components. Diesel generators

[71]ALAB-543, 9 NRC 626, 627 (1979).

[72]10 CFR. Part 50, Appendix A, *Definitions and Explanations.* The remainder of that definition states:

> Multiple failures resulting from a single occurrence are considered to be a single failure. Fluid and electric systems are considered to be designed against an assumed single failure if neither (1) a single failure of any active component (assuming passive components function properly) nor (2) a single failure of a passive component (assuming active components function properly), results in a loss of the capability of the system to perform its safety functions (footnote omitted).

[73]WASH-1400, fn. 60, *supra.*

TABLE I
RELIABILITY DATA FOR MECHANICAL AND ELECTRICAL EQUIPMENT
(Excerpted From WASH-1400 Table III 2-1)

		ASSESSMENT MEDIAN	LOWER & UPPER BOUND	US NUC OPERATING EXPERIENCE 1, 2, 3
FAILURE MODES	Pumps — Failure To Start	1×10^{-3}/D	3×10^{-4} 3×10^{-3}	1×10^{-3}/D
	Pumps — Failure To Run —Normal	3×10^{-5}/HR	3×10^{-6} 3×10^{-4}	3×10^{-6}/HR
	Pumps — Failure To Run —Extreme ENV	1×10^{-3}/HR	1×10^{-4} 1×10^{-2}	
	Valves: MOV. — Fails To Operate	1×10^{-3}/D	3×10^{-4} 3×10^{-3}	1×10^{-3}
	Valves: MOV. — (Plug) Failure To Remain Open	1×10^{-4}/D	3×10^{-5} 3×10^{-4}	3×10^{-5}/D
	Valves: MOV. — External Leak Or Rupture	1×10^{-8}/HR	1×10^{-9} 1×10^{-7}	3×10^{-8}
	Valves (SOV) — Fails To Operate	1×10^{-3}/D	3×10^{-4} 3×10^{-3}	1×10^{-3}
	Valves (AOV) — Fails To Operate	3×10^{-4}/D	1×10^{-4} 1×10^{-3}	1×10^{-4}
	Valves (AOV) — (Plug) Failure To Remain Open	1×10^{-4}/D	3×10^{-5} 3×10^{-4}	3×10^{-5}/D
	Valves (AOV) — External Leak—Rupture	1×10^{-8}/HR	1×10^{-9} 1×10^{-7}	3×10^{-8}
	Valves (Check) — Failure To Open	1×10^{-4}/D	3×10^{-5} 3×10^{-4}	1×10^{-4}
	Valves (Check) — Reverse Leak	3×10^{-7}/HR	1×10^{-7} 1×10^{-6}	
	Valves (Check) — External Leak—Rupture	1×10^{-8}/HR	1×10^{-9} 1×10^{-7}	3×10^{-8}
	Valves (Vacuum) — Failure To Operate	3×10^{-5}/D	1×10^{-5} 1×10^{-4}	
	Valves (Vacuum) — Rupture	1×10^{-8}/HR	1×10^{-9} 1×10^{-7}	
	Valves: Orifices, Flow Meters, (Test) — Rupture	1×10^{-8}/HR	1×10^{-9} 1×10^{-7}	
	Valves (Manual) — Failure To Remain Open (Plug)	1×10^{-4}/D	3×10^{-5} 3×10^{-4}	3×10^{-5}/D
	Valves (Relief) — Fail To Open/D	1×10^{-5}/D	3×10^{-6} 3×10^{-5}	1×10^{-5}
	Valves (Relief) — Premature Open/HR	1×10^{-5}/HR	3×10^{-6} 3×10^{-5}	1×10^{-5}
	Pipes> 3" HI Quality — Rupture (Section)	1×10^{-10}/HR	3×10^{-12} 3×10^{-9}	1×10^{-10}
	Pipes< 3" — Rupture	1×10^{-9}/HR	3×10^{-11} 3×10^{-8}	1×10^{-9}
	Gaskets — Leak	3×10^{-6}/HR	1×10^{-7} 1×10^{-4}	1×10^{-6}
	Flanges, Closures, Elbows: — Leak/Rupture	3×10^{-7}/HR	1×10^{-8} 1×10^{-5}	
	Welds — Leak	3×10^{-9}/HR	1×10^{-10} 1×10^{-7}	
	Diesel (Complete Plant) (Emergency Loads) — Failure to Start Qd:	3×10^{-2}/D	1×10^{-2} 1×10^{-1}	3×10^{-2}
	Diesel (Engine Only) — Failure to Run λ_o	3×10^{-3}/HR	3×10^{-4} 3×10^{-2}	1×10^{-3}
	Diesel (Engine Only) — Failure to Run λ_R	3×10^{-4}/HR	3×10^{-5} 3×10^{-3}	
	Batteries Power Supplies — NO/Output λ_s	3×10^{-6}/HR	1×10^{-6} 1×10^{-5}	3×10^{-7}
	Instrumentation (Amplification, Annuciators, Transducers, Combination) — Failure to Operate, λ_s	1×10^{-6}/HR	1×10^{-7} 1×10^{-5}	1×10^{-6}
	Instrumentation (Amplification, Annuciators, Transducers, Combination) — Shift Calibration, λ_o	3×10^{-5}/HR	3×10^{-6} 3×10^{-4}	

TABLE I (continued)
RELIABILITY DATA FOR MECHANICAL AND ELECTRICAL EQUIPMENT
(Excerpted From WASH-1400 Table III 2-1) (continued)

		ASSESSMENT MEDIAN	LOWER & UPPER BOUND	US NUC OPERATING EXPERIENCE [1,2]
FAILURE MODES	CLUTCH ELEC — Failure to Operate	3×10^{-4}/D	1×10^{-4} – 1×10^{-3}	3×10^{-4}
	CLUTCH ELEC — Premature Open	1×10^{-6}/HR	1×10^{-7} – 1×10^{-5}	NA
	CLUTCH MECH — Failure to Open	3×10^{-7}/HR	3×10^{-8} – 3×10^{-6}	
	CLUTCH MECH — Failure to Operate	3×10^{-4}/D	1×10^{-4} – 1×10^{-3}	3×10^{-4}
	SCRAM RODS — Failure to Insert (Single Rod)	1×10^{-4}/D	3×10^{-5} – 3×10^{-4}	5×10^{-5} 3×10^{-4} D
	ELECTRIC MOTORS — Failure to Start	3×10^{-4}/D	1×10^{-4} – 1×10^{-3}	3×10^{-4} D
	ELECTRIC MOTORS — Failure to Run	1×10^{-5}/HR	3×10^{-6} – 3×10^{-5}	1×10^{-6} HR
	ELECTRIC MOTORS — Failure to Run (Extreme ENVIR.)	1×10^{-3}/HR	1×10^{-4} 1×10^{-2}	NA
	RELAYS — Failure to Energize	1×10^{-4}/D	3×10^{-5} – 3×10^{-4}	3×10^{-5} D
	RELAYS — Failure NO Contact to Close	3×10^{-7} HR	1×10^{-7} – 1×10^{-6}	1×10^{-6} HR
	RELAYS — Short Across NO/NC Contact	1×10^{-8}/HR	1×10^{-9} 1×10^{-7}	1×10^{-6} HR
	RELAYS — Open NC Contact	1×10^{-7} HR	3×10^{-8} – 3×10^{-7}	1×10^{-6} HR
	SWITCHES — Limit: Failure to Operate	3×10^{-4}/D	1×10^{-4} – 1×10^{-3}	1×10^{-4} D
	SWITCHES — Torque: Fail to OPER	1×10^{-4}/D	3×10^{-5} – 3×10^{-4}	1×10^{-4}
	SWITCHES — Pressure Fail to OPER	1×10^{-4}/D	3×10^{-5} – 3×10^{-4}	1×10^{-4}
	SWITCHES — Manual, Fail to TRANS	1×10^{-5}/D	3×10^{-6} – 3×10^{-5}	3×10^{-5}
	SWITCHES — Contacts Short	1×10^{-8}/HR	1×10^{-9} – 1×10^{-7}	3×10^{-8}
	CIRCUIT BREAKERS — Failure to Operate	1×10^{-3}/D	3×10^{-4} – 3×10^{-3}	1×10^{-3} D
	CIRCUIT BREAKERS — Premature Transfer	1×10^{-6}/HR	3×10^{-7} – 3×10^{-6}	1×10^{-6} HR
	FUSES — Premature, Open	1×10^{-6}/HR	3×10^{-7} – 3×10^{-6}	NA
	FUSES — Failure to Open	1×10^{-5}/D	3×10^{-6} – 3×10^{-5}	1×10^{-6} D
	WIRES — Open	3×10^{-6}/HR	1×10^{-6} – 1×10^{-5}	1×10^{-6} HR
	WIRES — Short to GND	3×10^{-7}/HR	3×10^{-8} – 3×10^{-6}	1×10^{-7} HR
	WIRES — Short to PWR	1×10^{-8}/HR	1×10^{-9} – 1×10^{-7}	
	TRANSFORMERS — Open CKT	1×10^{-6}/HR	3×10^{-7} – 3×10^{-6}	1×10^{-6}
	TRANSFORMERS — Short	1×10^{-6}/HR	3×10^{-7} – 3×10^{-6}	1×10^{-6}
	SOLID STATE DEVICES — Fails to Function HI PWR Application	3×10^{-6}/HR	3×10^{-7} – 3×10^{-5}	1×10^{-6}/HR
	SOLID STATE DEVICES — Shorts HI PWR Application	1×10^{-6}/HR	1×10^{-7} – 1×10^{-5}	1×10^{-7}/HR
	SOLID STATE DEVICES — Fails To Function Low PWR Application	1×10^{-6}/HR	1×10^{-7} – 1×10^{-5}	1×10^{-7} HR
	SOLID STATE DEVICES — Shorts Low PWR Application	1×10^{-7}/HR	1×10^{-8} – 1×10^{-6}	

are shown to have demand failure probabilities in the range of 10^{-1} to 10^{-2}. Smaller mechanical components, such as pumps and valves, are found to have a failure rate of 3×10^{-3} to 10^{-5}, and items such as switches, relays and breakers fall within the range of 3×10^{-3} to 3×10^{-6}. Thus, demand failure probabilities for equipment to which the single failure criterion is commonly applied — for example, motors, pumps, valves, switches, relays, and breakers — are in the 3×10^{-3} to 10^{-5} range, giving rise to simultaneous (independent) demand failure probabilities for both elements of a redundant system in the 10^{-5} to 10^{-10} range. The simultaneous demand failure probability for redundant diesels (in the 10^{-3} to 10^{-4} range) is obviously far greater.

As we explained in our order of May 3, 1979, the single failure standard "appears in Commission criteria which, according to their own introductory terms, (1) are incompletely developed, (2) establish only minimum requirements, and (3) reflect the expectation that 'additional or different criteria' will have to be 'identified and satisfied in the interest of public safety' in 'unusual' situations."[74] For the reasons cited above, we conclude that the circumstances present here call for such additional measures. The diesel generators employed for emergency onsite power can only be characterized as relatively unreliable pieces of equipment. Blind reliance on the single failure criterion (that is, simple redundancy) does not provide an adequate degree of plant safety and public protection in this state of affairs.

In short, the probability of a complete loss of AC power is in the range of 10^{-4} to 10^{-5}. It is therefore unacceptably high relative to accidents and other events considered incredible for design purposes (which have a probability no greater than 10^{-6}).[75]

Both the applicant and the staff have indicated, however, that the plant can accommodate a complete loss of AC power for some period of time. We now turn to their testimony on what might follow a station blackout and how these events determine the time available in which to restore some AC power source.

B. Events That Follow Loss of All AC Power

The events associated with a loss of offsite and "normal" onsite AC power are described in Section 15.2.9 of the applicant's Preliminary Safety Analysis Report (PSAR).[76] Assuming a loss of offsite power and concurrent turbine trip, the reactor is automatically shut down; hence normal onsite

[74]ALAB-543, 9 NRC at p. 627 (footnote omitted).
[75]See at p. 45, *supra*.
[76]Normal onsite AC power is provided by operation of the plant itself through transformers connected to the output of the turbine generators.

power is lost. Because power is lost to the reactor coolant and main feedwater pumps,[77] normal feedwater and reactor coolant flow ceases (PSAR, at p. 15.2.9-1). Nevertheless, natural circulation will remove decay heat from the core and transport it to the steam generators.[78] There the heat is dissipated by boiling the residual water. The steam generated in this process is initially released to the atmosphere via the automatic safety relief valves in the steam lines. After diagnosing the situation, the operator will start the auxiliary feedwater flow and the steam flow will be relieved by operation of the power-operated atmospheric steam dump valves. (The PSAR suggests this will be done within the first 15 minutes.) The reactor operator will then be able to bring the plant to a "hot standby" condition within 45 minutes of occurrence of the accident (*ibid.*).

The sequence described in PSAR Section 15.2.9 assumes the diesel generators will be started and made available as intended. As we have seen, however, it is sufficiently likely that both diesels would fail to start on demand that we must also consider what happens in those circumstances. Certain aspects of the loss of power transient can be accommodated with or without the diesels as a source of emergency power. For example if the diesels are available, auxiliary feedwater can be provided by AC-powered pumps; otherwise, steam-driven pumps that require no AC power[79] can be used. The steam-driven turbine pumps used to provide a source of auxiliary feedwater are designed to operate over a wide range of available steam.[80] The pumps are designed to provide the feedwater flow required under shutdown conditions (Tr. 485). Likewise, the excess steam generated from decay heat removal can be relieved by either the power operated

[77]The feedwater pumps supply water to the secondary side of the steam generators which, in turn, afford the basic means for removing heat from the reactor cooling water (on the primary side).

[78]In a brief and very simplified sense, natural circulation occurs as a result of heat transfer from the fuel to the cooling water. This heats the coolant in the core, causing it to expand. This change in density leads to forces which, in a properly designed system, result in the circulation of coolant from the reactor core region through the steam generator where heat is removed. The applicant reports that natural circulation capability has been verified by test results. See PSAR, at p. 5.3.5.

[79]Power for valve operation and other auxiliary functions required for steam-driven pump operation is obtained from the station's DC battery power supplies (see PSAR, at pp. 7.4-3). Mr. Flugger tells us that with proper utilization of these supplies, auxiliary feedwater operation can be maintained without AC power for nearly 25 hours (Flugger, fol. Tr. 483, at p. 19).

[80]Applicant's witness Mr. Flugger was not sure how low "available steam pressure" could drop and the steam-driven turbines continue to operate (Tr. 499), but the PSAR (at pp. 10.5-1) indicates they can operate with a saturated steam pressure as low as 50 psig.

atmospheric steam dump valves[81] or, if power is unavailable, by the safety relief valves.

Liquid lost from the steam generators as a result of boiling is replenished through the auxiliary feedwater system from the condensate storage tank. This tank has sufficient volume to allow the reactor to be maintained at hot standby for at least 16 hours (Flugger, fol. Tr. 483, at p. 18). There are other substantial sources of water available onsite which could be used to extend such operation (*id.* at pp. 18-19). Hence, the availability of water does not appear to be a limiting factor.

From the analyses provided, it appears that the plant can accommodate the early stages of a total loss of AC power. The staff suggested that the first components susceptible to failure in this sequence are the reactor coolant pump (RCP) seals.[82] These seals are designed to prevent leakage of primary coolant along the rotating shaft of the reactor coolant pumps. To function properly they must be cooled; it is the loss of this cooling that may lead to their failure.[83] Applicant's witness Mr. Flugger explained that:

> an unprotected loss of coolant accident (LOCA) does not result from the postulated loss of all AC event. There is no failure of the reactor coolant pressure boundary associated with this event. A reactor coolant pump (RCP) seal can only yield very small and acceptable leak rates. Unit 2 has more than adequate capability to remove decay heat, which is necessary to accommodate the postulated loss of all AC event. There is sufficient condensate to provide steam generator makeup for at least 16 hours, the auxiliary feedwater pump is steam driven, auxiliary feedwater pump control and auxiliary feedwater system valves are DC powered, and the steam generators have sufficient inventory to allow the operator about 55 minutes to actuate auxiliary feedwater before steam generator dryout occurs.[84]

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[81]The power requirement here is that needed to provide the signal to operate the pneumatic atmospheric dump valves (PSAR, at pp. 7.4-4). Whether this belongs on DC battery power or not might be one question for further study. Another is how many cycles of dump valves operation the air supply system can sustain before it must be replenished. Operation of the plant air compressors, needed to replenish this supply, requires AC power. It should be noted, however, that the atmospheric dump valves will fail in the closed position upon loss of air (PSAR, at pp. 7.4-4). In that event the relief valves, which are sized to handle more than 100 percent of the steam flow at full power, will function to relieve steam pressure. (PSAR, at pp. 5A-4). Thus it is not *necessary* to operate the dump valves because the safety valves will provide adequate relief. However, Mr. Flugger tells us it is desirable to use the dump valves so that the operator can have some control over the system (Tr. 504).

[82]Fitzpatrick, fol. Tr. 624, at pp. 17-18.

[83]The RCP seal cooling system uses a controlled "bleed-off" flow from the primary coolant through the seals and through a heat exchanger. The normal controlled leak rate is 4 gpm (PSAR, at pp. 9.3-30). The primary coolant bleed-off flow is returned to the primary coolant by the charging pumps via the chemical and volume control system. The three charging pumps can each operate at pp. 44 gpm (PSAR, at 9.3-42). Heat is removed by component cooling water flowing across the secondary side of the seal heat exchangers. It is this loss of coolant flow to the RCP seals to which we refer above.

[84]Flugger, fol. Tr. 483, at p. 3 (citation omitted).

The foregoing assumes that if a reactor coolant pump seal fails, the resultant leak rate will be "acceptably" small.[85] This in turn implies that the loss of primary coolant from the reactor vessel is somehow being accommodated. That would normally be accomplished by operation of the charging pumps. These return water from the volume control tank.[86] Charging pump operation requires AC power, however, and thus would not be possible under blackout conditions. Tr. 600.

The applicant provided an extensive description of the operation of the RCP seal system during normal operation and under accident conditions (Flugger, fol. Tr. 483 at pp. 14-17). Under normal conditions with the reactor coolant pumps running, if cooling water (that is, component cooling water flow) is lost to the RCP seals they could fail within an hour or so (*id.* at p. 14). Under the station blackout conditions we are postulating, however, the pumps do not continue to run; instead they lose power and coast down rather quickly. On the other hand, cooling water from the component cooling system no longer flows to the seal heat exchangers and the seal temperatures rise from 180°F to 550°F (*id.* at p. 15). The applicant expects the seals to remain functional for at least 24 hours under such conditions. But it also acknowledges that if the reactor coolant pumps should be restarted after such an event, seal leak rates will probably be higher than normal (*ibid.*).

For its part, the staff agreed that its earlier assessment (in which it estimated that only 1 hour would elapse following loss of all AC before the RCP seals might fail) was conservative (Fitzpatrick, fol. Tr. 624, at pp. 17-18). However, Mr. Fitzpatrick pointed out that "the staff was unwilling to attempt to extrapolate from the applicant's analysis" without receiving the results of a direct test of the RCP seals (*id.* at p. 18). For this reason, the staff is requiring the applicant to test a reactor coolant pump seal assembly to demonstrate its sealing capability during periods of station blackout conditions.[87] The staff concluded that "[i]f the leak rates through the [RCP] seals can be shown to provide at least four hours before sufficient [coolant]

[85]*Ibid.* An "acceptable" leak rate is one in which water is not lost in sufficient quantity to uncover the reactor core or to affect it indirectly by impeding natural circulation.

[86]The charging pumps and volume control tank are part of the chemical and volume control system (CVCS) that is used to maintain primary coolant water at the appropriate volumetric level and chemical condition. The pumps can be connected to the refueling water storage tank if required (see PSAR, at pp. 9.3-49). This tank provides a substantial volume of water for plant use (see PSAR, at pp. 6.3-6).

[87]Fitzpatrick, fol. Tr. 624, at pp. 20-21; Siegel, fol. Tr. 624, at pp. 2-3; letter from Baer to Uhrig dated September 17, 1979, fol. Tr. 624 (directing the applicant to test an RCP seal and to include the test results in the Final Safety Analysis Report for Unit 2).

inventory is lost to stop natural circulation, the probability of losing natural circulation is less than 10^{-7} per year" (*id.* at p. 20).[88]

The staff's assessment that the integrity of the reactor coolant pump seals must be tested and confirmed prior to operation is just one illustration of the fact that there has not yet been a thorough analysis of the loss of all AC power transient.[89] Throughout the hearing, we raised a number of questions relating to certain design details involving component and system performance during that postulated sequence of events, only to learn that further study is needed. For example, if the letdown line from the primary coolant is not automatically closed upon loss of all AC power,[90] continued letdown flow would result in water loss because its return is contingent on operation of the charging pump. Staff witness Mr. Baer agreed that without such an automatic closing the situation would be equivalent to a seal leakage. Neither he nor the applicant's witness, Mr. Flugger, was able to state with certainty what would happen at St. Lucie Unit 2.[91] Similarly, the parties were unsure of what effect shrinkage of the primary coolant water volume might have on their assessment of the time available to restore AC power.[92] Other examples involve the availability of instrumentation, lighting,[93] and the source of power for the pressurizer power operated relief valve.[94] The parties were able to provide only partial answers to the questions in response to our probing.

The record discloses to us that St. Lucie Unit 2 as it is now designed includes most, if not all, of the systems and equipment required to maintain the plant in a safe configuration for the first few hours of a station blackout.

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[88]This would occur when the water level falls below the primary coolant outlet pipes, which are above the level of the reactor core (see PSAR, Figures 4.1-1). Thus, loss of natural circulation would precede uncovering of the core through leakage of coolant.

[89]We have received a preliminary notification (PNO-II-80-104 dated June 11, 1980) and the related circular from the NRC Office of Inspection and Enforcement (IE Circular No. 80-15 dated June 20, 1980) both of which deal with an event involving an accidental loss of RCP cooling and subsequent natural circulation cooldown which occurred at St. Lucie Unit 1 on June 11, 1980. The circular reveals that following a sequence of events in which the component cooling water to the RCP seal heat exchangers was lost for about 1.5 hours (7 minutes of which was at power with the RCPs running), removal and visual examination of the seals showed no signs of degradation. The seals have evidently been replaced. Although this event was quite severe, it does not appear to us to have any immediate, direct bearing on the staff's position (which we accept) regarding the need for confirmatory testing of seal leak rates under severe conditions for extended time periods.

[90]Primary coolant is "let down" to the CVCS to provide a path for purification and chemical and volume control.

[91]Tr. 586-87, 835.

[92]Tr. 494-500, 818-22. Loss of liquid volume through a decrease in temperature caused, for example, by excess cooling due to steam loss through open valves, is usually referred to as "shrinkage."

[93]Tr. 488, 506, 766-68.

[94]Tr. 502-503.

The steam-driven auxiliary feedwater pump and the feedwater train independent of AC power are the crucial items in this respect. Nevertheless, a number of significant questions about specific aspects of the plant's behavior during a station blackout remain unanswered.[95] A thorough understanding of this event (and its aftermath) is of obvious importance to the safe operation of a nuclear facility. We therefore find that a detailed analysis of the plant's performance during a station blackout must be undertaken. This would identify whether any new or revised systems are required to accommodate such a transient. It would also furnish the basis for operator training and emergency procedures to bring the plant safely through it.

C. Time Required to Restore AC Power

As we have seen, following a station blackout there is a certain period of time available within which AC power may be restored before the plant presents a risk to the public health and safety. The applicant provided an analysis in which it calculated the probability that some source of AC power will not be restored within a given time.[96] That analysis employed a probabilistic equation using numerical constants derived from the applicant's historical operating data.

The applicant's witness, Mr. Flugger, designated as P(T) the probability that AC power would not be restored by time T, as measured from the onset of a station blackout. He then solved for P(T), combining the probability of having a loss of all AC power during any one year with the probability of not restoring AC power by time T. Mr. Flugger's equation for P(T) consisted of six presumably independent probability terms: P(A), that offsite power is lost; P(B), that the first diesel generator fails to start; P(C), that the second diesel also fails to start; P(D), that offsite power is not repaired and returned to service by time T; P(E), that the first diesel is not repaired and returned to service by time T; and P(F), that the second diesel is not repaired and returned to service by time T. Thus the applicant's equation was as follows:

$$P(T) = P(A)\cdot P(B)\cdot P(C)\cdot P(D)\cdot P(E)\cdot P(F)\cdot$$

The information required to evaluate the first three terms has been discussed earlier. As did we, the applicant estimated the probability of loss

[95]This should come as no surprise. As Mr. Flugger acknowledged (Tr. 514), station blackout was not a design basis event for St. Lucie Unit 2. Many of the questions posed to the witnesses concerning this event were therefore being addressed for the first time.

[96]Flugger, fol. Tr. 483, at pp. 10-12.

of offsite power to be in the range of 0.1 to 1.0 per year; hence, Mr. Flugger performed his calculations utilizing both those values. He assumed statistical independence for the failure of both diesel generators, employing a probability of 10^{-2} for the failure of each to start on demand (yielding a probability of 10^{-4} for their simultaneous failure). For the three terms involving restoration of AC power, Mr. Flugger used an exponential formulation derived under the assumption that the probability of repair is proportional to the length of time elapsed since failure.[97] The constants of proportionality (time constants) required for those three terms he derived from the applicant's historical data on the time required to restore offsite power or to return diesel generators to service. Assuming a frequency of 0.1 per year for loss of offsite power, the probability of having a complete loss of AC power that lasts as long as 2.4 hours is 10^{-7} per year; substituting a frequency of 1.0 per year for the loss of offsite power, a corresponding value for P(T) of 10^{-7} per year is 3.6 hours.[98]

These results form the basis for the applicant's and staff's conclusion that the probability of having a station blackout longer than four hours is acceptably low (*i.e.,* less than 10^{-7} per year). They obviously depend upon the individual values chosen for the time required to restore AC power. We therefore review the evidentiary basis for those values.

1. **Restoration of Offsite AC Power.** Based on operating data for the Florida Power and Light system from 1972 to the time of the evidentiary hearing, the applicant identified four major system disturbances that resulted in twenty-two instances of loss or offsite power to its nuclear or fossil-fueled power plants.[99] The times required to restore offsite power ranged from less than one minute to 77 minutes, with a mean restoration time of some 26 minutes. The applicant utilized a time constant of 1.6 $hr.^{-1}$ in assessing the probability that offsite power would not be repaired and returned to service by a certain time.[100] This constant represents an average duration of 37 minutes for loss of all AC power and yields a 99.5 percent statistical confidence that the *mean* restoration time would not be greater than 37 minutes. The applicant chose this value as a more conservative estimate than the actual average duration of 26 minutes (with a corresponding time constant of 2.3 $hr.^{-1}$) for loss of offsite power.[101]

In performing its statistical analysis, the applicant omitted data for an event involving its Turkey Point nuclear plant.[102] In April of 1979, the

[97] *Id.* at pp. 10-11.
[98] *Id.* at p. 12.
[99] Armand *et al.,* fol. Tr. 45, at p. 13 fn. 16, and Attachment 8; Flugger, fol. Tr. 483, at p. 22.
[100] Flugger, fol. Tr. 483, at pp. 10-11.
[101] Armand *et al.,* fol. Tr. 45, at p. 13, fn 16; Fitzpatrick, fol. Tr. 624, at p. 16.
[102] Tr. 113-14, 580-82. See also Armand *et al.,* fol. Tr. 45, Attachment 2.

failure of seven transmission circuits isolated that plant from the rest of the applicant's system for a period of some six or seven hours. Because a fossil-fueled plant at the Turkey Point site continued to provide an independent source of electric power to the nuclear plant, the applicant concluded that the incident did not properly constitute a "loss of offsite power." Mr. Flugger testified that if information concerning that incident were nevertheless included, the result would not be greatly affected. He stated that the exponential curve which fit the data would still bound all points conservatively.[103] Mr. Flugger further noted that the Reactor Safety Study[104] assumed a mean time for restoration of offsite power of one hour based on the calculation of an actual value somewhat less than that.[105]

Even in the event of a major accident completely disabling the Midway substation, offsite power could be restored to St. Lucie relatively quickly by means of a temporary splice bypassing Midway. According to applicant's witnesses, Mr. Bivans and Mr. Coe, that sort of temporary connection has been made before and could be accomplished in six hours or less. Within one to two weeks, more permanent connections could be established with a capacity not only to supply emergency power but also to deliver part, if not all, of the plant's output.[106]

Thus it appears that, on the average, offsite power can be restored in less than an hour; even in the event of a major accident or system disturbance, offsite power should be available again to St. Lucie within six to seven hours.

2. **Diesel Generator Restart.** The staff pointed out that it has no independent data base from which to calculate a mean time to repair emergency diesel generators in service at nuclear power plants. In the past, licensees have not been required to report this information. Beginning in October 1979, Regulatory Guide 1.108 has provided for reporting the duration of diesel generator outages to the NRC. Since that time the staff has called for that information from certain operating reactors on a case-by-case basis. These reports will eventually provide a basis for calculating a mean repair time; however, the number of plants reporting is insufficient to yield statistically meaningful conclusions at present.[107]

The only source of information on the time required to return a diesel to service is the applicant's historical data. Both the applicant and the staff

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[103]Tr. 580-82.

[104]WASH-1400, fn. 60, *supra.*

[105]Tr. 583.

[106]Tr. 234-38.

[107]Fitzpatrick, fol. Tr. 624, at pp. 19-20. For a further discussion of Regulatory Guide 1.108, see pp. 61-62, *infra.*

agreed that these would likely yield a conservative estimate.[108] This is because existing technical specifications do not significantly constrain the time within which a diesel generator must be repaired and returned to service following a failure to start.[109]

The applicant's repair time frequency distribution for operating experience at St. Lucie and Turkey Point indicated a median repair time of 111 minutes and a mean of 388 minutes. The applicant used these data to calculate a time constant for diesel restoration to be used in assessing the probability of loss of all AC power.[110] Certain data points, representing failures for which corrective design changes have been made, were omitted. Mr. Flugger testified that their inclusion would not alter the ultimate result that AC power must be restored within four hours for the probability of core damage to be acceptably low.[111] The staff agreed with him that those data points were appropriately deleted.[112]

The applicant also brought up the option of using a diesel generator at St. Lucie Unit 1 to supply AC power to Unit 2. The diesel systems can be interconnected and any one generator is capable of supplying the loads required for both units. Alignment would take two men about one hour.[113] The applicant did not factor this capability into its calculations of the probability versus time required to restore AC power. The staff concurred in the desirability of this design feature. However, it cautioned that this feature could not be credited in the probability analysis pending the development of criteria governing reassignment of onsite power sources.[114]

3. **Conclusion.** The significance of the restoration times for offsite and onsite power sources must be considered in the context of a station blackout. As we have noted, the applicant factored in times required to restore offsite power and to repair the diesel generators in computing the probability that some source of AC power would be returned to service within a certain time. These calculations show that the probability of losing all AC power and not being able to restore it within four hours — *i.e.,* while natural circulation can still be assured — is lower than the 10^{-7} guideline value.

Our review of these calculations leads us to conclude that they are reasonable. The ability to restore some source of AC power after a station

[108]Flugger, fol. Tr. 483, at p. 20; Fitzpatrick, fol. Tr. 624, at p. 20.
[109]The plant may continue to operate for a period of 72 hours after one diesel generator fails to start. Flugger, fol. Tr. 483, at p. 20.
[110]*Id.* at p. 22.
[111]*Id.* at fn. 1. For an explanation of how this time period figure was calculated, see at pp. 57-58, *supra.*
[112]Fitzpatrick, fol. Tr. 624, at p. 20.
[113]Flugger, Tr. 483, at p. 19; Tr. 546.
[114]Fitzpatrick, fol. Tr. 624, at p. 18.

blackout provides reasonable assurance that such an event will not result in core damage or undue hazard to the public health and safety. We cannot stress too strongly, however, that these measures are not self-executing. AC power can effectively be restored only if the plant operators, dispatchers and maintenance personnel have all been made aware of those measures, have been trained to carry them out, and have the equipment at hand to do so.

D. Measures to Decrease Probability or Consequences of Loss of All AC Power

The remainder of our questions for the parties dealt with design or procedural improvements that might be made either to increase system reliability during an "alert status" or to decrease the likelihood of exceeding design limits for reactor fuel and pressure boundary as a result of a complete loss of AC power. We examine them in turn.

When we issued ALAB-537 on April 5, 1979, the staff was in the process of requiring the applicant to define those conditions under which it would declare an "alert status" for its power distribution system. We therefore asked the parties to advise us about possible measures that might be undertaken during such alert periods to assure or increase the reliability of onsite power systems.[115] Applicant's witness Mr. Liebler testified that the most effective means of accomplishing this would be to "idle start the diesel engines and run them for a short period of time" to verify their availability.[116] Because the onsite power system (including the diesel generators) is subject to routine inspection and testing, however, he did not expect that any significant improvement in reliability would result.[117]

The staff concurred in that assessment with one caveat. It cautioned that "idle starting" diesel generators and running them unloaded for every alert status "could unnecessarily hamper their performance in a real emergency," which might lead to equipment failure.[118] This is because the power system might be put on alert status relatively frequently. Running the diesels unloaded or only lightly loaded would cause incomplete fuel combustion that would lead to varnish and gum deposits and create a risk of fire in the engine exhaust system. On balance, the staff concluded that such alert status startups should not be required for St. Lucie.[119] We agree.

Finally, we asked the parties for a review of possible measures to decrease the likelihood of exceeding design limits for the reactor fuel and

[115]ALAB-537, 9 NRC at p. 416.
[116]Liebler, fol. Tr. 404, at p. 2.
[117]*Ibid.*
[118]Fitzpatrick, fol. Tr. 624, at p. 22.
[119]*Ibid.*

coolant pressure boundary, assuming that there would be some time available to restore an AC power source following a station blackout.[120]

As a result of its generic work on the station blackout issue,[121] the staff has identified several design and procedural improvements which could minimize the accident probability for the complete loss of AC power.[122] The staff's first recommendation involved the preoperational and periodic testing requirements for diesel generators specified in Regulatory Guide 1.108. It recommended that these be both implemented and considered in establishing limiting conditions for operation when one generator is not working. Among other things, that guide requires a reliability of 10^{-2} to be maintained during operation. The staff explained that from the time the diesel generators for St. Lucie Unit 2 arrive on site, they will be required to comply with Regulatory Guide 1.108.[123] The applicant has committed itself to compliance with that guide as implemented in the unit's Technical Specifications.[124]

The staff also recommended that an emergency heat removal (feedwater) system include at least one train whose energy source, activation, motion, control, and supporting systems are independent of AC power. As we have noted,[125] Unit 2 has a steam-driven auxiliary feedwater system that is completely independent of AC power. The steam-driven auxiliary feedwater pump has a controller that is operated by DC power. All valves that align the pump to the steam generator are also DC-powered and can be opened manually should the controller fail to operate. Its lubricating oil system and the lubricating oil cooler are also independent of AC power.[126]

The staff's third recommendation was to amend the limiting conditions of operation to reduce the length of time power generation may continue when combination of power sources and systems required for safe shutdown are out of service. For example, as Mr. Baranowsky suggested, one way to reduce the probability that a loss of offsite power will threaten plant safety would be to decrease the time during which a diesel generator and an AC-independent shutdown train may both be out of operation with the plant still running.[127] Mr. Flugger's understanding of the staff's recommendation was that limiting conditions for operation be correlated or cross-referenced for the auxiliary feedwater system and the AC power

[120]ALAB-537, 9 NRC at p. 416.
[121]See fn. 55, *supra.*
[122]Baranowsky, fol. Tr. 760, at pp. 5-6.
[123]Tr. 734; *see also* Tr. 773-74.
[124]Tr. 403, 406.
[125]At pp. 54-55, *supra.*
[126]Flugger, fol. Tr. 483, at p. 3; Tr. 484-89.
[127]Tr. 833-34.

supply onsite, as they are now for offsite and onsite power systems. He did not consider that a major change and agreed that it seemed prudent.[128]

Finally, the staff recommended that emergency procedures be provided to reactor operators, plant maintenance workers, and offsite personnel to aid them in coping with a station blackout and restoring AC power sources. Mr. Cole, Director of Power Supply for Florida Power and Light Company, responded that the applicant's emergency manual contains specific procedures for the system dispatcher to follow to restore offsite power to each nuclear power plant.[129] Mr. Liebler, the applicant's Manager of Power Resources, Nuclear Services, represented that procedures for dealing with a station blackout will be developed by the Company and provided to plant personnel prior to operation of Unit 2. These will be based on a review of the final design of the completed reactor and will include instructions for restoring AC power sources.[130] Mr. Liebler anticipated that the emergency procedures would emphasize restoring AC power and maintaining the plant in a safe condition. He added that operator training would specifically include simulated loss of AC power situation.[131]

In connection with the applicant's commitment to develop station blackout procedures and provide operator training consistent with this recommendation, we reiterate an earlier finding (pp. 56 - 57, *supra*). At the risk of redundancy, we stress again that there has not yet been a thorough analysis of the complete loss of AC power transient. Many questions regarding the plant's behavior during that transient cannot now be answered. Such an analysis is essential not merely to a complete understanding of that event, but as well to the final evaluation of the adequacy of the St. Lucie Unit 2 design for surviving a station blackout, to the development of effective emergency procedures and to the adequate training of operators.

IV.

FINDINGS, CONCLUSIONS AND ORDER

In summary, we find that:

1. St. Lucie Unit 2 meets the General Design Criterion 17 requirements for a diversity of electric power sources from the transmission network to the onsite distribution system. The three transmission lines between the plant and Midway coupled with the breaker-and-

[128]Tr. 509-10.
[129]Tr. 36; see Attachment 9 to Armand *et al.*, fol. Tr. 45.
[130]Tr. 403.
[131]Tr. 435-36.

a-half configuration at that substation provide a high degree of protection against simultaneous failure. An additional circuit connecting the unit to the Florida Power and Light transmission network at some other location would not appreciably increase the reliability of offsite power for this plant.

2. Despite the diverse connections to the grid at Midway and indications that the Florida Power and Light Company is upgrading the reliability of its transmission network, the loss of offsite power at St. Lucie is not a highly improbable event. This circumstance, combined with the fact that the redundant emergency diesels are not themselves highly reliable, leads to the conclusion that a complete loss of AC power — station blackout — must be considered a design basis event for St. Lucie Unit 2. In this instance, the single failure criterion does not appear to provide adequate protection of the public health and safety.
3. In the event of a station blackout, a steam driven auxiliary feedwater system can function to provide core cooling and the plant can apparently be maintained in a safe condition for a number of hours in the absence of AC power.
4. There is a high likelihood that following station blackout, a source of AC power can be restored before events resulting from its loss produce reactor core damage or other circumstances injurious to the public health and safety.
5. Many questions regarding the behavior of the plant during the station blackout transient remain unanswered. That behavior must be thoroughly analyzed to provide a better understanding of that event and a basis for operator actions during the blackout period.
6. There is a need to train operators both in bringing the plant safely through a station blackout transient and in the various means of restoring AC power. In addition, written procedures must be developed and provided to key personnel to guide them in such operations.

The total loss of AC power shall be considered a design basis event for St. Lucie Unit 2. The applicant's Final Safety Analysis Report shall include an analysis demonstrating the ability of the plant, in its final design, to operate through such an event. (The analysis may assume that AC power at least equivalent to the output of a single emergency diesel will be available at the end of a reasonable period.) The applicant shall also detail in that Report its training programs and procedures for station operation during a blackout transient and for the restoration of AC power. The staff shall

modify the applicant's construction permit accordingly; the permit, so modified, is approved.[132] Copies of the modification shall be served on the parties and filed in the record of this proceeding.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the
Appeal Board

[132]That approval is subject, however, to resolution of the "radon issue," still outstanding. See fn. 2, *supra.*

Approval of the permit to construct St. Lucie Unit 2 despite the unresolved safety concerns reflects the structure of the Atomic Energy Act. The Act requires the applicant upon completing the plant to seek a separate operating license from the Commission. It will then be called upon to demonstrate that the concerns we mentioned have been taken care of. *Power Reactor Corporation* v. *Electricians,* 367 U.S. 396 (1961).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Frank F. Hooper
Glenn O. Bright

In the Matter of **Docket No. 50-358 OL**

CINCINNATI GAS AND ELECTRIC COMPANY, *et al.*
(William H. Zimmer Nuclear Station)

July 2, 1980

The Licensing Board grants a joint petition for leave to intervene in this proceeding and admits all of the intervenor's proposed contentions for purposes of discovery, subject to their possible modification or reconsideration after discovery and prior to hearing.

COMMISSION PROCEEDINGS: TMI POLICY STATEMENT

The Commission's "Further Commission Guidance for Power Reactor Operating Licensees," published June 20, 1980, does not impose new requirements with respect to the consideration of late-filed contentions, it reiterates that the existing provisions of 10 CFR 2.714(a) will continue to be applied to late-filed contentions; arising out of the Three Mile Island accident.

EMERGENCY PLAN: EMERGENCY PLANNING ZONE

The ten-mile airborne exposure emergency planning zone is not a zone with boundaries fixed by regulation but, rather, is only a *prima facie* starting point for determining what an appropriate zone should be. An applicant's free to seek smaller zones, and any party can seek to justify larger zones in appropriate circumstances. *Cincinnati Gas and Electric Company* (William H. Zimmer Nuclear Station), LBP-80-14, 11 NRC 570, 574 (1980). 10 CFR 2.714(a)(1).

MEMORANDUM AND ORDER RULING ON CONTENTIONS OF ZAC-ZACK

In our Memorandum and Order of April 22, 1980, LBP-80-14, 11 NRC 570, we considered the untimely petition for leave to intervene filed jointly by Zimmer Area Citizens (ZAC) and Zimmer Area Citizens of Kentucky (ZACK) (hereinafter referred to jointly as ZAC-ZACK). After balancing the five factors specified in 10 CFR 2.714(a), we ruled that, subject to its furnishing at least one adequate contention, ZAC-ZACK's petition would be granted. Further, at least one acceptable contention was required to bear upon emergency planning or radiological monitoring in Kentucky. We established a schedule under which ZAC-ZACK would provide copies of its proposed contentions to the Applicants and Staff. Thereafter, after attempting to reach agreement, all those parties were to report to us the results of the negotiations (and their positions on proposed contentions, to the extent that agreement could be reached).

In accordance with the foregoing schedule (as modified by our Order of May 29, 1980), ZAC-ZACK first submitted draft contentions, the parties negotiated concerning those contentions, ZAC-ZACK filed revised contentions, and the Applicants and Staff have filed their positions with respect to those contentions. Thirteen contentions are before us, two of which include several subparts. Most of them bear to some degree upon emergency planning or radiological monitoring in Kentucky. Should any of those contentions be found acceptable by us, the conditions imposed by LBP-80-14 as prerequisites to ZAC-ZACK's admittance to this proceeding would thus be satisfied.

The Staff offers no objection to the admission of ZAC-ZACK's contentions (although it does not take a position on the merits, substance, basis or validity of any of them). It adds that if, at the time of hearing, any of those contentions are in conflict with NRC rules and regulations, the Staff will then interpose appropriate objections pursuant to 10 CFR 2.758. On the other hand, the Applicants oppose all of the contentions for various reasons.

We will consider in this opinion each of the points raised by the Applicants. Although some of those points may have merit, we believe that certain of ZAC-ZACK's contentions are clearly acceptable and that the best course in general is that advocated by the Staff. We thus are admitting all of ZAC-ZACK's proposed contentions for purposes of discovery; prior to hearing they will be subject to modification or reconsideration to take into account, *inter alia,* the current status of NRC rules and regulations and the emergency and monitoring plans then before us. 10 CFR 2.752, 2.749. (To accord with the requirements of 10 CFR 2.714(b), which requires the

submission of at least one acceptable contention, we are specifying certain of the contentions which we regard as clearly admissible under currently existing guidelines.)

1. The Applicants first take note of the issuance by the Commission on June 16, 1980 of a Statement of Policy denominated "Further Commission Guidance for Power Reactor Operating Licenses." (This policy statement was published at 45 FR 41738 (June 20, 1980)). According to the Applicants, the Commission has set a strict standard for the admission of late-filed TMI-related contentions (among which they include the ZAC-ZACK contentions). The Applicants claim that all the contentions "must be denied as having failed to demonstrate good cause for the belated admission of *each such contention* under this Statement of Policy" (emphasis supplied). The Applicants also assert that the contentions are prohibited as asserting that additional supplementation of existing regulations beyond that covered in NUREG-0694, "TMI-Related Requirements for New Operating Licenses," is required.

Neither of these points is well taken. The first is no more than an invitation for us to reconsider our order in LBP-80-14. We decline to do so. We there balanced the factors in 10 CFR 2.714(a) and determined, with respect both to emergency planning and radiological monitoring, that good cause had been demonstrated for the tardy submission of contentions on these subjects. We have been supplied with no new information which would cause us to reconsider the result which our earlier balancing caused us to reach. We applied as strict a standard as we believe is mandated by the new policy statement. Indeed, we view the policy statement as not imposing any new requirements with respect to late-filed contentions but only as reiterating that the existing provisions of 10 CFR 2.714(a) will continue to be applied to late-filed TMI-related contentions. We did not, of course, undertake a separate balancing for each individual contention, as the Applicants seem to suggest would be appropriate. The contentions were not even before us at the time.[1] But we scarcely would expect the Commission to have imposed a requirement mandating substantial additional paperwork and effort without giving much more explicit guidance to that effect than can be derived from the two sentences relied on by the Applicants.[1A]

[1]The Appeal Board found no fault in our having undertaken this balancing prior to our receipt of ZAC-ZACK's contentions. ALAB-595, 11 NRC 864, 865 (June 9, 1980).

[1A]"The Commission believes that where the time for filing contentions has expired in a given case, no new TMI-related contentions should be accepted absent a showing of good cause and balancing of the factors in 10 CFR 2.714(a)(1). The Commission expects strict adherence to its regulations in this regard."

We need add that, with the contentions before us, our balancing of the third factor in 10 CFR 2.714(a), the "extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record," would favor admission of ZAC-ZACK more strongly than as indicated in LBP-80-14. We there observed that the possible knowledge of transportation and traffic conditions by certain ZAC-ZACK members could prove of assistance to us in developing a sound record, assuming ZAC-ZACK's contentions encompassed such matters. But in the absence of contentions we were unable to accord much weight to ZAC-ZACK's showing on this factor, and we balanced the factor (although not strongly so) against admission of the organization. LBP-80-14, 11 NRC at p. 576. The contentions reflect several matters concerning emergency planning which have not been raised by other parties—for example, the alleged lack of various county facilities (Contentions 1(d) and 1(e)), the impassibility of access roads in inclement weather conditions (Contention 1 (h)), and the inadequacy of the evacuation and monitoring plans for specified reasons with regard to 18 elementary and secondary schools lying within the 10-mile emergency planning zone (EPZ) (Contentions 2 and 8). These matters appear to us to be significant, and the record is likely to be developed better with ZAC-ZACK's assistance than without such participation. For that reason, we now balance factor 3 in favor of ZAC-ZACK's admittance to the proceeding, and our opinion in LBP-80-14 is modified to that extent. (Our ruling, of course, is unchanged).

As for the Applicants' claim that the contentions are barred by the provision of the Commission's policy statement which precludes intervenors from advocating in licensing proceedings additional supplementation of existing regulations beyond that covered in NUREG-0694, we do not view any of the contentions as having this effect. The policy statement determined that operating license applications (such as the application before us) should be measured against regulations as augmented by the requirements specified in NUREG-0694. The requirements were subdivided into two categories: (1) those that interpret, refine or quantify the general language of existing regulations, and (2) those that supplement the existing regulations by imposing requirements in addition to specific ones already contained therein. Requirements for emergency planning and monitoring set forth in NUREG-0694 appear to be based substantially on existing regulations or other guidelines. See, *e.g.,* Requirements III.A.1.1, III.A.1.2, III.B.2, and III.D.2.4. The limitation on litigation to which the Applicants refer applies only to the second of these categories. But ZAC-ZACK's contentions appear to be based on interpretations of existing regulations or proposed regulations as to which the Commission has

decreed immediate effectiveness. They are thus encompassed within the first category, as to which the Commission stated:

> Insofar as the first category—refinement of existing regulations—is concerned, the parties may challenge the new requirements as unnecessary on the one hand or insufficient on the other. [Policy Statement].

They thus do not appear to be barred from litigation by the policy statement.[2]

2. Assuming we were to find—as we have—that the Commission's policy statement does not bar consideration of ZAC-ZACK's contentions, the Applicants generally assert that the contentions do not conform to the specificity and basis requirements of 10 CFR 2.714(b). They point to ZAC-ZACK's statement of its bases, which consists of a listing of various statutes, regulations, proposed regulations, or other government-issued documents, and claim that this listing does not constitute a sufficient basis for the assertions throughout the statement of contentions that various measures are "inadequate." We disagree.

Properly interpreted, the contentions must be read as asserting that the Applicants' emergency plan and radiological monitoring program do not conform to the requirements or guidelines of the stated regulations or other documents. To deal only with the emergency plan, the current version of that plan (upon which ZAC-ZACK's contentions must be deemed to be based) appears in Appendix F of the Final Safety Analysis Report (FSAR) and is dated July 1979.[3] We acknowledge that somewhat more specificity in the attribution of particular alleged deficiencies in the plan to specific regulations or other guidelines would have been desirable. But given the developing nature of both the plan and NRC requirements, insistence on such specificity at this time would be unproductive and unreasonable. Moreover, only a cursory glance at the July 1979 plan reflects that it fails to include many of the features sought by ZAC-ZACK and claimed by ZAC-ZACK to be required or permitted by the regulations or other guidelines. For example: evacuation appears to be focused on, if not confined to, the low population zone; there appears to be no specific reference to evacuation throughout a larger emergency planning zone. See, *e.g.*, FSAR,

[2]Even if some of the NUREG-0694 requirements as to emergency planning and radiological monitoring were regarded as falling in category 2, ZAC-ZACK's contentions do not appear to go beyond questioning the Applicants' compliance with such requirements and hence are litigable on that basis as well.

[3]The draft version submitted to the Commission in December 1979 (of which we were provided a copy) is clearly no more than a draft. Insofar as we are aware, it has not been formally submitted as an amendment to the FSAR and thus cannot be utilized as a more recent revision of the FSAR.

Appendix F, F.5.4.1.b.3, and Table F-9. Further, explicit plans for evacuation do not appear to be formulated for the 18 elementary schools referenced by ZAC-ZACK but rather only for one school—the Moscow Elementary School. See FSAR, Appendix F, F.5.1 (at pp. F-14) and F.5.4.1.b.3 (at pp. F-19). Whether or not the plan can or should (or in fact does) cover the matters raised by ZAC-ZACK is not here at issue. These are matters which are properly the subject of litigation (either hearing or summary disposition). *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (April 22, 1980), *review denied,* Commission Order dated June 20, 1980; *Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423 (1973).[4]

In sum, given the lack of finality of the emergency plan currently in the FSAR and the developing status of the Commission's rules and guidelines on this subject, the emergency planning contentions as stated conform sufficiently to the specificity and basis requirements of 10 CFR 2.714(b) to warrant their acceptance for discovery purposes. The same analysis would be applicable to the contentions raising radiological monitoring issues. (For the same reason, we reject the lack-of-basis objections voiced by the Applicants to contentions 6, 7, 8, and 11). Notwithstanding the foregoing, the Board wishes to point out that the issues raised by Contentions 1(e) and (h), 2(a) and (c), and 8 seem particularly significant and likely to be acceptable as contentions under any requirements or guidelines in these areas which the Commission might be expected to issue. The specified portions of these three contentions presently conform to the requirements of 10 CFR 2.714(b).

We stress, however, that the other contentions are being accepted only for discovery purposes. Many of these contentions will have to be further refined, specified, and supported in order to remain in the proceeding. In fact, all contentions (even those which we presently find to be adequate) must be reviewed after discovery and prior to hearing to determine their continuing validity. It may well be, for instance, that revised emergency or monitoring plans will include some or all of the features sought by ZAC-ZACK. On the other hand, some of those features may turn out to be impermissible under regulations in effect at the time of hearing. Prior to

[4]The Applicants express some disagreement with ALAB-590, the Appeal Board's decision in *Allens Creek,* stating that, at least for contentions related to TMI, the Commission has chosen to overrule that decision. We disagree. Subsequent to the filing of the Applicants' brief on ZAC-ZACK's contentions, the Commission on June 20, 1980, issued an Order which explicitly declined to review ALAB-590 and indicated that the decision was consistent with existing practice, as exemplified by the 1973 decision in *Grand Gulf* (ALAB-130). We have reviewed ZAC-ZACK's contentions with these decisions in mind.

hearing, we expect to hold a prehearing conference to discuss matters of this nature.

3. Turning to the Applicants' specific comments on particular contentions, they contend first that the coverage of all of ZAC-ZACK's proposed contentions regarding evacuation and other appropriate protective actions should be limited to the plume exposure pathway EPZ of approximately 10 miles. They assert that, since no portion of Brown County, Ohio, is within the plume exposure pathway EPZ, references to Brown County in Contention 1 should be deleted.

In our view, the Applicants have misread the EPZ requirement. As we indicated in LBP-80-14, the 10-mile airborne exposure EPZ is not a zone with boundaries fixed by regulation but, rather, is more of a *prima facie* starting point for determining what an appropriate zone should be. "[A]n applicant [is] free to seek smaller zones, and any party [can] seek to justify larger zones, in appropriate circumstances." LBP-80-14, 11 NRC at p. 570. See also *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), LBP-80-11, 11 NRC 477, 483 (March 7, 1980); NUREG-0654, FEMA-REP-1, at p. 14 (Table 1). Because ZAC-ZACK may be able to demonstrate that the EPZ should extend to all or part of Brown County, we decline to delete the references to Brown County from Contention 1.

4. The Applicants next seek to have a portion of Contention 1(f) denied, on the ground that its subject matter (flooding of access roadways to Zimmer Station) was considered, and the issue resolved at the construction permit stage. We decline to do so. As we read it, and given the difference in standards in effect at the construction-permit stage, the issue raised by ZAC-ZACK may be broader in its geographic scope than the issue considered at the construction permit stage. Moreover, the construction permit proceeding was uncontested, and the issue in question was not even alluded to in the initial decision. LBP-72-27, 5 AEC 133, *affirmed,* ALAB-84, 5 AEC 372 (1972). In these circumstances, we can give no weight to the general approval of the construction permit in terms of its influencing our determination whether to admit Contention 1(f) in the instant proceeding. *Cf. Commonwealth Edison Company* (LaSalle County Nuclear Station, Units 1 and 2), ALAB-193, 7 AEC 423, 425 (1974). Finally, inasmuch as the issue arises as a result of Atomic Energy Act requirements, its reconsideration at the operating license stage would not be barred even if there had been full adjudicatory consideration at the construction permit stage—irrespective of whether any new matters were said to be applicable. *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), LBP-79-10, 9 NRC 439, 464-65, *affirmed on other grounds,* ALAB-549, 9 NRC 644 (1979).

5. The Applicants object to the portion of Contention 2(b) which seeks to raise the psychological trauma of the aftermath of an accident as an issue

bearing upon emergency planning in this proceeding. They correctly observe that the question whether this subject should be treated by licensing boards is now pending before the Commission. See *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 2), CLI-80-25, 11 NRC 786, n.9 (June 12, 1980).[5] Rather than rejecting the issue at this time pending resolution by the Commission, as the Applicants suggest, we believe that it would lead to greater expedition in this proceeding if we accepted it now for discovery purposes, subject to reconsideration if the Commission should later preclude its adjudication in proceeding such as this one. In electing this course, we note that in CLI-80-25 the Commission in fact took account of psychological stress. 11 NRC at p. 786.

6. The Applicants describe Contention 4 as "incomprehensible" because of its use of the term "demography." We agree that the contention is somewhat confusing. But such confusion can perhaps be clarified through discovery, and we will therefore admit the contention for discovery purposes. As we previously stated, prior to hearing we expect to re-examine all of the contentions to determine which ones should remain in the proceeding. At that time, ZAC-ZACK will be expected to have further refined, specified and supported a contention such as this one to preclude its dismissal.

7. The Applicants appear to be correct in their assertion that Contention 6, to the extent it speaks of monitoring of releases into the Ohio River, is subsumed by the contentions of the City of Cincinnati. It may well be, however, that the relief sought by ZAC-ZACK (such as the location and type of monitoring equipment) differs from that sought by the City. And as we pointed out in LBP-80-14, the requirements regarding monitoring are still in the process of development. 11 NRC at p. 574. That being so, we will admit this portion of Contention 6 for discovery purposes, subject to its being later reconsidered or consolidated (if appropriate) with other similar contentions.

Contrary to the claim of the Applicants, the portion of Contention 6 dealing with the monitoring of "anticipated radiation releases" does not overlap the Appendix I issues which have already been litigated. Those issues dealt with the health effect of such releases. Contention 6 concerns the adequacy of the monitoring of such releases. As such, it may overlap to some degree issues raised by the City of Cincinnati or Dr. Fankhauser. We will treat it as we have the question of monitoring of releases into the Ohio River, accepting it for discovery purposes but subject to reconsideration or consolidation with similar issues prior to hearing.

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[5] *Reconsideration denied,* CLI-80-26, 11 NRC 789 (June 26, 1980).

We stress again, as we have earlier in this opinion and as we did in LBP-80-14, that to the extent that ZAC-ZACK's contentions may overlap, and seek similar relief as, those of other parties, we will require that such contentions be consolidated. We will also exercise care in avoiding duplicative testimony or cross-examination. To that end, we will expect the parties sponsoring similar or duplicate contentions to attempt to agree upon a lead intervenor for each contention, or segregable portion of a contention, for the purpose of presenting testimony or conducting cross-examination. We will consider these matters at the prehearing conference which we will hold prior to hearing, and subsequent to the completion of discovery.

8. The Applicants object to a portion of Contention 9, and to Contention 13, on the basis that they seek relief beyond that currently permitted by NRC regulations. Without deciding whether that claim is accurate, we elect to treat these contentions in the manner described in paragraph 2 of this opinion. Given the developing status of NRC regulations in these areas, we accept the contentions for purposes of discovery, subject to later reconsideration if warranted.

9. Finally, the Applicants object to Contention 12, which asserts that four of the counties near the plant do not possess adequate financial resources to fulfill their obligations under the emergency plan. The Applicants describe this contention as irrelevant to the ultimate issues of emergency planning before the Board.

It may well be that all we need look at is the adequacy of substantive features of the emergency plan. But it also may be that the likelihood of successful implementation of the plan must also be considered. *Cf. Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 2), ALAB-486, 8 NRC 20-21 (1978). The financial ability of the four counties appears to be pertinent to that issue. Pending development prior to hearing of new Commission guidance in this area, we will accept the contention for discovery purposes, subject to later reconsideration if warranted.

10. The Applicants urge that, to the extent we admit any contentions, we consolidate them for purposes of consideration at an evidentiary hearing with those contentions of other intervenors already admitted in this proceeding. The Applicants also urge that we designate a lead intervenor for each of those consolidated contentions. As we previously indicated, we intend to take both actions, but only following the completion of discovery. At that time we can better judge the scope of the various contentions and their relationship both to the Applicants' revised emergency plan and monitoring program and the Commission's outstanding regulations and other guidelines. The contentions we have in mind for possible consolidation with the ZAC-ZACK contentions are numbers 2, 3 and 4 of Dr.

Fankhauser, and numbers 7, 8, 9, 10, 18 and 19 of the City of Cincinnati. We repeat that we expect the sponsoring parties to reach agreement on consolidation and lead intervenors for each of these contentions. However, if the parties are not able to do so by the time of the prehearing conference mentioned earlier, we will exercise our authoriy under 10 CFR 2.715a to order such consolidation or to pick a lead intervenor, to the extent appropriate. See also 10 CFR 2.714(e).

The Applicants also suggest that we renumber ZAC-ZACK's contentions to accord with the numbering system previously adopted in this proceeding. We adopt that suggestion. Hereafter the ZAC-ZACK contentions will be referred to as follows:

Board No.	ZAC-ZACK No.
20 (a-g)	1(a-f, h)
21 (a-e)	2(a-e)
22	3
23	4
24	5
25	6
26	7
27	8
28	9
29	10
30	11
31	12
32	13

For the foregoing reasons, as well as for the reasons and rulings included in LBP-80-14, ZAC-ZACK's petition for leave to intervene is *granted.* Discovery on ZAC-ZACK's contentions may begin immediately and shall be subject to the schedule prescribed in LBP-80-14, 11 NRC at p. 579. (To avoid confusion, the same discovery schedule will govern all the contentions of all parties relating to the emergency plan and to radiological monitoring, as listed at p. 75, *supra.*)

This Order, together with that in LBP-80-14, is subject to appeal pursuant to the terms of 10 CFR 2.714a.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland
this 2nd day of July 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Marshall E. Miller, Esquire, Chairman
Dr. Kenneth A. McCollom
Dr. Hugh C. Paxton

In the Matter of **Docket No. 50-344-SP**

PORTLAND GENERAL ELECTRIC COMPANY, *et al.*
(Trojan Nuclear Plant) **July 11, 1980**

The Licensing Board authorizes the issuance of an amendment to the operating license for the facility allowing modifications to be made to the control building for the plant. The Board concludes that the modifications satisfy Commission requirements for bringing the plant into compliance with its operating license; that they are adequate from a safety standpoint and that the plant can be operated safely while such modifications are being performed.

TECHNICAL ISSUE DISCUSSED:

Seismic structural design capabilities.

APPEARANCES

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INITIAL DECISION

I. PRELIMINARY STATEMENT

A. ULTIMATE ISSUES

This Initial Decision concerns the ultimate issue of whether the scope and timeliness of proposed modifications, required to bring the Trojan Nuclear Plant into substantial compliance with NRC Operating License No. NPF-1, are adequate from a safety standpoint. This issue was defined in Section IV of the Commission's Order for Modification of License issued May 26, 1978 (43 FR 23678, 23770).

This ultimate issue of the adequacy of proposed modifications from a safety standpoint, also involves the question of whether operation of the Trojan plant can be conducted safely while such modifications are being performed and prior to their completion. Interim operation of this nuclear plant was authorized in Phase I of this proceeding by our Partial Initial Decision issued December 21, 1978 (LBP-78-40, 8 NRC 717). Pursuant to that Partial Initial Decision, an amendment was issued to the Trojan operating license authorizing interim operation of the plant "until further order of the Atomic Safety and Licensing Board issued in conjunction with the decision on the scope and timeliness of modifications from a safety standpoint..." (*Id.* at p. 747). That "further order" is one of the subjects under consideration in this Phase II of the proceeding.

The background events of this proceeding were set forth in the Partial Initial Decision (8 NRC 717), and they will not be repeated in unnecessary detail here. The May 26, 1978 Modification Order resulted from the discovery by the Licensee[1] and its agent, the Bechtel Corporation, of several design errors with respect to the shear walls in the Control Building at the facility. This Modification Order found that these design errors reduced the structural capacity of the Control Building, that the originally intended seismic capability and safety margins should be substantially restored by appropriate modifications, and that operation of the facility in its as-built condition would violate the facility license Technical Specification 5.7.1. However, the Modification Order further found that the Control Building had adequate structural capacity to safely withstand the licensed

[1]Portland General Electric Company (PGE), the City of Eugene, Oregon and Pacific Power and Light Company, the licensed owners of the plant referred to collectively as the "Licensee."

Safe Shutdown Earthquake (SSE)[2] for the Trojan facility (0.25g peak horizontal ground acceleration).

The Modification Order also provided that any person whose interests might be affected could file a request for hearing. A number of persons availed themselves of this opportunity for hearing and were admitted as intervening parties to the Phase I evidentiary hearings (8 NRC at pp. 722-23). The Licensing Board also ordered the bifurcation of the proceeding into two phases (Order of August 25, 1978). Phase I involved a consideration of and decision upon the question of interim operation of the Trojan plant prior to modifications of the Control Building, and culminated after evidentiary hearings in the Partial Initial Decision of December 21, 1978 (LBP-78-40, 8 NRC 717). The instant Phase II of the proceeding involves consideration of the structural adequacy of the proposed modifications themselves and the safety aspects of their implementation.

B. PHASE II EVIDENTIARY HEARING

Written contentions were required to be filed by the intervening parties in Phase II of the proceeding, and contentions were filed by the Coalition for Safe Power (CFSP) by Eugene Rosolie and by the Consolidated Intervenors (CI, consisting of Nina Bell, David B. McCoy and C. Gail Parson).[3] Following oral argument at a prehearing conference on March 29, 1979, certain of the proffered contentions of both CFSP and CI were admitted as issues in controversy. The admitted contentions of CI were subsequently dismissed because of the failure of CI to comply with a Licensing Board Order compelling responses to discovery requests from the Staff.[4] At the Intervenor's request, CI was consolidated with CFSP, and CI was bound by the responses to interrogatories filed by CFSP. The contentions which remained as issues are as follows:

CFSP No. 3 Plant Staff review of proposed modification is inadequate to assure no violations of Technical Specifications will occur (Tr. 3011-20).

CFSP No. 4 NRC Staff review of proposed modification is inadequate to assure no violations of Technical Specifications will occur (Tr. 3046-51).

[2]That is, the facility design must be such as to insure that, should there be an earthquake providing the defined level of vibrating ground motion at the site, the structures, systems and components necessary to bring about a safe shutdown of the reactor will remain functional. See 10 CFR Part 100, Appendix A, Section III (c).

[3]Intervenors Columbia Environmental Council (CEC) and Stephen M. Willingham failed to file contentions in Phase II, and accordingly they were dismissed as parties by the Prehearing Conference Order (Phase II) of April 12, 1979.

[4]See Orders entered June 5 and June 15, 1979 and October 17, 1979.

CFSP No. 12 Licensee has not provided information which shows that the plant can be operated during modification work without an undue risk to the public health and safety (Tr. 3055-59).

CFSP No. 13 The plant cannot operate in a safe condition while the modification work is being done (Combined with CFSP No. 12, above. *Id.*).

CFSP No. 15 Licensee has not identified all safety equipment or equipment needed for safe operation of the plant that would be affected by proposed modifications (Tr. 3062-63).

CFSP No. 16 Licensee has not made adequate plans to protect all safety equipment and equipment for safe operation during the modification work (*Id.*).

CFSP No. 17 Performance of modification work will hamper the ability of plant operators to respond to any emergency properly and thus poses an undue risk to the public health and safety (Tr. 3063-65).

CFSP No. 20 Inadequate assessment of the effects of drilling in the Control Building walls during modifications has been made (Tr. 3078-83).

CFSP No. 22 The effect of the steel plate on displacement in the Complex has not been completely analyzed (Tr. 3094-98, 3108-11).

The Licensee filed a motion for summary disposition of CFSP Contentions 3, 17, 20 and 22. After hearing from all parties, the Board granted the motion for summary disposition as to CFSP 3 (Tr. 3485), but denied the motion with regard to CFSP 17 and 20 (Tr. 3498, 3513). The Licensee withdrew its motion as to CFSP 22 (Tr. 3514), and CFSP voluntarily withdrew its Contention 4 (Tr. 3615). Accordingly, the contentions considered at the Phase II evidentiary hearing were Nos. 12, 13, 15, 16, 17, 20 and 22, *supra.*

The Intervenors also sought to raise an issue concerning the adequacy of the Licensee's existing security plan to deal with the modification work. At the Board's suggestion, all parties stipulated a procedure under which a

Staff security expert would review and evaluate the security plan in light of the Intervenor's concerns over the modifications work.[5] Subsequently, CFSP requested this security review to include several incidents which had occurred at the Trojan plant after the original review.[6] The security review was performed as requested and the evaluation showed the security plan to be adequate while the modification work was being performed. Although CFSP indicated that it felt that the Staff's review was not adequate, it gave no basis for this view when requested to do so by the Board.[7] No nexus was shown between the incidents alleged and the issues over which this Board has jurisdiction. Such matters are therefore not relevant to this proceeding and cannot be considered here.[8]

All parties prefiled their written testimony according to the schedule set by the Board at the March 11, 1980 prehearing conference. On March 17, 1980, Licensee prefiled the written testimony of Donald J. Broehl, Lief W. Erickson, Richard C. Anderson, William H. White and Kenneth M. Cooke on matters other than structural adequacy of the modified Complex (Licensee Exh. 27). In addition, Licensee prefiled the written testimony of Richard C. Anderson, William H. White, Bimal Sarkar and Patrick Chang-Lo on the structural adequacy matters (Licensee Exh. 28), as well as the testimony on these matters of Licensee's independent experts, Professors Myle J. Holley, Jr. and Boris Bresler (Licensee Exh. 29A).

The Staff prefiled the direct written testimony of Charles M. Trammell, III, Fred Clemenson, James E. Knight, Kenneth S. Herring and Drew Persinko on matters other than structural adequacy of the modified Complex (Staff Exhs. 12, 14, 15 and 16). On March 21, the State of Oregon prefiled the testimony of Dr. Harold I. Laursen on the structural adequacy of the modified Complex (Oregon Exh. 2). On March 24, 1980, the Staff prefiled the testimony of Kenneth S. Herring and Drew Persinko on structural adequacy matters (Staff Exh. 17). Finally, Licensee prefiled its answers to questions previously propounded by Dr. McCollom (Tr. 3531-35), on March 30 (Licensee Exh. 30).

The Phase II evidentiary hearing was held in Portland, Oregon on March 31-April 3 and April 16-17, 1980. The only limited appearance statement from a member of the public was heard on March 31 (Tr. 3792-94). Witnesses were presented at both sessions by Licensee, the State of

[5]Tr. 3090-93.
[6]Tr. 3402-12, 3527-30, 3583-89.
[7]Tr. 3529-30, 4682-83.
[8]However, the Intervenors may request the Director of Nuclear Reactor Regulation to institute a show-cause proceeding if they have concerns about security at the Trojan facility. 10 CFR 2.202; Portland General Electric Company (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 290, n. 6 (1979).

Oregon and the NRC Staff. CFSP attended the hearing and cross-examined witnesses, but presented no witnesses of its own. The Board conducted extensive examination on all of the direct evidence presented.

When the hearing began on March 31, the Staff's prefiled testimony indicated that resolution had not yet been reached between the Staff and the Licensee with respect to a number of the matters that had been described as unresolved in the Staff's Safety Evaluation Report (SER) filed February 14, 1980 (Staff Exhs. 13A, 13B). With respect to nonstructural matters, the Staff indicated that all matters were resolved by the close of the first hearing session (Tr. 4480-81 (Gray)). The illness of the Staff's principal structural witness (Tr. 4476-83) caused a delay in the resolution of structural matters. However, the Staff subsequently filed revised testimony which reflected that these matters were resolved to the Staff's satisfaction (Staff Exhs. 15A, 17A). Thus, there were no controversies between the Licensee and the Staff before the Board for resolution at the hearing.

The record compiled for Phase II comprises more than 1,000 pages of transcript as well as the exhibits which were admitted into evidence, as listed in the Appendix attached hereto.

II. FINDINGS OF FACT

A. DESCRIPTION OF THE BUILDING COMPLEX

The Control, Auxiliary and Fuel Buildings (Building Complex) are interconnected by their foundation systems and floor slabs. The Auxiliary Building is located between the Fuel Building at the east end of the Building Complex and the Control Building at the west end and is supported laterally by both the Fuel and Control Buildings, with the reinforced concrete floor slabs acting as diaphragms to transfer lateral loads. The connecting floor slabs and walls interact when subjected to seismic forces (8 NRC 723-24; Licensee Exh. 24, at pp. 1-12). The Turbine Building, which is closely associated with the proposed modification, is adjacent and west of the Control Building.

The Control Building is a box-type structural system with its ground floor on rock foundation at elevation 45 feet, concrete floors at elevations 61 feet, 77 feet, and 93 feet and with a roof slab at elevation 117 feet. The Control Building is composed of a structural steel framing system with steel beams and columns supporting reinforced concrete floor slabs, with shear walls designed to resist lateral seismic forces of an earthquake. Most of the shear walls are of a composite-type construction (composite walls) consisting of a reinforced or unreinforced concrete core between two layers (wythes) of reinforced grouted masonry block. The two block wythes generally sandwich the structural steel frame so that the steel frame

members are embedded in the concrete core (Licensee Exh. 24, at pp. 3-12; Staff Exh. 13A, at p. 1). A railroad bay is located at ground level in the Control Building between column lines 41 and 46 with large openings in the east and west walls for train access.

The Auxiliary Building is approximately 115 feet by 62 feet with the longer dimension running in the East-West direction. At the lower level, the north and south walls are composite walls and the other walls are of reinforced masonry block. Above elevation 61 feet, the exterior walls are reinforced masonry block and interior walls are reinforced masonry block or, for shield walls, composite walls. The walls from elevation 93 feet to 117 feet are reinforced masonry block (Licensee Exh. 24, at pp. 3-13).

The Fuel Building is approximately 62 feet by 180 feet with the longer dimension running in the North-South direction. Floor slabs at elevation 61 feet, 77 feet and 93 feet provided continuity with the Auxiliary Building. From 93 feet to the roof level at elevation 138 feet, the structural system is steel framing rather than block and reinforced concrete walls. Most of the lateral resistance of the Fuel Building is provided by the enclosure structure for the holdup tanks and the spent fuel pool (Licensee Exh. 24, at pp. 3-13).

B. DESIGN DEFICIENCIES AND OBJECTIVES OF MODIFICATIONS

The Control Building design deficiencies that led to the Order for Modification of License of May 26, 1978 are:

(1) Both the horizontal and vertical reinforcing steel embedded in the inner concrete core of the Control Building shear walls is generally discontinuous, in that it is not anchored to the steel beams and columns of the Control Building's steel frame as required by applicable codes and standards.

(2) Misapplicaton of the applicable code ACI 318-63 shear design formulae in combination with the applicable limiting OBE seismic loading resulted in less than the required amounts of reinforcing steel in the shear walls.

As a result of these design deficiencies, the capacity of the Building Complex together with the contained systems and components to withstand seismic events is lower than intended (8 NRC 725-26; Staff Exh. 13A, at p. 2, 10; Staff Exh. 17A, at p. 3).

1. The Wall Problem

In late 1979 during a plant shutdown, the Licensee reported deficiencies in certan double-block walls (wall problem) in the Control Building Complex, which could influence structural integrity and support of

piping in the event of an earthquake. Because the wall problem introduced uncertainty in issues that led to interim operation, the Board issued an order requiring further information on the matter and specifying that permission of the Board would be required for resumed operation.[9] The Board held a hearing on December 28 and 29, 1979 for expeditious consideration of the matters in this order. Testimony of witnesses at this hearing satisfied the Board that interim operaton could safely continue when permitted by the Office of Inspection and Enforcement (Tr. 3443-46, 3449-50). Although both Licensee and Staff viewed the wall problem as an independent enforcement matter, the Board did not agree and it asked to be kept informed of further developments.

Subsequently, a report by the Staff's masonry consultant questioned Licensee's assumed value of allowable stress in mortar bonding the double wall, "collar joint stress" (Staff Exh. 19). This led to Staff's requirements for short term *in situ* tests regarding collar joint stresses and ill-defined long term tests. At the prehearing conference of March 11, 1980, a Staff witness testified that double-block walls enter STARDYNE analyses and explained the Staff's desire for a "confirmatory" test program (Tr. 3544, 3603-14). As a result, the Board continued to view the wall problem as a potential issue and asked Licensee and Staff to provide evidence regarding it at the evidentiary hearing.

2. Objectives of the Proposed Building Complex Modifications

Although the as-built complex was found to be capable of withstanding the O.25g acceleration of the SSE specified for Trojan Nuclear Plant, the design deficiencies both reduced the conservatism and design margins with respect to seismic capability below that intended for the life of the plant, and reduced the operating basis earthquake (OBE)[10] capability below that required by the operating license (Staff Exh. 13A, at p. 2; Licensee Exh. 28, pp. 7, 7a). The Licensee proposed modifications intended to add strength to the Control Building, to tie the Control Building together in a better way, and to minimize the impact of the modifications on operation of the Trojan Nuclear Plant (Tr. 3705-07, 3764 (Anderson); Licensee Exh. 27, at p. 15).

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[9]Modification of Order Permitting Interim Operation of Trojan Nuclear Plant, November 30, 1979.

[10]That is, the facility must be designed so that, should there be an earthquake providing that defined level of vibratory ground motion at the site, the plant nonetheless could continue in normal operation without undue risk to the public health and safety (10 CFR Part 100, Appendix A, III(c)). The 0.15g value assigned to the OBE by the seismic criteria pertaining to the Trojan facility, is not in present dispute.

The objective of the proposed modifications is to substantially restore the seismic margins and conservatisms intended in the original design. Such are relied upon to account for uncertainties in analysis, design and construction as well as assuring that older plants, such as Trojan, do not need to be backfitted to meet newly-generated seismic design requirements that may be more stringent than those usually required (Staff Exh. 17A, at p. 3).

C. DESCRIPTION OF PROPOSED MODIFICATIONS

The proposed modifications to the Control Building include four new structural elements: three parallel walls running in the North-South direction and a steel plate added to the west wall. The railroad bay through the Control Building will be closed off by two of these walls, and the third wall is an interior wall crossing the current railroad bay (Licensee Exh. 24, 1.2.6, 3.2.1; Licensee Exh. 28, at p. 10; Staff Exh. 13A, at p. 6, 20; Tr. 3703-05 (Anderson)). The four new structural elements proposed are:

(1) Adding an interior shear wall on column line N in the Control Building railroad bay structurally connected to shear walls at column lines 41 and 46 and to the underside of the floor slab at elevation 65 feet (Licensee Exh. 24, at pp. 3-3; Licensee Exh. 27, at pp. 8, 9).

(2) Adding a shear wall on column line R in the Control Building railroad bay structurally connected by bolts and grouted reinforcement steel to the existing north and west walls of the Control Building (Licensee Exh. 24, pp. 3-2, 4-5; Licensee Exh. 27, at pp. 9-10).

(3) Adding a shear wall along column line N in the Control Building railroad bay structurally connected by high-strength bolts and grouted reinforcement steel to the existing N line wall above elevation 65 feet and the walls at column lines 41 and 46 (Licensee Exh. 24, pp. 3-2, 4-8; Licensee Exh. 27, at p. 11).

(4) Adding a three-inch thick steel plate onto the outside face of the R line wall to further strengthen the west wall of the Control Building extending from column line 41 to beyond column line 46 and between elevations 59 feet 3 inches and 97 feet 3 inches with structural connections to the existing R line wall by the use of high-strength steel through-bolts (Licensee Exh. 24, Fig. 3.1-2; Licensee Exh. 27, at p. 10).

The addition of these four structural elements will add strength directly to the areas of the Control Building where the inherent structural weaknesses were brought about primarily by the railroad bay openings.

In addition to the four new structural elements, structural improvements will be made at several locations involving welding of beam-column connections and connecting of discontinuous reinforcing steel. The six structural improvements proposed are:

(1) Welding of existing bolted beam-column connections on the south side of column 46-N beneath elevation 77 feet.

(2) Welding of existing bolted beam-column connections on the south side of column 46-N beneath elevation 93 feet.

(3) Making the existing horizontal reinforcing steel continuous at the following locations:

(a) In the 41 line wall at column line Q between elevations 45 feet and 65 feet.

(b) In the 46 line wall at column line N between elevations 45 feet and 61 feet,

(c) In the 55 line wall at column line Q between elevations 45 feet and 61 feet, and

(d) In the 55 line wall at column line N between elevations 45 feet and 61 feet.

Making the existing horizontal reinforcing steel continuous requires removal of existing block and parts of the concrete core in walls to expose the reinforcing steel (Licensee Exh. 27, at pp. 12, 13).

Certain ancillary work, not a part of the structural enhancement of the Building Complex, will be performed in addition to the major structural work described. These include: modifications to safety-related equipment, components, and piping necessary for their seismic qualifications to the new building response spectra, installation of a new louvered section in the Turbine Building wall along column line 41, relocation of the existing Turbine Building roll-up door between column lines S' and T west to column line U to provide an air supply for the emergency diesel generators after closing off the railroad bay, alteration of the railroad spur outside of the Control Building, and installation of a new floor slab at elevation 54 feet 6 inches in the closed-off portion of the railroad bay to accommodate use of that area as office space (Licensee Exh. 27, at pp. 13-14).

D. STRUCTURAL ADEQUACY OF THE MODIFIED COMPLEX

Among other things, the May 26, 1978 Order for Modification of License requires that the Control Building be brought into substantial compliance with Technical Specification 5.7.1, of the Trojan Operating License and to restore the intended design margins of that Technical Specifications such that: (a) the Control Building OBE capacity of 0.15g

is met using 2% damping (FSAR Table 3.7.1); (b) the Control Building OBE capacity of 0.15g and SSE capability of 0.25g are met using a yield strength for reinforcing steel of 40,000 psi (FSAR 3.8.1.3.3); and (c) the masonry portions of the Control Building walls comply with Uniform Building Code (UBC) requirements for reinforced grouted masonry (FSAR 3.8.1.4).

1. Criteria for Determining Structural Adequacy

The criteria for determining structural adequacy of both the unmodified and modified Control Building are complicated by the fact that the major shear walls of the Building Complex are generally composite walls consisting of a reinforced concrete core placed between two layers of reinforced grouted masonry. The provisions of the UBC applicable to masonry are not applicable to the combination of masonry and concrete making up the composite walls. The UBC does provide for use of testing as an alternative to the code formulas.[11]

a. Determining Structural Adequacy

The appropriate criteria by which it can be determined whether the requirements of the May 26, 1978 Order for Modification of License are met include: (1) the specifications listed therein are used in the analytical model; (2) it is demonstrated that the modifications would bring substantial compliance with the seismic design requirements of the Trojan FSAR as referenced by Technical Specifications 5.7.1; and (3) where substantial literal compliance with those requirements is not possible due to the type of building construction, then conservative engineering judgments using alternative equivalent methodology are used.

The capacities of the new reinforced concrete walls and the new steel plate to be added are determined by two codes not referenced in FSAR 3.8, ACI 318-77 Code and AISC Manual of Steel Construction, 7th Edition, respectively. Their use is consistent with that section's requirements

[11]For example, existing codes do not deal with the type of construction present in the Complex in which a steel frame is embedded in composite walls (Tr. 4420 (Bresler)). Composite walls, as used at Trojan are not addressed by the UBC (Licensee Exh. 28, at p. 28; Licensee Exh. 30; Staff Exh. 17A, at pp. 41-42). Consequently, the requirement in FSAR 3.8.1.5 that "concrete block walls" be designed to UBC requirements for masonry cannot be met for the composite walls of the Complex for which there is no applicable code provisions (Licensee Exh. 29, at p. 48). Instead, in the absence of specific code provisions for composite walls, a test program was utilized to provide the information and capacity criteria that building codes would have provided (Licensee Exh. 28, at p. 25; Licensee Exh. 29A, at pp. 5-6).

regarding these materials (Licensee Exh. 28, at p. 47; Staff Exh. 13A, at p. 69, 4.2.1; Tr. 4405 (White)).

b. Seismic Input for the Analytical Model

The seismic input criteria for use with the analytical model were provided for in the FSAR 3.7, and all such specifications were used accordingly except for the derivation of the floor response spectra. A new artificial time history with different frequency intervals from that specified in the FSAR was developed, which better characterizes the motion described by the ground response spectra. The new frequency intervals selected for the ground response spectra are in accordance with current practices as set forth in Regulatory Guide 1.122. A reassuring result is that the new floor response spectra enclose the one used for the originial seismic design of the Building Complex.

2. Determining Structural Adequacy of the Modified Building Complex

The modified Building Complex was modeled and analyzed, with the three dimensional finite element STARDYNE computer program used for evaluation of the current unmodified Building Complex for interim operation (Partial Initial Decision, 8 NRC 717, at pp. 730-33). This model generates loads, displacements and floor response spectra using the specified seismic input discussed above (Licensee Exh. 28, at p. 36).

The determination of the structural strengths (capacities) of the composite walls unique to the Control Building was derived from test results, with proper application to the individual wall panels in the modified Building Complex provided as an alternative in the UBC. The various potential effects on the collection of wall panels of having the steel frame embedded in the composite walls were also assessed and accounted for in the analytical model. Similarly, the added walls and steel plates were analyzed to assure that the appropriate amounts of shear wall capacities would be realized.

a. The STARDYNE Analytical Model

The analytical model was based on actual knowledge of the distribution of mass within the Building Complex, and the requirements of FSAR 3.7 with respect to lumping masses were complied with (licensee Exh. 28, at pp. 37, 40; Staff Exh. 13A, at p. 12, 3.2.1.2.2). The stiffness of the structural elements in the model was based on material properties of those elements (Licensee Exh. 24, App. B, at B-5 to B-5-c).

The analytical model assumes linear elastic behavior and does not directly model potential nonlinear behavior. Nonlinear behavior, in turn, could result in a reduction of stiffness of the structural elements, a change in its natural frequency, and a potential for change in the seismic loads imposed on the structure as a whole (Licensee Exh. 28, at p. 22; Licensee Exh. 29A, pp. 13-14). A reduction in stiffness will also result in an increase in displacement. The change in building frequency affects floor response spectra and may therefore affect seismic qualifications of equipment, components and piping (licensee Exh. 28, pp. 29-30).

The potential nonlinear behavior was evaluated using the STARDYNE analytical model through additional iterative analyses and postprocessing of the results predicted by the linear elastic model (Licensee Exh. 28, at p. 39; Tr. 4422-23(Bresler)). Thus, the effects of nonlinearities and stiffness degradation were accounted for with appropriate broadening of the floor response spectra (Licensee Exh. 28, at pp. 38-39, 72; Tr. 4385-86 (White)). Included in the analysis were the effects of cyclic loading from earthquakes and resulting cyclic degradation previously verified in the wall test program (Staff Exh. 13A, at pp. 15-16, 3.2.1.2.18). The resulting seismic analysis was performed in accordance with the applicable FSAR criteria on seismic system analysis (Staff Exh. 13A, at pp. 10-15).

b. Sources of Nonlinearity Accounted For

The sources of nonlinear behavior considered by the Licensee included cracking that develops in the concrete of the wall panels (Licensee Exh. 28, at pp. 33-34) and potential lack of connectivity between wall panels which are partially separated by embedded steel columns (Licensee Exh. 28, at p. 34).

The nonlinear behavior of the cracking in the concrete wall panel was accounted for through the use of stiffness reduction factors derived from the results of the Licensee's test program (Licensee Exh. 28, at pp. 35, 38, 40 and 44; Licensee Exh. 24, App. B, at B-5-c, B-5-d; Staff Exh. 13A, at p. 62, 5.1). Because the stiffness reduction is a function of shear and normal stresses, iterative STARDYNE analyses were performed to evaluate the appropriate reduced stiffness properties (Staff Exh. 13A, at p. 63, 5.1.1; Licensee Exh. 28, at pp. 38, 44).

The potential lack of connectivity between wall panels resulted in further investigation of three related variables - the amount of vertical reinforcement from the beam-column connections of the steel framing system used in determining stiffness in the model, the normal stress parameter in determining stiffness, and the overall bending parallel to the

component of the earthquake being considered tending to change stiffnesses at each end of the wall.

The Licensee initially used the embedded steel frame as vertical reinforcement in the analytical model (Licensee Exh. 28, at pp. 40-41). To remove the concern of the effect of this potential nonlinearity, the Licensee submitted an evaluation indicating the impact of neglecting the contribution of the beam-column connections to stiffness with appropriate consideration for the result (Staff Exh. 13A, at pp. 63-64, 5.1.1.1; Licensee Exh. 25U; Licensee Exh. 28, at pp. 67-69; Licensee Exh. 33).

The Licensee concluded that the normal stress parameter contributing to wall stiffness consisted of the dead load of the portions of the wall above the elevation under consideration (Licensee Exh. 28, at pp. 41-42). The potential effects for reducing this dead load considered were the effects of creep and shrinkage, stiffening of beams due to encasement in concrete and the effect of changes in mean wall temperatures for exterior walls. The potential effect for increasing the dead load considered was the vertical growth in the wall panels in an earthquake due to the development of flexural cracking. The vertical growth was found to more than compensate for the potential reduction factors even when panels were subjected to stress cycles (Licensee Exh. 25Q, Attch. 4; Licensee Exh. 25U; Licensee Exh. 28, at pp. 43, 70; Licensee Exh. 32; Licensee Exh. 33).

Seismic loads create a nonlinear "gross bending effect" which tends to increase compressive load on one end of a wall which is parallel to the component of the earthquake and to decrease the available normal stress on the other end of that wall. This, in turn, results in an increase and decrease in wall stiffness in the local wall areas (Licensee Exh. 28, at p. 43; Licensee Exh. 29A, pp. 13-15; Staff Exh. 13A, at pp. 66, 68, 5.1.1.3). Although the STARDYNE analysis did not account for this gross bending behavior, evaluations by the Licensee assured that overall stiffness would not change substantially (Licensee Exh. 28, at p. 43; Licensee Exh. 29A, pp. 13-15; Licensee Exh. 25Q, Attch. 1, 2 and 9; Licensee Exh. 32; Staff Exh. 17A, at pp. 29-30).

c. Load Determinations

The STARDYNE linear elastic analysis predicted the magnitude of the seismic loads to be resisted by the modified Building Complex and predicted the distribution of such loads among the various structural elements of the modified Building Complex (Licensee Exh. 24, at pp. 3-11, 3.3.1). Postprocessing of results, iterative calculational cycles, and supplemental analyses performed, as described above, have accounted for the effects on predicted loads of the influence of stiffness reduction.

The relative load distributions among the major shear walls will not be changed by the stiffness reduction from dead load reduction and neglecting the beam-column connections (Licensee Exh. 28, at pp. 31, 45). Reductions in stiffness due to gross bending effect will be offset by an associated change in shear capacity to satisfactorily account for potential shifting of load from panels on the tension side of a wall to panels on the compression side (Licensee Exh. 25Q, Attch. 1; Licensee Exh. 28, p. 70).

An overall reduction in the stiffness of the modified Building Complex due to potential nonlinear behavior would not result in a significant increase in the total inertia forces to be resisted by the structure, since the natural frequency of the modified complex approximates the frequency which corresponds to the peak of the ground response spectra (Licensee Exh. 28, at pp. 30, 38-39, 45-46; Tr. 4424-25 (Holley)).

d. Capacities Determination

The composite wall capacities were determined by the Licensee by use of testing as provided in UBC 106 and 107 (Licensee Exh. 28, at p. 48; Licensee Exh. 29A, at pp. 5-6; Licensee Exh. 30; Staff Exh. 17A, at pp. 41, 42; Tr. 4420 (Bresler)). The Licensee derived capacity criteria from the results of a test program using 23 test specimens which simulated the parameters of the existing walls of the Building Complex (Licensee Exh. 24, App. A., at A-I to A-5). The materials of construction, the aspect ratio and the thickness of test specimens were similar to those of the actual walls in the Building Complex (Licensee Exh. 30; Staff Exh. 17A, at p. 45).

The test program was adequate to provide valid information on the behavior of composite walls and allow the derivation and verification of capacity criteria (Licensee Exh. 28, pp. 25-26; Tr. 4468 (Laursen); Licensee Exh. 29A, at p. 8; Tr. 4431, 4444 (Bresler); Tr. 4431-32 (Holley)).

The behavioral characteristics of the test specimens were used to develop a theoretical double curvature shear capacity of individual wall panels as a function of the percentage of vertical reinforcing steel and the vertical or dead load acting on the wall. Capacities derived by application of this equation ignored the bond between the steel columns and the composite walls (Licensee Exh. 28, at p. 49). This reflects at least the same level of conservatism as code Equations (Tr. 4431 (Bresler)).

To arrive at capacity values, the Licensee calculated the double curvature capacities of the individual wall panels for a given wall using the theoretical flexural equation. Each individual wall panel's diagonal tension capacity was also computed based on the lower bound diagonal tension capacities derived from the test results. The lower of the panel's double curvature and diagonal tension capacities multiplied by an appropriate

capacity reduction factor, was then considered to be the ultimate seismic capacity of the panel. The ultimate seismic capacity of an entire wall was then obtained by summation of the capacities of individual panels (Licensee Exh. 24, at pp. 3-18-b to c, 3.9.2.2, Table 3.5-1 and 2, Figs. 3.5-6 to 11; Oregon Exh. 2, at p. 7; Tr. 4445 (Holley), 4445-56 (Bresler), 4468 (Laursen)).

After later evaluations were requested by the Staff, further capacity calculations were made such that the capacity projected for a given wall be selected as the lowest capacity for any of four potential modes including single curvature flexural and sliding failure in addition to the double curvature flexural and diagonal tension failure capacities. Potential dead load reductions were also considered in the determination of the walls sliding and the single and double curvature capacities (Staff Exh. 13A, pp. 71-74, 5.2.2.1). Licensee satisfied the Staff's concerns in these areas (Licensee Exh. 25U, Attch. 1; Licensee Exh. 28, at p. 53, 55, 77, 79; Licensee Exh. 30; Licensee Exh. 32; Licensee Exh. 33; Staff Exh. 17A, at p. 31).

In all determinations of capacities, the design strength of the reinforcing steel and the design strength of concrete were used even though tests have shown that actual strengths are larger than the design strengths (Licensee Exh. 24, at pp. 3-18-e, 3-23, 3-27, 3.4.2.2, 3.6.1.2, 3.6.2; Licensee Exh. 28, at p. 46).

The transfer of shear forces from existing structural elements to the new ones will utilize a post tensioned bolt system to clamp the new and the old together and roughening of the adjacent surfaces to assure adequate functional resistance. The resulting combination should assure the full capacities of the new walls (Licensee Exh. 28, at p. 47; Licensee Exh. 33; Staff Exh. 13A, pp. 69-70, 5.2.1; Tr. 4365 (White), 4519-21 (Broehl)).

e. Comparison of Capacities to Loads

The capacity of the modified Building Complex to resist both the SSE and the OBE must be established. Since the OBE governs the design of the Building Complex and satisfaction of the OBE design criteria would also constitute satisfaction of the SSE design criteria, the controlling load combination and acceptance criterion is that of the OBE (Licensee Exh. 24, at pp. 2-1, 3-20, 2.1, 3.5; Staff Exh. 13A, at pp. 17-18, 3.2.2.1.3). This criterion requires that there exist a margin of 40% between the calculated loads and the corresponding ultimate capacities of the modified Building Complex (Licensee Exh. 28, at p. 58; Tr. 4423-24 (Holley)).

Capacity to force comparisons show that all but two of the minor shear walls in the modified Building Complex had a margin of at least 40%

between ultimate capacity and unfactored OBE loads (Licensee Exh. 24, at pp. 3-21). Each of these two minor shear walls contributes a very small percentage of the total shear capacity of the Building Complex. Loads predicted but not carried by these two walls were readily shown to redistribute to the adjacent major shear walls (Licensee Exh. 28, at p. 39; Licensee Exh. 30). Moreover, now substantial deterioration of these walls would be expected from an SSE (Oregon Exh. 2, at pp. 7-8; Licensee Exh. 28, p. 25; Licensee Exh. 30; Tr. 4362-53 (White)), and no equipment would be impacted by any wall degradation that might potentially take place (Staff Exh. 13A, at p. 83, 5.12).

The Staff requested further evaluations of seismic capability assuming further conservatisms of wall capability, i.e., single curvature and sliding capacity failures, neglecting contributions of beam-column connections in determination of stiffness, the gross bending effect on stiffness and load distributions, and reduced coefficient of friction for the bolted connectons for the R-line and N'-line walls. Since most of these might have their impacts on the seismic capabilities of the added shear walls on N-line, N'-line and R-line, the added conservative analysis does reassure that the intended capability does exist (Tr. 3532, 4369-70 (Chang-Lo); Licensee Exh. 28, at pp. 59-60; Licensee Exh. 25U, Attch. 1, 4; Licensee Exh. 25Q, Attch. 1; Licensee Exh. 32; Licensee Exh. 33; Staff Exh. 17A, at pp. 27, 38-40).

The evidence shows that the potential effects of these uncertainties in behavior and in the application of test results to predict behavior and capacities have been properly accounted for by these additional analyses and evaluations performed by the Licensee (Staff Exh. 17A, at pp. 35, 39-40). The results show that capacity to force ratios for some individual wall panels for the unfactored OBE may fall below 1.4 for the worst possible combinations of dead load reduction, gross bending and single and double curvature behavior. However, redistribution of forces in the wall will occur so that the capacity to force ratio for the entire wall will not be less than 1.4. Thus the walls will maintain substantial margins in capacity even when uncertainties in structural behavior and application of test results are accounted for by analyzing the worst possible combinations of loading and structural behavior (Staff Exh. 17A, at pp. 39-40).

f. Building Displacements

Consideration of building displacements is necessary to verify that (1) adequate clearance exists between adjacent structures so that any displacements induced by an earthquake (interstructure displacements) will not result in contact of, and physical damage to the adjacent structures and (2) neither relative displacements between stories of a building (interstory

displacement) nor interstructure displacements will adversely affect equipment that is attached to more than one story or which runs between buildings.

The displacements for the modified Building Complex were determined as part of the output of the STARDYNE analysis used to determine structural adequacy (Licensee Exh. 28, at p. 60). The STARDYNE analysis provided elastically calculated displacements which accounted for the nonlinearities due to the material characteristics of the walls. Supplemental calculations were performed to account for the additional nonlinearities considered under structural adequacy evaluations discussed previously. These additional nonlinearities would result in calculated displacements increased by a factor of 2.1 over that calculated initially for the modified Building Complex (Licensee Exh. 28, at p. 80; Licensee Exh. 25U; Staff Exh. 17A, at p. 32).

The structures adjacent, but not connected to, the Building Complex are the Containment and the Turbine Buildings. The difference between the available clearance and the sum of calculated displacements multiplied by 2.1 for the Building complex-Containment Building interface is quite large and do not present any potential for impacts during an SSE (Licensee Exh. 25H).

The available clearance at the interface between the Control and Turbine Buildings in the modified Building Complex will be reduced at elevations 69 feet and 93 feet by the addition of the steel plate to the west wall of the Control Building (Licensee Exh. 25E). By removal of a part of a concrete floor slab at elevation 69 feet and of part of the flange of a steel girder at elevation 93 feet in the Turbine Building, the resulting clearances between the Buildings at these levels are respectively at least 2.5 inches and 2.0 inches (Staff Exh. 17A, at p. 52; Licensee Exh. 28, pp. 61-63). Even after including the added factor of 2.1, there is ample clearance since maximum reduction in gap is 0.29 inches and 1.10 inches, respectively, at the 69 feet and 93 feet levels between the Control and Turbine Buildings (Licensee Exh. 28, at pp. 61-63).

g. Influence of the Wall Problem on Structural Integrity

Evidence concerning the wall problem included results of the short term test program. Collar-joint shear stresses for standard weight double-block walls were within the range assumed by Licensee, but for heavy-weight block walls they were less than expected though still greater than the postulated allowable value. Licensees' witnesses explained that there are no heavyweight double-block walls in the Control Building that are relied on in the STARDYNE model and that the heavyweight block walls in the

Building Complex as a whole contribute less than 2.5% to the total shear resistance of the Building Complex (Tr. 4893-94, 4729). This effect on structural integrity is therefore considered negligible, but there remains the matter of adequately supported safety-related piping, discussed *post.*

h. Conclusions of Structural Adequacy

The Board concludes that a thorough and extensive analysis has been made of the modified Building Complex and the effects undergone in the event of an SSE or OBE. Specifically, the Board finds:

(1) That an appropriate seismic input criterion is used in the analytical model;
(2) that the STARDYNE analytical model, augmented to include the effects of nonlinearities and repetitive earthquake events was an appropriate and acceptable model;
(3) That appropriate seismic analyses were performed resulting in a conservative assessment of the behavior of the modified complex subjected to OBE and SSE events;
(4) That the seismic loads for the modified Building Complex have been adequately determined taking into consideration the appropriate potential nonlinear behaviors;
(5) That the capacities of the walls of the modified Building Complex were properly determined through appropriately derived characteristics based on test results and through proper consideration of potential behavior unique to the wall construction;
(6) That the assessment of the capacity to force ratios for individual walls and wall panels was appropriate to meet the criteria previously stated (II-D, *supra*);
(7) that the relative displacements between the Building Complex and adjacent structures have been properly assessed and that the available clearances are sufficient to preclude building contact in the event of an OBE or SSE; and
(8) That the effect of the "Wall Problem" on structural integrity of the Building Complex is negligible.

3. Seismic Qualifications of Equipment, Components and Piping

To satisfy the criteria for determining the adequacy of the modifications, the safety-related[12] equipment, components and piping in the modified Building Complex must be seismically qualified to withstand the OBE and SSE and continue to operate satisfactorily. The method of seismic qualification to the original ground level response spectra at elevation 45 feet which was specified in FSAR 3.7, 3.9 and 3.10 was also used to determine the seismic qualifications of equipment, components and piping for the modified Building Complex (Licensee Exh. 24, App. B, at B-1, 1.2; Licensee Exh. 28, at p. 64).

a. Floor Response Spectra

The SSE floor response spectra for these floors in the as-built Building Complex above ground level were redeveloped during Phase I of these proceedings to account for changes in the Building Complex response due to the design deficiencies. They must again be redeveloped due to the proposed modifications. Although the OBE response spectra were not addressed in Phase I of these proceedings, they must now be developed to account for changes in Building Complex response due to both the design deficiences and the proposed modifications.

The new OBE and SSE floor response spectra have been generated using the artificial time history and frequency intervals previously described (II-D-1-b, *supra*) and the STARDYNE model (Licensee Exh. 24, App. B., at B-2, B-3, 2.2.1.1, 2.2.1.2). The resulting response spectra curves were then broadened to account for variations in mass and for variations in stiffness due to variations in the modulus of elasticity and in the stiffness reduction factors due to dead load, shear stress and experimental uncertainties. The response spectra curves were also broadened on the low frequency side of the response spectra to account for potential reduction in stiffness due to the postulated occurrence of multiple earthquakes, the potential dead load reductions, exclusions of the beam-column connections from vertical reinforcement ratios, the potential influence of gross bending and potential vertical slip along the embedded columns (Licensee Exh. 24, App. B, at B-5-e, B-5-f, 2.2.1.4; Staff Exh. 17A, at p. 34). These effects accumulatively result in a total broadening of 41% on the low side and 10% on the high side

[12]"Safety-related" refers to equipment, components and piping to be seismically qualified as identified in 10 CFR Part 50, Appendix B and further identified in Regulatory Guide 1.26, Revision 3 and 1.29, Revision 3 (Licensee Exh. 28, at p. 64; Licensee Exh. 24, at B-1).

of the peaks of the response spectra associated with the structural frequencies (Licensee Exh. 25U; Licensee Exh. 28, at p. 81).

b. Qualifications of Safety-Related Equipment, Components and Piping

Licensee has made a commitment to evaluate the seismic qualification of all safety-related equipment, components and piping in the Building Complex using the revised response spectra developed above. Modifications will be implemented to assure qualifications based on these evaluations (Licensee Exh. 24, at pp. 4-4, 4-8, 5-1, 4.2.1, 4.2.5, 5.2; Licensee Exh. 24, App. B, 1, 3-6; Licensee Exh. 25G; Licensee Exh. 27, at p. 13; Licensee Exh. 28, pp. 64-65a).

c. Influence of the Wall Problem on Equipment Qualification

Much of the safety-related equipment that had been supported by double-block walls, generally piping required for shutdown in the event of an earthquake, has either been through-bolted or anchored elsewhere (Tr. 4698). But the disputed value of acceptable collar-joint shear strength of the heavyweight block walls casts uncertainty on seismic qualification of equipment that is still supported there. Consequently, Licensee agreed to resolve remaining misgivings of the Staff before operation is resumed after the current shutdown for refueling, and proposed modifications to accomplish this (Tr. 4695-97, 4699, 4742-44). Staff's witnesses testified that the parties were converging on an acceptable analytic procedure, that the Licensee's proposed method of strengthening double-block walls seemed appropriate, and that long term tests related to collar-joint shear stress may be unnecessary (Tr. 4546-47, 4792-98). Licensee has agreed to confirmatory testing of support anchors in double-block walls, although loads have been reduced (Tr. 4701-02, 4743-45).

In view of the Licensee's agreement to resolve remaining double-block wall issues before resuming operation, and the negligible influence of these walls on structural adequacy, the Board is persuaded that the wall problem has been explored adequately.

d. Conclusions on Seismic Qualifications of Safety-Related Equipment

The Board finds that the implementation of modifications determined by application of the revised response spectra to all safety-related equipment, components and piping in the Building Complex will bring compliance with FSAR requirements and Technical Specifications 5.7.1.

4. Conclusions on Meeting the Criteria for Structural Adequacy of the Modified Building Complex

The evidence shows that the evaluations of the proposed modifications of the Building Complex and the safety-related equipment contained therein have been made appropriately to assure, upon completion of implementation of the resulting modification, that the criteria established previously (II-D-1, *supra*) will be satisfied.

This conclusion was supported by three technical experts testifying at the hearing who did not participate in the detailed design of the proposed modifications. Professors Myle J. Holley and Boris Bresler found the analysis and criteria for the structural design and evaluation to be both reasonable and appropriate, and that the criteria had been applied properly to the walls of the Building Complex. They concluded that the modification design, in their judgment, would bring the Control Building into substantial compliance with the originally intended design (Licensee Exh. 29A, p. 17; Tr. 4422-23, 4445-46 (Bresler and Holley)). Professor Harold Laursen concluded that the proposed modifications would restore the major shear walls to necessary margins of capacity (Oregon Exh. 2, at pp. 7-9; Tr. 4469-70 (Laursen)).

In addition, the Staff testified that the Licensee has properly accounted for the limitations in STARDYNE and for uncertainties in structural behavior and in applying the test program results with the results that the proposed modifications will substantially restore the seismic margins and bring the Control Building into substantial compliance with the requirements of the Trojan License (Staff Exh. 17A, at pp. 39, 54-55).

Based on the uncontroverted evidence in this hearing, the Board finds that the proposed modifications satisfy the required criteria stated earlier and that they are adequate from a safety standpoint. Upon satisfying that implementation of the modifications can be accomplished in a safe manner, the proposed modifications to the Control Building should be implemented.

E. MODIFICATION WORK AND EFFECTS ON SAFETY OF PLANT OPERATION

With the exception of installation of massive plate 8, the plant is expected to be in operation during the Control Building modification work. The possible influence on safe operation was examined in detail and protective measures were devised where appropriate. Objectives were to protect safety-related equipment from mechanical damage and deleterious effects of dust and vibration, to prevent interference with operation by noise or Control Room traffic, and to maintain seismic qualification of

equipment and effective emergency procedures including access for fire protection and for safe shutdown in the event of an earthquake.

Major activities, placement of new concrete walls, installation of steel plates on the west wall of the Control Building, and exposure and joining of steel columns and beams, are described below and protective measures are specified.

1. Placement of Concrete Walls

The concrete walls to close the former railroad bay of the Control Building and to provide internal structure are poured as an early stage of modification. Footings for these walls must be placed around piping and a cable duct bank that are below grade. For protection, the duct will be covered with compressible backfill and the pipe will be enclosed in sleeves (Licensee Exh. 27, at pp. 18-19; Tr. 3772-76). Forms for the concrete imply the temporary presence of combustible material that will be taken into consideration for fire protection. The forms for the east wall will frame battery room ducts such that ventilation will be maintained (Licensee Exh. 27, at p. 40). Otherwise, no safety-related equipment will be disturbed.

Steel plates 1 to 3, positioned as discusssed below, will constitute part of the form for the west wall (Licensee Exh. 27, at pp. 47-48). The new walls will be joined to the existing structure by means of bolts and grouted rebar (Licensee Exh. 27, at pp. 8-13).

2. Installation of Steel Plates

Preliminaries to plate installation include the following: Concrete floor slabs and steel girder flanges of the Turbine Building will be trimmed to provide space for the plates and to maintain clearance to the Control Building with the plates in place (Tr. 3758, 4606-07). Holes for bolts to secure the plates, drilled through the west wall of the Control Building, will be positioned to avoid reinforcing steel. Finally, the hole pattern will be transferred to the plates and matching bolt holes drilled in the shop.

Eight three-inch thick steel plates are sequentially brought into place through the Turbine Building, raised to the turbine floor (El. 94 feet), jockeyed into position, and lowered into place against the west wall of the Control Building. They are secured by bolts through the wall (into the wall for plate 7) and joined by welding to form a single reinforcing plate (Licensee Exh. 27; Tr. 3962-68). Equipment to be protected during this process consists of four groups of cable trays that pass underneath from the Control Building to the Turbine Building, and the duct bank and piping below ground level. For the first seven plates, ranging in weight from 2,700

to 24,000 pounds, margins of safety on handling equipment will be at least a factor of five, and the effect of accidental dropping along the west wall will be limited by energy-absorbing material. With an additional license requirement for installation of plate 7 (Staff Exh. 13A, at p. 90), the Staff agrees that these plates may be installed while the plant is operating (Tr. 4666-67).

Seismic effects added to a drop of plate 8, however, introduce uncertainty in safe plant shutdown if required during handling of that 47,000-pound plate. For this reason, the plant will be shut down while plate 8 is being moved into position and secured to the west wall (Staff Exh. 15A, at pp. 19-24). Special protection includes an A-frame support to prevent the plate from falling if the crane support should fail while the plate is being moved into position (Tr. 3976), cribbing on the floor, cribbing to prevent an accidental drop of more than two inches while the plate is lowered into position, and energy-absorbing material to mitigate the effect of a two-inch drop (Licensee Exh. 27, at p. 54, Tr. 3922-23).

3. Welding Beam-Column Connections and Rebar

The six "structural improvements," welding beam-column connections in two locations and Cadwelding rebar in four locations, require exposure of the steel by removal of concrete and block. To the extent practicable, this will be done outside the Control Building or in the former railroad bay. Nevertheless, there are locations where cables in trays may be subject to damage from dislodged fragments or dropped tools unless protected (Licensee Exh. 27, at pp. 24-27).

Because simultaneous exposure in all six locations could reduce seismic resistance unacceptably, the Licensee proposes two alternative work sequences in which structural capacity is restored in each of five phases before proceeding to the next phase (Tr. 3708-12). Evidence demonstrates that either sequence will maintain adequate resistance to the 0.25g SSE (Tr. 3906, 4463-65, 4620, 4658).

4. Protection of Equipment During Modification

Safety-related equipment within modification work areas consists primarily of cables in trays. During trimming of Turbine Building floors and steel flanges, drilling holes for bolts that support steel plates, installation of bolts and washers, and exposing steel for welding, nearby cables will be protected from dropped fragments, components or tools. This will be accomplished by steel covers for cable trays and by scaffolds under massive pieces such as steel washers while being positioned (Licensee Exh.

27, at pp. 24-30). Temporary openings through which tornado-driven missiles might enter will be closed by shields satisfying FSAR criteria (Licensee Exh. 27, at pp. 27-28; Staff Exh. 15A, at pp. 31-32).

Equipment to be protected from dust generation during the above operations extends to electrical relays in the Control Room and equipment in the Switchgear Room. Methods of protection will include water sprays on drills and collectors, temporary enclosures about work areas, and, if necessary, fans and ducts (Licensee Exh. 27, at p. 31 and 38; Tr. 3786-88).

Because of seismic qualification, vibration is not expected to influence safety-related equipment.

5. Maintenance of Fire Protection During Modification

The modification work can complicate fire protection in the following ways: There will be additional combustible material such as forms for new concrete walls, temporary enclosures for dust control, and scaffolds and wooden cribbing to limit accidental dropping of steel plates and washers. Splatter from welding or slag from flame cutting could ignite combustibles. Some fire barriers will be penetrated by bolt holes or openings to expose steel. Finally, access paths for fire-fighting could be blocked by the extra workers and equipment that will be required.

Whenever wood is in the neighborhood of safety-related equipment, fire extinguishers will be nearby and the area will be inspected at least hourly by a fire patrol (Licensee Exh. 27, at pp. 35-36; Staff Exh. 13A, at pp. 26-27; Staff Exh. 14, at pp. 22-23). Where possible, wood will be removed beforehand from any area where there is to be welding or cutting (Tr. 3932).

A special permit is required for welding or flame cutting. This permit provides for a fire watch near the work that must remain at least 30 minutes after completion. It also requires protection of equipment and cables, which will be accomplished by either fireproof blankets or protective barriers between the work and equipment (Licensee Exh. 27, at pp. 31-32; Tr. 3753, 3783-84 and 3889-90; Staff Exh. 13A, at pp. 24-25; Staff Exh. 14, at pp. 18-21).

Where fire barriers are breached by bolt holes, as in east and west walls of the Control Building, the holes will be plugged temporarily until bolts are installed. (This will also maintain Control Room ventilation.) Where there are larger openings, as for exposure of columns for welding, there will be either a continuous fire watch, or a temporary fire barrier, fire detector, and a fire watch patrol (Licensee Exh. 27, at pp. 32-33; Staff Exh. 13A, at pp. 59-60).

There will not be a large number of workers who might interfere with access for fire or other emergency, sixteen for installation of plate 8 and no more than eight for other tasks (Licensee Exh. 27, at p. 78). Training of workers and supervisors will provide for evacuation to the Visitors Information Center in the event of an emergency (Licensee Exh. 27, at pp. 76-77). Two access routes are available to any area with equipment for emergency operation and one always will be unobstructed by modification work (Licensee Exh. 27, at p. 75; Staff Exh. 13A, at pp. 28-29; Staff Exh. 14, at pp. 23-7).

The Staff has determined, and the Board agrees, that Licensee has appropriate adminstrative means to satisfy Technical Specifications, primarily fire protection and Control Room ventilation requirements, during modification (Staff Exh. 13A, at p. 60).

6. Prevention of Interference With Operator Actions By Modification Work

In addition to potential interference with emergency action, as discussed above, operators could be disturbed by workers in the Control Room, or noise or dust from modification work.

There will be some drilling and bolting through Control Room walls, but at a distance from controls and instrumentation. Although drilling will be from outside the walls, workers who will collect water for dust control and debris will be on the inside (Licensee Exh. 27, at pp. 31 and 38). The shift supervisor will prevent interference with operation by workers or excessive noise, and the NRC's Resident Inspector also may halt work, if necessary, until tools or methods are changed to reduce noise (Licensee Exh. 27, at p. 81; Staff Exh. 13A, at pp. 49-50; Staff Exh. 14, at pp. 36-38).

7. Seismic Qualification During Modification

The only modification work (including bolt hole effect) that could reduce seismic resistance of the Building Complex significantly would be the removal of concrete for exposing steel to be welded (Licensee Exh. 27, at pp. 60-72). With the exception of a column at the new interior wall, these modifications will be performed after the Control Building is strengthened by new walls and steel plate (Licensee Exh. 24, at pp. 4-6-a). Either alternative sequence proposed by the Licensee for steel exposure and replacement of concrete will maintain seismic capability of the Building Complex (Licensee Exh. 27, at pp. 69-71; Staff Exh. 15A, at pp. 27-29;

Oregon Exh. 2, at pp. 9-10; Oregon Exh. 2A; Tr. 3708-10, 3903-06, 4341, 4461-66, 4619-21).

Temporary effects of modification work on the seismic qualification of equipment are forestalled by the described measures to protect equipment and by plant shutdown during installation of plate 8 because of uncertain seismic effects (Staff Exh. 15A, at pp. 19-24; Tr. 4019, 4113). At Intervenors' suggestion, both trains of equipment for maintaining cold shutdown will be operable during installation of plate 8 (Tr. 4012, 4305-07).

F. ADDITIONAL CHANGES RESULTING FROM THE MODIFICATIONS

In addition to the modifications discussed above, there will be other changes in existing features of the Building Complex: the changes brought about by closing off the railroad track through the Control Building and the reduction in size of the equipment hatch into the Electrical Auxiliaries Room of the Control Building at elevation 65 feet.

1. Relocation of Railroad Track From Control Building

Currently, the air intake path to the Emergency Diesel Generators relies on an opening to the outside through the railroad bay in the Control Building. Before the Control Building railroad bay is sealed off at column line R, an alternate air intake system will be provided in the north wall of the Turbine Building railroad bay. The design of the alternate air intake was found to be adequate (Staff Exh. 13A, at pp. 40-41; Staff Exh. 14, at p. 58, Licensee Exh. 24, at pp. 5-5; Licensee Exh. 25I, Fig. 15-1).

A new railroad spur to the Fuel Building is required as an alternate to the path being closed through the Control Building. The railroad spur was initially designed through the Control Building as a matter of convenience and efficiency to serve both the Turbine Building and the Fuel Building (Staff Exh. 16, at p. 5). Since there is no need for loading or unloading railroad cars in the Control Building bay, there is no safety-related impact of removing it and providing a spur to the Fuel Building (Staff Exh. 16, at p. 5).

Since the railroad track in the Turbine Building will be terminated at the face of the new shear wall at the west face of the Control Building, a bumping post will be installed that is only designed to prevent a typical train loading from impacting the west wall when the train is traveling at very low speeds (Staff Exh. 16, at p. 6; Staff Exh. 13A, at pp. 77-78; Staff Exh. 17A, at p. 50). However, the Licensee has in place administrative procedures to control the movement of trains on site (Staff Exh. 16, at p. 6). Also, the accidental approach of a train to the railroad bay from the main

track is prevented by two derailers located both outside and inside the security fence and an uphill grade of the track outside the security fence (Staff Exh. 16, at pp. 6-7).

The Board finds that the proposed modifications to the railroad spur and the proposed administrative controls on operation of trains by Licensee personnel when inside the security area are acceptable.

2. Reduction in Size of Existing Equipment Hatch

The existing equipment hatch into the Electrical Auxiliaries Room of the Control Building at elevation 65 feet on the east wall approximately midway between column lines 41 and 46 will be reduced in size from 8 feet high by 7 feet wide to 4 feet high by 4 feet wide. The large hatch currently allows larger equipment to be brought into and removed from this elevation without need for disassembly. After the reduction in size, disassembly of some equipment will be required in order to fit the smaller equipment hatch, or use of an alternative path such as the Control Building elevator or Auxiliary Building access ways (Staff Exh. 16, at pp. 2-3). No safety significance for this additional disassembly has been identified.

The Board finds that neither the performance of the modification work on the equipment hatch nor the reduction in size of the hatch has safety significance and this modification is acceptable.

G. RESOLUTION OF INTERVENORS' CONTENTIONS

The Contentions in issue in this proceeding are CFSP Contentions 12, 13, 15, 16, 17, 20 and 22.[13] Our findings of fact above have encompassed all substantive matters raised by these contentions and, based on our review of the entire record, we find that the original concerns of the Intervenors that brought the contentions into issue have now been addressed in a satisfactory manner, leaving all of the contentions upon completion of the evidentiary hearing without merit. All of the contentions are covered in our findings under II-E, *supra,* entitled Modification Work and Effects on Safety of Plant Operation.

H. LENGTH OF INTERIM OPERATION AND TIME FOR COMPLETION OF MODIFICATION

Based on the evidentiary record in the Phase I hearings on interim operation, the Board found that the existing Building Complex had adequate seismic capacity to safely withstand a 0.25g SSE (8 NRC 735). In

[13]See I-B, *supra.*

the event of one or more seismic events of 0.08g or larger, the Trojan Nuclear Plant must be brought to a cold shutdown condition and be inspected to determine the effects, if any, of the earthquake. Operation cannot resume under these circumstances without prior NRC approval (8 NRC 748). Nevertheless, since there may be some effect in the event of seismic events above 0.08g, because there may be some time dependence of the seismic capability, and since the May 26, 1978 Order instructed an expeditious implementation of modifications, it seems appropriate to impose a time restriction on completion (Staff Exh. 17A, at pp. 9-11).

The evidence shows that it will take approximately 10 months to complete the modifications as currently proposed. The Staff has reviewed the modification work schedule, has concluded that it is reasonable, and has recommended that a license condition be imposed requiring completion of the proposed modification work within a period of 12 months from the date of authorization (subject to extension for circumstances beyond Licensee's control) (Licensee Exh. 27, at pp. 86-87; Staff Exh. 13A, at p. 88; Tr. 4018-19 (Trammell)). The Board finds that such a condition provides appropriate assurance that the modification program will be completed expeditiously (Licensee Exh. 24, Fig. 4-1; Staff Exh. 13A, at p. 88) and that the design intended margins will be restored in a timely fashion.

I. ENVIRONMENTAL CONSIDERATIONS

While no issue was raised in this proceeding as to the environmental impacts of the proposed modifications and the attendant licensing action authorizing them, an environmental analysis was performed by the Staff. That analysis demonstrates that the proposed modifications will not result in significant environmental impacts and that the impacts, if any, will be negligible (Staff Exh. 13A, at pp.92-94, 8.0). Based on the analysis, the Staff concluded that the proposed modifications do not require the preparation of an Environmental Impact Statement or Environmental Impact Appraisal and Negative Declaration pursuant to 10 CFR Part 51.

The evidence presented in this regard was uncontroverted. We find that the Staff's conclusions as to the environmental impacts of the proposed modifications are adequately supported by the environmental analysis presented, and that those conclusions are justified.

J. POSTHEARING AFFIDAVITS

1. An Additional As-Built Wall Discrepancy

On May 19, 1980, after the record was closed in this Hearing, the Licensee informed Mr. R. H. Engelken, Director, U. S. Nuclear Regulatory

Commission, Region V, about conditions found in the south wall of the Auxiliary Building adjacent to column line 55 between column lines F and N from Elevation 61 feet to Elevation 93 feet which was not connected to the floor slab at Elevation 93 feet as assumed. The wall was assumed to be connected and participate as a minor structural shear-resisting element in the STARDYNE finite element analyses of the Building Complex. The wall also provides partial lateral restraint for cable trays vertically supported from structural steel beneath the Elevation 93 feet floor slab.

The discovery of this condition was reported in greater detail in a "Reportable Occurrence" in Licensee Event Report 80-07 in a letter to Mr. Engelken from Donald J. Broehl of Portland General Electric dated May 30, 1980. Also, in a letter from Licensee to Mr. Robert A. Clark, Chief, Operating Reactors Branch No. 3, Division of Licensing, dated June 4, 1980, justifying change of Trojan Nuclear Plant operation from modes 6 to 5 in preparation for a return to power after refueling, further inspection had identified no additional walls that were not connected at the top, although 11 other walls were identified as not yet meeting the criteria documented in Supplement 3 to LER-79-15.

The Board was concerned about some of the implications of these reports and the conditions described therein, particularly regarding the Auxiliary Building wall which is not adequately connected at its top to interfacing structural elements. In the study of the structural adequacy of the Building Complex and in the modifications proposed to correct these conditions, the Board relied on the analyses using the STARDYNE computer program. In the model, all walls were assumed to be in a state of construction which we now find for this wall did not exist. This concern was reflected in an "Order Requesting Licensee to Supply Information by Affidavit" issued by the Board on June 2, 1980, in which the Board requested the Licensee to supply the following information:

(a) The cause of the occurrence,
(b) When all other walls with similar potential defects will have been examined to determine if there are other such problems,
(c) Report of method and timeliness of corrections to the current identified defects and any others discovered, and
(d) Contribution to structural adequacy of the Building Complex for any other walls found with this deficiency.

The Licensee responded to the order in a letter transmitted to the Board dated June 16, 1980, with affidavits containing the requested information.

In addition to the original discrepancy described above, the field examinations by Licensee identified five walls having nonconformances of

potential safety significance, three in the Fuel Building and two in the Auxiliary Building. Three of the five nonconformances related to incomplete construction, two involving incomplete grouting from the top of the masonry unit to the floor slab and the third an approved Field Change Request that was not implemented. A fourth nonconformance related to an interference between reinforcing dowels from the slab above and a steel beam supporting the floor. The fifth nonconformance was at a nontypical interface on a minor shear wall where the assumed design interface conditions were not implemented.

The Licensee stated that all of the above-described corrective actions (the fifth nonconformance was determined not necessary to be corrected) were to be completed by June 18, 1980, and in any event prior to the resumption of power operations at Trojan Nuclear Plant. Following completion of corrective actions, the only reduction in capacity is claimed to be 1.1% in the North-South direction.

The Board finds an acceptable resolution of the nonconformances discovered in connection with LER-80-07.

2. Anchorage and Support of Electrical Equipment

In another communication dated June 12, 1980, and subsequent to the closing of the evidentiary record in this proceeding, the Staff brought to the Board's attention IE Information Notice 80-21 concerning potential deficiencies in anchorage and support of safety-related electrical equipment at some older plants. Although the Staff indicated that problems addressed by this Information Notice were not directly related to the Control Building design deficiencies or proposed structural modifications, it requested that Licensee provide a written response to the Notice.

The response by the Licensee, in the form of a letter and affidavit dated June 27, 1980, described inspections showing that no significant deficiencies brought out by the Notice exist at the Trojan Plant. Nevertheless, the affidavit promised a further inspection program to confirm the conclusion that all safety-related electrical equipment is properly supported and anchored, and made a commitment to satisfy the Staff in this regard.

The Board concludes that IE Information Notice 80-21 and Licensee's response introduce no new safety consideration appropriate to this proceeding, and that the Staff and the Licensee have concluded arrangements adequate to handle such matters administratively.

III. CONCLUSIONS OF LAW

This proceeding concerns the issue of whether the scope and timeliness of proposed modifications, required to bring the plant into substantial compliance with Operation License No. NPF-1, are adequate from a safety standpoint. We have reviewed all of the evidence submitted by the parties relating to this issue. We have also considered all of the proposed findings of fact and conclusions of law submitted by the parties. Those proposed findings not adopted in this Initial Decision are hereby rejected.

Based upon our consideration and evaluation of the entire record, we conclude that:

1. The proposed modifications of the Building Complex should be permitted in accordance with the amendments to the Operating License set forth in the Order below and subject to the terms and conditions therein;
2. There is reasonable assurance that operation of the plant, including the activities authorized by the operating license, as thus amended, and including the terms and conditions set forth in the Order below, can be conducted without endangering the health and safety of the public;
3. There is reasonable assurance that operation of the plant, including the activities authorized by the operating license, as thus amended, and including the terms and conditions set forth in the Order below, will be conducted in compliance with the Commission's regulations;
4. The issuance of this operating license amendment as set forth in the Order below will not be inimical to the common defense and security or to the health and safety of the public;
5. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
6. The proposed modifications will satisfy the Order of May 26, 1978 by bringing the Control Building into substantial compliance with Technical Specification 5.7.1 of the operating license, and restoring the intended design margins of Technical Specification 5.7.1 such that (a) the Control Building has a capacity to withstand a 0.15g OBE using 2% damping as required by FSAR Table 3.7.1; (b) the Control Building OBE capability of 0.15g and SSE capability of 0.25g are met using a yield strength for reinforcing steel of 40,000 psi; and (c) the masonry portions of the Control Building walls comply with the UBC requirements for reinforced grouted masonry for inplane loading.

IV. ORDER

Wherefore, it is ORDERED, in accordance with the Atomic Energy Act of 1954, as amended, and the regulations of the Nuclear Regulatory Commission, and based on the findings and conclusions set forth above that the Director of Nuclear Reactor Regulation is authorized to make appropriate findings consistent with this Initial Decision in accordance with the Commission's regulations, and to issue the appropriate license amendment to Facility Operating License No. NPF-1 authorizing implementation of modifications to the Control Building of the Trojan Nuclear Plant. This license amendment shall contain the following provisions and conditions:

A. Upon the effective date of this Amendment to Facility Operating License No. NPF-1, said License is modified as follows:

1. The following provision shall be added to Facility Operating License NPF-1: 2.C.11 *Control Building Modifications,* The Licensee is authorized to and shall proceed with modifications to the Control Building in order to restore substantially the originally intended design margins. The modification program shall be accomplished in accordance with PGE-1020, "Report on Design Modifications for the Trojan Control Building," as revised through Revision No. 4, and as supplemented by PGE Exh. 27 (Licensee's Testimony ("Broehl, *et al.* ") on Matters Other Than Structural Adequacy of the Modified Complex, March 17, 1980). Any deviations or changes from the foregoing documents shall be accomplished in accordance with the provisions of 10 CFR part 50.59. The Control Building modification program shall further be subject to the following:

(a) The modification program shall be completed not later than 12 months from the date of this amendment, provided however that such completion date may be extended by the Director of Nuclear Reactor Regulation upon a showing that the completion of the modification program is necessarily delayed by circumstances wholly beyond the control of Licensee. When all modifications have been completed, license condition 2.C. (10), relating to interim operation pending completion of modifications, is cancelled.

(b) For the installation of steel plate No. 8, the plant shall be in the cold shutdown condition (Modes 5 or 6) from the time that the plate is lifted from the transporter at Elevation 45 feet until the plate has been secured with 48 inches of weld to the previously installed plates and attached to the wall with five bolts made snug. During the installation of plate No. 8, both trains of safety-related equipment necessary for maintenance of a cold shutdown condi-

tion shall be operable. Prior to the installation, Diesel Generator A shall be started and proper operability verified.

(c) Solid steel cable tray covers shall be installed over cable trays in work areas where cable damage is possible from accidental dropping of steel plate washers during their installation.

(d) A fire watch patrol shall be established whose sole responsibility shall be to watch for fires at the plant and which shall make at least hourly inspections at all safety-related areas where combustible materials (e.g., wood framing, planking, plastic, etc.) related to the modification work must remain in the work area (not required for areas in which a continuous fire watch is present). Such hourly inspections shall include direct visual observations of all combustible materials added to such safety-related areas.

(e) Scaffolding and timber planking shall be installed against the R line wall in the Cable Spreading Room during the installation of the steel plate washers at each location where a potential plate washer drop onto a cable tray could exceed three feet. The planking shall be placed and constructed to limit the maximum height of a dropped washer to three feet or less.

(f) Any construction work in the diesel generator combustion/ventilation air pathway which could potentially generate dust, dirt or debris shall be temporarily halted when any diesel generator is in operation.

(g) In the event that either the Shift Supervisor or NRC Resident Inspector determines that construction noise is resulting in noise levels in the Control Room of such magnitude as to interfere with normal communications, the construction activity shall be halted until alternate means are devised (e.g., lighter weight tools, other means of concrete/block removal, etc.) to proceed with the work with acceptably reduced Control Room noise level.

(h) In the event that the NRC Resident Inspector determines that the construction activity in the Electrical Auxiliaries Room or Control Room is generating excessive dust, dirt or debris or the use of water is being improperly controlled, construction work shall be halted until appropriate corrective measures have been taken.

(i) During periods when safety-related equipment is vulnerable to either external missiles or missiles from construction work (e.g., jackhammers), Licensee shall provide suitable barriers to protect against such exposure or place the plant in cold shutdown during such work.

(j) During hole drilling in the east and west walls of the Control Building, personnel shall be stationed on the opposite side of the

wall from the driller to monitor the drill penetration. Continous voice communications shall be maintained between the drill operator and the monitor.

(k) Fire blankets (Claremont Weld Shield 800-24 or FabriCote 1584-white) shall be used over all cables in areas where Cadwelding, welding or cutting will be performed.

(l) The Battery Room exhaust duct shall not be disabled unless an alternate, equivalent means of Battery Room ventilation is first provided.

(m) Prior to the installation of plates 1 through 6, a temporary energy absorber shall be installed to preclude exceeding the allowable compressive strength of the underlying concrete in the event of an accidental plate drop.

(n) An energy absorber shall be placed on plate 4 prior to the installation of plate 7.

(o) A one-inch-thick, precrushed, stabilized Hexcel pad and timber cribbing shall be used on top of the previously installed plates for energy absorption during the installation of plate 8.

(p) The work area at 41 R (Elevation 65 feet) shall be protected by a dust-tight flame-retardant enclosure. Similar protective measures shall be applied at any other locations in the Electrical Auxiliaries Room or Control Room where wall removal is necessary.

(q) Piping systems, equipment and components within the Control/Auxiliary/Fuel Building Complex required for safe shutdown or to maintain off-site doses from accidents to within 10 CFR Part 100 guideline values shall remain seismically qualified for earthquakes up to and including the SSE throughout all structural modification work. Any changes to piping systems, equipment and components necessary to ensure that this condition is met shall be performed before the structural modifications are made.

(r) The Licensee shall perform three grout tests for each size and orientation of reinforcing steel (rebar) to be grouted into the existing walls and hole size (considering both depth and radius) in which they are to be grouted prior to proceeding with construction (grouting or rebar), or the Licensee shall perform three grout tests using the maximum bar size in the minimum diameter hole size and embedment length for each orientation (i.e., horizontal, vertically up and down). These tests shall be designed to demonstrate that the yield strength of the rebar can be developed by the grout. If any test result is unsuccessful, the NRC shall be notified.

(s) Should a drop of plates 7 or 8 occur onto the plates below, the Licensee shall report the circumstances to NRC immediately.

Plates 1 through 6 shall be removed and damage inspection made unless it can be substantiated to the satisfaction of the NRC Staff that plate removal is unnecessary.

(t) Exposure of embedded steel columns in the Control Building walls during the modification work shall be subject to the following restrictions:

(1) Between Elevation 45 feet and Elevation 65 feet, column 41 Q may not be exposed unless columns 41 R and 41 N are embedded in the original wall or encased in concrete that has attained a compressive strength of 2,000 psi; likewise columns 41 R and 41 N may not be exposed unless column 41 Q is embedded or encased by 2,000 psi concrete.

(2) Columns 55 N' and 55 Q may not be exposed concurrently, and the second of these may not be exposed before the concrete encasing the first has attained a compressive strength of 2,000 psi.

(3) No columns may be exposed above Elevation 65 feet before concrete in the new N' wall has attained a compressive strength of 3,500 psi and the new concrete in the N and R walls below Elevation 65 feet has attained a compressive strength of 2,000 psi.

(4) Between Elevation 65 feet and Elevation 77 feet, columns 41 N and 46 N may not be exposed unless columns 41 R and 46 R are embedded in the original wall or encased in concrete that has attained a compressive strength of 2,000 psi; likewise columns 41 R and 46 R may not be exposed unless columns 41 N and 46 N are embedded in the original wall or encased in 2,000 psi concrete.

(5) Above Elevation 77 feet, column 41 R may not be exposed unless the new concrete in R line wall below that elevation has attained 2,000 psi compressive strength, and columns 41 N and 46 N are embedded in the original wall and/or encased in 2,000 psi concrete.

(u) Prior to the installation of plate 7, the concrete behind plates 1-4 shall have attained a compressive strength of 3,500 psi. Prior to the installation of plate 8, the concrete behind plates 1-7 shall have attained a compressive strength of 3,500 psi.

(v) In any plane of a wall at any given floor elevation, the wall area removed from drilling pursuant to the proposed modifications, including holes abandoned because rebar was encountered and not filled with grout that has reached design strength, shall be limited to 6%.

2. The following amendments shall be made to the Technical Specifications in Appendix A to Facility Operating License NPF-1:

(a) Section 5.7 of Appendix A shall be amended in accordance with Attachment 21-1 of Licensee Exh. 33.

(b) A Technical Specification and Bases for the Control Building modification connection bolts shall be added conforming to Attachment 6-1 of Licensee Exh. 33.

It is further ORDERED, in accordance with 10 CFR 2.760, 2.762, 2.764, 2.785 and 2.786, that this Initial Decision shall be effective immediately[14] and shall constitute the final action of the Commission forty-five (45) days after the issuance thereof, subject to any review pursuant to the above-cited Rules of Practice. Exceptions to this Initial Decision may be filed within ten (10) days after service of this Initial Decision. A brief in support of the exceptions shall be filed within thirty (30) days thereafter (forty (40) days in the case of the NRC Staff).

Within thirty (30) days of the filing and service of the brief and service of the brief of the Appellant (forty (40) days in the case of the NRC 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. Kenneth A. McCollom, Member

Dr. Hugh C. Paxton, Member

Marshall E. Miller, Chairman

Dated at Bethesda, Maryland
this 11th day of July 1980.

[14]This proceeding is not covered by the Commission's recent suspension of the immediate effectiveness rule (10 CFR 2.764) for certain purposes. 44 FR 65049 (November 9, 1979).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ADMINISTRATIVE LAW JUDGE

Ivan W. Smith

In the Matter of **Docket No. 50-255-ClvPen**

CONSUMERS POWER COMPANY
(Palisades Nuclear Power Facility)

July 22, 1980

In response to licensee's motion for an order requiring the staff to respond to certain discovery requests, the Administrative Law Judge holds that any final documents memorializing the decision of the Director, I&E, not to issue a notice of violation imposing civil penalties in other proceedings must be produced; however, deliberative data leading to the hearing in this proceeding need not be produced on the basis of the present record.

RULES OF PRACTICE: DISCOVERY (INTERROGATORIES)

Under 10 CFR 2.720(h)(2)(ii), interrogatories to NRC staff may be enforced only upon a showing that the answers to be produced must be necessary to a proper decision in the proceeding.

RULES OF PRACTICE: DISCOVERY (OFFICIAL DOCUMENTS)

Under 10 CFR 2.744(d), document requests to NRC staff may be enforced if relevant and not exempt from production under 10 CFR 2.790, or, if exempt, when disclosure is necessary to a proper decision in the proceeding.

RULES OF PRACTICE: DISCOVERY (OFFICIAL DOCUMENTS)

10 CFR 2.790 of the Rules of Practice is the NRC's promulgation in obedience to the FOIA.

RULES OF PRACTICE: DISCOVERY (OFFICIAL DOCUMENTS)

In adopting in 10 CFR 2.744(d) both Exemption 5 of the FOIA and the "necessary to a proper decision" standard, the Commission has adopted traditional work product/executive privilege exemptions from disclosure.

RULES OF PRACTICE: DISCOVERY (OFFICIAL DOCUMENTS)

Any document in final form memorializing the decision of the Director, I&E, not to issue a notice of violation imposing a civil penalty under 2.205 is the final decision of the Commission and does not fall under Exemption 5 of the FOIA.

MEMORANDUM AND ORDER ON LICENSEE'S MOTION TO COMPEL DISCOVERY

By its May 14, 1980 Motion to Compel and its June 13 Supplemental Motion to Compel, Consumers Power Company (CPC) seeks an order requiring the NRC staff to answer its February 21 discovery requests (interrogatories and document requests) 2, 3, 4, 5, 12, 13, 14, 15, and 17. Requests 2 through 5 and a portion of 14 relate to the facts and deliberative considerations leading to the Notice of Violation in this proceeding. Requests 12 through 15 relate to similar information with respect to alleged breach of containment violations by other utilities. Request 17 having been answered is moot according to the staff.

The staff on July 3 answered CPC's motions by agreeing to provide factual data to CPC's requests, i.e., "facts, calculations, and criteria on which it relies in prosecuting this civil penalty action" (hereinafter "factual data"), with respect to this case (Answer at pp. 3-7) and to provide similar factual data with respect to other utilities. *Id. at p. 3 and passim.* The staff reports, and CPC does not dispute, that the staff is in compliance with CPC's discovery requests on such factual data. The staff's representation is dispositive of the motion as it relates to factual data.

The staff declined to answer the discovery requests either as to this proceeding or with respect to other utilities where they inquire into the mental impressions and deliberations (hereinafter "deliberative data") of the Director of the Office of Inspection and Enforcement (Director) and other staff members who participated in this and in other enforcement actions. The staff's objections rest upon the asserted grounds that the information sought is irrelevant, privileged and unnecessary to a proper decision in this proceeding. When refined, the issue presented is the

traditional one of attorney work-product privilege and its laymen's counterpart, executive privilege.

Interrogatories to the NRC staff are authorized by 10 CFR 2.720(h)(2)(ii):

> In addition, a party may file with the presiding officer written interrogatories to be answered by NRC personnel with knowledge of the facts designated by the Executive Director for Operations. Upon a finding by the presiding officer that answers to the interrogatories are necessary to a proper decision in the proceeding...the presiding officer may require that the staff answer the interrogatories.[1]

Document requests to the staff are authorized by 10 CFR 2.744(d):

> Upon a determination by the presiding officer that the requesting party has demonstrated the relevancy of the record or document and that its production is not exempt from disclosure under 2.790 or that, if exempt, its disclosure is necessary to a proper decision in the proceeding...he shall order the Executive Director for Operations, to produce the document.

See also 2.744 (1) (2) (3) and (4).

As can be seen, the standards of the two sections differ. According to the provisions of 2.720 interrogatories may be enforced only upon a showing that the answers to be produced must be necessary to a proper decision in the proceeding. Document requests, however, must be enforced where relevancy has been demonstrated unless production of the document is exempt under 10 CFR 2.790. In that case, and only then, it must be demonstrated that disclosure is necessary to a proper decision in the matter.

The parties have not briefed the difference in the two sections. Moreover, neither the staff nor CPC seem to recognize that document requests must be decided on the dual bases that documents must be produced if relevant unless exempt, *or,* if exempt, when disclosure is necessary. E.g., Staff answer, at p. 14 n.21, at p. 17, at p. 21 n.33,[2] CPC's Motion at pp. 2, 18.

By arguing relevancy of interrogatories, (Answer at pp. 7-11) and by providing factual answers to interrogatories on the basis of relevancy, rather than need, the NRC staff appears to have waived the higher "necessary to a proper decision" standard of 2.720 (h)(2)(ii) in favor of a traditional relevant-unless-privileged standard. The staff has waived this higher standard in other proceedings and it is particularly appropriate that

[1]The material deleted from the quoted regulations relates to the need to find that the requested material is not obtainable from another source. The parties refer to this provision in passing but they present no issue for ruling.

[2]However, the organization of the staff's brief is consistent with the correct standard for both interrogatories and document production.

it do so in this proceeding. Therefore, the standard applied in this order with respect to interrogatories is that the answers will be required where relevant, unless privileged, then the privilege will be weighed against CPC's need for the information. As it turns out, the standard for interrogatories is functionally identical to the standard for document production because exemption under 2.790 is the equivalent to traditional privilege in civil proceedings.

Relevance

The deliberative data leading to this litigation are almost by definition relevant to the issues in this proceeding. The deliberative data may be indirectly relevant for the broad purposes of discovery because the information may lead to the discovery of admissible factual evidence. They are directly relevant to expert NRC staff judgment as to the proper application of enforcement criteria which in turn is conceded by both parties to be relevant in this adjudication. *See* also *Atlantic Research Corporation,* (ALAB-594), June 2, 1980, 11 NRC 841, (schedule of civil penalties may be considered by adjudicators).

The discovery requests relating to other enforcement proceedings are also relevant to the correct application of the civil penalty criteria. Contrary to the staff's position, (Answer, at p. 10), an issue of "discriminatory enforcement" may be raised in this proceeding. There is an interest in NRC civil penalty proceedings in "achieving general equality of treatment among offending licensees...." ALAB-594.[3] Therefore the requested deliberative data are generally relevant to this proceeding. Whether or not each interrogatory and document request in particular is relevant, will be left to the parties to work out in accordance with this order. Neither party argues irrelevancy on an item-by-item basis. The particular discovery requests seem to be relevant.

Privilege and Exemption

Section 2.790 of the rules of practice is the NRC's promulgation in obedience to the Freedom of Information Act, (FOIA), 5 USC 552. Section 552(b) sets forth nine exemptions to the FOIA requirement that agencies maintain and make available identifiable public information records. Exemption 5 (552(b)(5)) is similar to the NRC's Exemption 5 (2.790 (a)(5)):

[3]By this ruling I do not necessarily disagree with the staff that, as a matter of law, "discriminatory enforcement" is no defense. Answer, at p. 10. If however, the staff is to urge in this proceeding a departure from general equality of treatment of those charged with violations, the bases for the departure may be considered.

(5). Interagency or intra-agency memoranda or letters which would not be available by law ... in litigation with the [agency or Commission].

Exemption 5 is the only one germane to the privilege consideration raised by licensee's motion to compel.[4] Licensee argues, however, that the FOIA in general does not purport to set rules of discovery in United States courts or agencies. Motion, at p. 4. The NRC staff in responding to this point concedes that the FOIA does not establish new government priviledges against discovery, but points out that the Commission, empowered to adopt rules of discovery, has elected to incorporate the exemptions of the FOIA into its own rules. Answer, at p. 18 n.28.

Citing *Montrose Chemical Corp.* v. *Train,* 491 F. 2d 63 (D.C. Cir. 1974), the staff also argues that Exemption 5 embodies preexisting principles protecting disclosure of the deliberative processes of decision makers. The staff is correct. The point is made even more exactly in the Supreme Court decision referred to by the *Montrose* court as the Exemption 5 "seminal case" (*Id.,* at p. 65), *Environmental Protection Agency* v. *Mink,* 410 US 73, (1974).

At issue in *EPA* v. *Mink* were efforts by members of Congress to discover under FOIA whether conflicting recommendations had been made to the President concerning the advisability of underground nuclear tests and whether the recommendations were protected by Exemption 5. There the Court noted that the language of Exemption 5 "clearly contemplates that the public is entitled to all such memoranda or letters that a private party could discover in litigation with the agency." *Id.* at pp. 85-86.

The court in *EPA* v. *Mink,* however, acknowledged that "the discovery rules can only be applied under Exemption 5 by way of rough analogies," *Id.* at p. 86. Nevertheless, the court went on to analyze the limits of Exemption 5 in terms of traditional cases on discovery of deliberative processes in civil litigation, citing *Kaiser Aluminum and Chemical Corp.* v. *United States,* 157 F. Supp. 939, 946 (Court of Claims, 1958) and *United States* v. *Reynolds,* 345 US 1, (1953).

The circumstances in *NLRB* v. *Sears Roebuck and Company,* 421 US 132 (1975) are closer to those involved in Administrative Procedure Act (APA) proceedings such as our own. There the issue was whether Exemption 5 protects intra-agency advice given to the General Counsel of the NLRB and the General Counsel's memoranda reflecting that advice and reflecting his own deliberations as to whether unfair labor practice charges should be instituted before the NLRB.

[4]Exemption 7, under FOIA and 2.790 relates to investigatory records compiled for law enforcement purposes. It is so restricted by its six limitations that it is not relevant to this case. Exemption 7 has not been asserted by the staff.

The similarities between the respective roles of the NLRB General Counsel and the I&E Director in this proceeding are very strong. The NLRB General Counsel, acting upon a complaint, receives the advice of one or more components of his office. Either acting upon the advice or not, the General Counsel makes in writing the final determination as to whether a charge of unfair labor practices should be filed before the National Labor Relations Board for adjudication. If the General Counsel decides that no charge should be filed, the matter is ended. If his determination is to file the charge, the matter is tried *de novo.* 421 US at pp. 138-142.

Within the NRC, the Director of I&E has the sole delegated authority within his office to make the decision as to whether or not a civil penalty is imposed. If his decision is to impose a penalty, a hearing *de novo* is held if requested by the licensee. If the Director decides not to impose the penalty, or to compromise it, the matter ends. 10 CFR 2.205. The fact that the NLRB General Counsel acts upon a complaint from an aggrieved person, while the I&E Director most often acts upon an internally generated report is immaterial. Each is the agency official charged with making the decision whether or not a matter is to be litigated.

NLRB v. *Sears,* because it involved adjudications under the Administrative Procedure Act, because it involved a demand for prelitigation deliberative data, and because the scope of Exemption 5 is in issue, is the leading case controlling the issue raised by licensee's motion to compel.[5]

The Court in *NLRB* v. *Sears* left little doubt that, absent special considerations, where an APA adjudicative proceeding is involved, the reach of Exemption 5 is coextensive with privileges in civil litigation:

> Since virtually any document not privileged may be discovered by the appropriate litigant, if it is relevant to his litigation and since the [Freedom of Information] Act clearly intended to give any member of the public as much right to disclosure as one with a special interest therein, [citations omitted], it is reasonable to construe Exemption 5 to exempt those documents, and only those documents, normally privileged in the civil discovery context.[16] The privileges claimed by the petitioners to be relevant to this case are (i) the "generally...recognized" priviledge for "confidential intra-agency advisory opinions...," Kaiser Aluminum and Chemical Corporation v. United States, 141 Ct Cl 38, 49, 157 F Supp 939, 946 (1958), Reed, J., disclosure of which "would be 'injurious to the consultative functions of government....' Kaiser Aluminum and Chemical Corporation, supra, at p. 49, 157 F Supp, at p.

[5]The NRC staff cites *Renegotiation Board* v. *Grumman Aircraft Engineering Corp.,* 421 U.S. 168 (1975), (decided the same day as *NLRB* v. *Sears*) in support of its position on Exemption 5. Answer at 24. Licensee states that *Renegotiation Board* is inapposite. Both parties have a good point. *Renegotiation Board* contains a reasoned discussion concerning the distinction between intra-agency memoranda and final agency opinions. But Renegotiation Board proceedings were exempt from the Administrative Procedure Act, except for the FOIA. This fact troubled the Court. 421 US at p. 192. In view of *NLRB* v. *Sears,* there is no need to rely upon *Renegotiation Board* in APA Proceedings.

946," EPA v Mink, supra, at pp. 86-87, 35 L Ed 2d 119, 93 S Ct 827 (sometimes referred to as "executive privilege"), and (ii) the attorney-client and attorney work-product privileges generally available to all litigants.

16. The ability of a private litigant to override a privilege claim set up by the Government, with respect to an otherwise disclosable document, may itself turn on the extent of the litigant's need in the context of the facts of his particular case; or on the nature of the case, EPA v Mink, 410 US, at p. 86 n 13, 35 L Ed 2d 119, 93 S Ct 827; Hickman v Taylor, 329 US 495, 511-512, 91 L Ed 451, 67 S Ct 385 (1947); Jencks v United States, 353 US 657, 1 L Ed 2d 1103, 77 S Ct 1007 (1957); United States v Nixon, 418 US 683, 41 L Ed 2d 1039, 94 S Ct 3090 (1974). However, it is not sensible to construe the Act to require disclosure of any document which would be disclosed in the hypothetical litigation in which the private party's claim is the most compelling. Indeed, the House Report says that Exemption 5 was intended to permit disclosure of those intra-agency memoranda which would "routinely be disclosed" in private litigation, HR Rep No. 1497, at p. 10, and we accept this as the law. Sterling Drug, Inc. v FTC, 146 US App DC 237, 243-244, 450 F2d 698, 704-705 (1971).

421 US at p. 149.

The Exemption 5 cases approached the issue from the direction of the public's right to information. It is, however, axiomatic that where the public's right to information is equal to the right of a litigant in civil discovery, the litigant's right is equal to that of the public. The exception to Exemption 5 noted by the *NLRB* v. *Sear's* Court, the situation where a litigant has a compelling need for a document, (421 US at p. 149, n 16, *supra,*) closes the circle on staff discovery privileges in NRC proceedings. The Commission in adopting the standards of Exemption 5 and "necessary to a proper decision" as its document privilege standard under 10 CFR 2.744(d) has adopted traditional work product/executive privilege exemptions from disclosure. Consumer's particular need for the Director's deliberative data must be balanced against the purposes of the privilege under both Exemption 5 cases and traditional privilege cases.

Need vs. Privilege

The Freedom of Information Act does not "...permit inquiry into the particularized needs of the individual seeking the information, although such an inquiry would ordinarily be made of a private litigant." *EPA* v *Mink,* 410 US at p. 86. The Exemption 5 cases therefore provide little guidance as to balancing the needs of the discovering party, but they do provide some of the rationale for applying the exemption to prelitigation deliberative considerations of the government decision makers. This rationale is instructive because the Courts had to balance the need for the privilege against an expressed public interest and the strong statutory

mandate requiring disclosure of government documents affecting the public.

The Court in *NLRB* v. *Sears,* supra, held that the "Advice and Appeals Memoranda" which explain the decisions by the NLRB General Counsel to commence a litigation fall within the scope of Exemption 5 (421 US at p. 148) and ruled that the Exemption 5 privilege would at p.tach. *Id.* at 160.[6] The Court commented that the underlying need for the privilege is to encourage the frank discussion of legal or policy matters in order to produce better decisions and policies. The Court also observed the practial human phenomenon of "playing it safe" and the temptation to temper candor in favor of appearances when public dissemination of written remarks is expected, all to the detriment of the decision-making process. *Id.* at p. 150.

In balancing the need for the privilege against the public's right to information, the court also observed that the bases for the decision to litigate would come out in the course of the litigation, and that any "law" to be made in the proceeding will be made by the National Labor Relations Board, not the General Counsel. *Id.* at pp. 159-60. This latter consideration is, of course, parallel to the circumstance of this proceeding.

In *EPA* v *Mink,* supra, there was no counterweighing factor, in that the information sought would not come forth in any subsequent litigation. Nevertheless, the Court recognized the value of the traditional executive privilege doctrine in extending executive privilege to the secret documents in issue:

As Mr. Justice Reed [in *Kaiser Aluminum* v. *U.S.*] stated:

> There is a public policy involved in this claim of privilege for this advisory opinion—the policy of open, frank discussion between subordinate and chief concerning administrative action. Id., at p. 48, F Supp, at p. 946.

410 US at p. 87.

Mr. Justice Reed, retired, wrote the opinion for the United States Court of Claims in the cited leading case of *Kaiser Aluminum and Chemical Corporation* v. *United States,* 157 F. Supp., 939, 945-47, (1958). The ruling held privileged the intra-agency advisory opinion leading to the sale of an aluminum plant to Kaiser's competitor, Reynolds Aluminum, by the GSA Liquidator of War Assets. See also *Hickman* v. *Taylor,* 329 US 495, 509, (1947), regarding attorney work product, cited by Justice Reed where he notes that the government executive privilege is "akin" to the attorney-

[6]The Court did not authorize non-disclosure, however. The matter was remanded to determine whether Exemption 7 would apply. *Id.* at p. 166.

client privilege and the attorney's work-product privilege. 157 F. Supp. at p. 947.

In another APA case, *KFC National Management Corporation* v. *N.L.R.B.*, 497 F. 2d 298 (2nd Cir. 1974), cited by the staff, the Court, in protecting work product in the decision-making process, noted:

> Thus what emerges from the *Morgan* quartet is the principle that those legally responsible for a decision must in fact make it, but that their method of doing so—their thought processes, their reliance on their staffs—is largely beyond judicial scrutiny.

The *Morgan* quartet referred to in *KFC* is a reference to four executive privilege cases concluding in "Morgan IV," *United States* v. *Morgan,* 313 U.S. 409, (1941) in which the Supreme Court unanimously ruled that the Secretary of Agriculture cannot be examined on the deliberative processes by which he arrived at decisions affecting marketing agencies absent a consideration of improper conduct.

NRC decisions have come down on both sides of the issue of work product/executive privilege exemption. In *Consumers Power Company* (Midland Plant Units 1 and 2), ALAB-33, 4 AEC 701 (1971) *aff'd* ALAB-123, 6 AEC 339-41, the Appeal Board accepted the staff's argument that to require disclosure of documents reflecting the development by many persons of its position on the issues would in the future impede a free and open discussion.

In *Virginia Electric and Power Company,* (North Anna Power Station Units 1 and 2), CLI 74-17, 7 AEC 313 (1974) the Commission permitted intervenor's discovery of certain Advisory Committee on Nuclear Safeguards (ACRS) documents. The Commission recognized the executive privilege and Exemption 5 arguments against nondisclosure, citing *United States* v. *Morgan,* supra, *EPA* v *Mink,* supra and *Kaiser Aluminum* v. *United States,* supra. However, in view of the important safety significance of the material in issue, and the licensing board's determination that the information was necessary to a proper decision, the Commission required disclosure of the ACRS internal opinions, memoranda and advice.

The privilege asserted by the Director of I&E and upheld by this order is not for the purpose of protecting the Director or his advisors. It is to protect free discussion and to encourage the staff of the NRC to speak candidly and forthrightly among themselves in their deliberations so that the Director may have the advantage of best advice available. *Kaiser Aluminum* v. *United States,* supra. 157 F. Supp. at p. 947. He is of course not required to accept advice that he disagrees with — advice which may have little value or perhaps even be wrong. But requiring disclosure would most

certainly in the future restrict the flow of advice to him, the bad and good alike.

In the instant case I see no important public safety considerations requiring the disclosure of the staff's deliberative processes. CPC knows better than the staff, it is to be expected, how the factual circumstance arose, and in any event, the staff has agreed to produce all relevant factual material. We do not read the licensee's papers as a request for advice from the staff on the technical issues involved. If any need exists, it is a litigative need, asserted to be required as a defense.[7]

Although I have ruled that the data sought is relevant or could lead to the discovery of relevant information possibly useful in CPC's defense, it is not possible to find from the present record that the information is necessary to a proper decision, or that it is so important to CPC's defense that the privilege should be set aside. The privilege, as noted above, is very important to the Director's responsibilities.

The Director must prove his case *de novo* in the hearing and on review by a preponderance of the reliable, probative and substantial evidence. *Radiation Technology, Inc.* ALAB-567, 10 NRC 533, *Cf. Atlantic Research Corporation,* ALAB-594, supra. The licensee does not need to be privy to the Director's mental processes and those of his advisors to test whether the Director satisfies his burden of proof. Whether he has proved his case or not will be decided on the basis of the evidentiary record and the law. It will not be decided on any basis not known to licensee.

Moreover, to the extent there is a public interest in this proceeding, the fact that the Director will be required to disclose the bases for his charges fully in a public proceeding, removes from consideration one of the factors to be considered in weighing disclosure over privilege. *NLRB* v. *Sears,* at p. 124, supra.

Licensee cites *Boyd* v. *Gullett,* 64 F.R.D. 169, 177 (D. Md, 1974) and *Verrazzano Trading Corp.* v. *United States,* 349 F Supp. 1401 (Cust. Ct. 1972) to the effect that the "exceptions" (nine exemptions) of the FOIA and 2.790 are not a list of documents privileged from discovery in litigation. This is true. The fact that, under Exemption 5, a private litigant's needs *may exceed* the scope of Exemption 5, is thoroughly discussed above (at pp. 122-123). This principle has been applied to licensee's motion. The court in *Boyd* v. *Gullett* itself recognized at the very place cited by licensee that, where the material requested (under FOIA) would have been privileged in a judicial

[7]This proceeding is neither entirely private nor entirely public. The same circumstance prevailed in *NLRB* v. *Sears,* supra, where the Court, nevertheless upheld the work-product privilege. 421 US at p. 155, n 22.

proceeding under Federal rules, Exemption 5 subjects the agency to the same privilege standard. 64 F.R.D. at p. 177.

Verrazzano Trading Corp. v. *United States* follows the principle that scientific reports such as laboratory analyses, purely objective in nature, which are not policy or decision-making recommendations are not exempt under Exemption 5. 349 F. Supp. at pp. 1401-07. This standard has been applied in this order. As I understand the staff's response to the motion to compel, the staff has not withheld from disclosure any objective scientific reports. If this is not the case, the staff is wrong.

Licensee cites *United States* v. *Continental Can Company,* 22 F.R.D. 241 (S.D.N.Y. 1951) to the effect that once the government comes into court as a party it waives whatever privileges it had. Motion, at p. 16. Indeed the portion of the decision cited by licensee does seem to have sweeping implications that the government loses privileges when it becomes a litigating party. *Id.* at p. 245. However, the situation in *Continental Can* relates to a "privilege" created by an Attorney General's regulation protecting the disclosure of *facts* developed by the FBI, and in no way touches upon work-product privilege, nor does the holding differ from this order where every material fact which may be relevant to the case must be produced upon appropriate demand. The better reasoning is that the government is no less entitled to normal privilege than is any other party in civil litigation, as discussed by the staff in its Answer, at pp. 15-16.

Similarly, *United States* v. *Reynolds,* supra, does not support licensee's argument that it is entitled to the Director's deliberative data. Licensee argues that pursuant to *Reynolds,* the government may exercise its evidentiary privilege only at the price of letting the defendant go free. Motion, at p. 5. *Reynolds* involved a ruling that military secrets were privileged in a tort proceeding against the government. The passage cited by licensee was an observation that in a criminal case, the government would have to elect between secret factual privilege and dismissing the criminal defendant, but that such considerations would not apply in a civil proceeding where the government is a defendant. 345 U.S. at p. 12. Licensee has not made a case for granting to it in a civil penalty proceeding the same special considerations to be afforded to defendants in criminal proceedings.

In *Ghana Supply Comm'n* v. *New England Power Company,* 83 F.R.D. 583 (E. Mass, 1979), cited by licensee (motion at p. 6), the executive privilege was asserted by the government of Ghana but the court ruled that the executive privilege was waived when Ghana elected to become a plaintiff in United States Courts. Although the case is complicated by considerations of comity and the diversity among Federal law, Massachusetts law and the

law of Ghana, on balance licensee is correct. *Ghana* tends to support the position that the executive immunity is waived where the government sues.

The answer to *Ghana,* however, is that Ghana, functioning as both a government and as a trading corporation had the choice to sue or not to sue for commodity contract damages in United States Courts. There was no consideration of the public interest in protecting the executive privilege as explained in *NLRB* v. *Sears, EPA* v. *Mink* and the other cases cited above. In this proceeding, involving the enforcement of important public health and safety laws and regulations, the public interest in protecting the quality of the decision-making process is no less than in any other case on the subject.

Accordingly, I find that the deliberative data leading to the hearing in this proceeding, withheld from discovery by the Director is privileged and exempt from production under traditional privilege tests, under Exemption 5 of the FOIA and under 2.790. The record does not demonstrate that the information is needed for a proper decision in the proceeding nor that the information is important to licensee's defense. The Director is not required to produce such data. This may not be the end of the matter, however. Until the Director's case unfolds, it may not be possible to determine what is required for a proper decision in the proceeding or what licensee *must* have for a full defense. The ruling today is based upon the record as it exists now. Due process will require that the licensee's defense be permitted to follow the Director's allegations and arguments.

Relevant Data From Other Proceedings

In *NLRB* v. *Sears,* supra, the Court extended the prelitigation deliberative data exemption under Exemption 5 to only those data and memoranda which led to the filing of a formal charge of unfair labor practices before the NLRB. In supplementation to the traditional work-product privilege, the basis for the Court's ruling was that memoranda which recommend litigation are not "final opinions, including concurring and dissenting opinions, as well as orders, made in the adjudication of cases;..." Such opinions, under FOIA, must be made available for public inspection. 5 USC 552(a)(2)(A). The Court, it will be recalled, observed that the adjudication following the filing of charges, not the charging memorandum, was the final agency opinion. 421 US at p. 148.

However, Exemption 5 did not apply where the General Counsel's memoranda concluded that no complaint should be filed. 421 US 155. The Court reasoned that where the memoranda disposing of the consideration closed the proceeding without a formal litigation, that disposition was the final agency disposition. *Id.* At the NLRB the General Counsel's closing

memoranda are not appealable. *Id.* As far as any particular case is concerned, the closing memoranda constitutes the "law" of the agency. *Id.* at p. 158. As "final opinions" the closing memoranda must be indexed pursuant to 5 USC 552(a)(2)(A). *Id.* The closing memoranda is also regarded as an "adjudication" under the Administrative Procedure Act. *Id.*

The analogy to our proceeding is clear.[8] The Director, having the final authority under 2.205 to issue or not to issue a notice of violation imposing a civil penalty is, by delegation, making the final decision of this Commision when he determines not to impose the penalty. Any document in final form memorializing his decision not to issue a notice of violation imposing civil penalties does not fall within Exemption 5. While I do not find that closing documents in other civil penalty proceedings are necessary to a proper decision in this proceeding, I have above, (at p.120, supra,) found that they are relevant. As such, they fall beyond the scope of privilege and beyond Exemption 5. They must be produced pursuant to licensee's Interrogatories 12 through 14.

It is not clear from the record whether such closing memoranda exist, or if they exist, whether the staff has already provided them to licensee under the FOIA. In any event the Director is not required to prepare closing memoranda in previously closed cases covered by Interrogatories 12 through 14 by virtue of this order. *NLRB* v. *Sears,* 421 US at p. 162. The staff reports that only four memoranda, covered by Interrogatories 12(f) and (g), exist and offers them for *in camera* inspection. Answer, at pp. 6-7. These memoranda and any others from regional personnel or from subordinate I&E headquarters personnel recommending for or against sanctions need not be produced.

Apparently the practice has not been for the Director to publish or index closing memoranda if in fact he prepares them. Therefore, there may be some unfairness in requiring disclosure of candid deliberations and references to confidential recommendations which were prepared in the belief that they would not be disclosed. Moreover, it would not be consistent with the public interest in encouraging free deliberations and advice by public officials as explained in the cases cited above even though closing memoranda are not covered by Exemption 5. Therefore, the staff may seek relief consistent with this order to balance the requirement that

[8]It is not so clear that the Director's actions are APA "adjudications" within the meaning of *NLRB* v. *Sears,* because the matter most often arises by internal I&E inspection, not upon the complaint of an aggrieved party. Nevertheless, it is a final disposition. The staff must concede this point if it argues that his decision to issue the notice of violation is to be protected as the work of the decision maker. E.g., Staff Answer, at p. 8. Although it is my view that 5 USC 552(a)(2)(A) requires the Director to prepare and to index final closing memoranda on civil penalties, that is a consideration beyond the jurisdiction scoped by the notice of hearing, and beyond the powers of Part 2 presiding officers.

final opinions be published against the need to protect previously expressed candid deliberative advice and decisions. Perhaps sanitized and complete versions of closing memoranda may be submitted for *in camera.* This procedure is appropriate only because other than the requirements of 5 USC 552(a)(2), the Director has had no prior indication that closing memoranda would be made public.

It cannot be determined from the papers relating to licensee's motion whether the staff has withheld documents which contain facts, calculations, and criteria, conceded by the staff to be relevant and not privileged, but which also contain information revealing the deliberative processes of the Director and his advisors. If purely factual material exists in documents containing deliberative information in a form which is severable without compromising the deliberative privilege, the staff is required to produce such documents in a sanitized form. *EPA* v. *Mink,* supra, 410 US at p. 91.

On July 18, 1980, the licensee filed its answer to the staff's motion for a protective order which motion was embodied in the staff's July 3 answer to CPC's motions to compel. The answer to the motion for a protective order was received after the foregoing memorandum and order was prepared. In its answer CPC argues anew the bases for its motions to compel.[9] CPC raises no new substantive arguments. Its latest filing provides no grounds to alter the rulings above. However, CPC's answer raises some points that deserve clarification.

CPC complains that the staff failed in a duty to identify the material for which it asserts the executive privilege. CPC Answer, at pp. 8, 16-17. The foregoing order does not require the staff to identify the privileged documents nor to present them for *in camera* inspection because it seems that the asserted privilege was a definite one, i.e., either a document or portion thereof is clearly privileged or it is not. If CPC does not agree with

[9]This sequence demonstrates a confusing aspect of the NRC discovery rules. Section 2.740(f), which provides for motions to compel, suggests that a party may not resist the disputed discovery request on the ground that the discovery sought is objectionable unless the party failing to respond to discovery has first sought a protective order. Another reading of the same rule suggests that a failure to respond to the motion to compel must be preceded by a motion for a protective order. The Federal Rules of Civil Procedure are not analogous on this point. In this case the staff moved for a protective order with its answer to the motion to compel. This procedure is sometimes but not uniformly followed in NRC practice. The staff's motion produced CPC's third argument in support of its motion to compel, each adding to CPC's position. CPC's last filing, although literally permitted by 2.730(c), is frequently omitted in discovery disputes. The better practice is for the party moving to compel discovery to advance all arguments and bases known to it at the time it makes its original motion. The staff's reliance upon executive privilege was known to CPC when CPC filed its original motion. However, CPC is not to be faulted for its handling of this motion because of the provisions of 2.730(c) and 2.740(c) and (f).

this analysis, it may renew its request for further identification or for related relief consistent with the privilege rulings made above.

CPC suggests that the staff is providing factual data, (conceded by the staff to be not privileged) only where the factual data supports its position. CPC Answer, at p. 10, n. However, staff's responses to CPC's discovery requests purport to produce all relevant data not privileged. While I do not share CPC's concern that the staff is withholding relevant factual data, to remove any doubt, the staff is directed to produce the relevant "facts, calculations and criteria" on which it relies and which it possesses, whether or not the data support the staff's position in this litigation.

CPC argues that because the staff has disclosed certain information within the category of information asserted by it to be privileged, the privilege is lost as to similar information not disclosed. CPC Answer, at pp. 9, 10, and 15. While it is true that a party cannot withhold as privileged the same data it previously disclosed, CPC has no standing to complain because the staff disclosed data as to which it could have asserted privilege. In other words, CPC has provided no support for its apparent position that waiving priviledge on certain data waives the otherwise valid privilege on all other data in the same category.

CPC states that because the I&E Enforcement Manual, Chapter MCO800, instructs the Director to advise the appropriate Regional Director of the reasons for not accepting the Regional Director's recommendation on enforcement cases, the Director's advice memoranda should be disclosed as the "best contemporaneous assessment by the Director of the importance" of the particular consideration. CPC Answer, at pp. 11-12. This characterization of the memoranda may be true, and as noted above such communications are relevant. However, the fact that such instructions may appear in the Enforcement Manual does not operate to invalidate any privilege attached to the Director's report to his Regional Director. The appropriate considerations are covered in the discussions above. For example, if the Regional Director recommends that no enforcement action be initiated and the Director disagrees, the Director's memorandum to that effect is privileged under Exemption 5, at p.124, supra. *NLRB* v. *Sears,* supra, 421 US at pp. 148, 160. If, however, the Regional Director recommends an enforcement action but the Director decides to terminate the matter, the Director's memorandum to the Regional Director, if it is his final closing memorandum, must be produced, at p.128-129, supra, *NLRB* v. *Sears,* 421 US at p. 155.

Motions for corrections or reconsideration may be filed within 10 days following service of this order. The staff shall comply with this order within 20 days following its service or within such other time as the parties agree to.

Ivan W. Smith
Administrative Law Judge

Bethesda, Maryland
July 22, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-301**

WISCONSIN ELECTRIC POWER COMPANY
(Point Beach Nuclear Plant, Unit 2)

July 10, 1980

The Director of Nuclear Reactor Regulation denies under 10 CFR 2.206 a request that the Commission enter an order to show cause and an order enjoining operation of Point Beach Nuclear Plant, Unit 2, because of steam generator tube degradation at the facility.

DIRECTOR'S DECISION

By petition dated March 12, 1980, Wisconsin's Environmental Decade, Inc. (DECADE) requested that the Commission enter an order to show cause and an order enjoining operation of Point Beach Nuclear Plant, Unit 2, because of steam generator tube degradation at the facility. The petition was referred to the Office of Nuclear Reactor Regulation to be treated as a request for action under 10 CFR 2.206 of the Commission's regulations. Notice of receipt of the petition was published in the Federal Register on April 9, 1980 (45 FR 24293).

I

DECADE cites as the basis for its request previous filings dated November 14, 1979, November 26, 1979, December 17, 1979, January 8, 1980, and February 8, 1980. These earlier filings address the Petitioner's concerns regarding the consequences of a LOCA coincident with steam generator tube ruptures in light of significant tube degradation which has

occurred at Point Beach Unit 1 within the tubesheet crevices and the more recent finding of defects at or slightly above the top of the tubesheet.[1]

DECADE contends that while it had previously been believed that no significant tube problem existed at Point Beach Unit 2, and experience at Unit 2 on February 28, 1980 ("one tube ruptured with a leak rate reported at 1400 gpd") and subsequent eddy current test (ECT) inspections which identified 35 other tubes with defects, "all of which were above the tubesheet," invalidates any basis for continued operation of that facility.

The Staff has evaluated the steam generator tube leak which occurred at Point Beach Unit 2 on February 28, 1980, and the results of the subsequent steam generator inspection conducted at the facility during March 1980. For the reasons set forth in the attached Safety Evaluation Report, (Attachment C), and summarized below, I find that the Unit 2 steam generators have been adequately inspected and that the condition of the steam generators is adequate to assure continued safe operation of Point Beach Unit 2.

II

Unit 2 has previously experienced wastage and stress corrosion cracking at and above the tubesheet affecting in excess of 200 tubes,[2] of which 36 had been plugged. As discussed in the attached SER, the Staff believes these defects to be in a generally stable condition, i.e., they are not developing at a significant rate. No special operating restrictions, such as those imposed at Point Beach Unit 1, have been required or imposed.

The 1400 gpd (gallons per day) primary to secondary leak which occurred recently at Unit 2 was a relatively small leak similar to those which have occurred at other PWR units as a result of through wall cracks. The term "rupture" is generally reserved for tube failures involving a sudden and violent opening of the tube generally accompanied by large plastic deformation and high leakage (e.g., fishmouth tube burst). No tube ruptures have occurred at the Point Beach Unit 2 facility.[3]

The findings of the March 1980 steam generator inspection at Unit 2 are addressed in the attached Safety Evaluation. Deep crevice cracking at Point Beach Unit 2 is clearly at an early stage compared to the situation at Point

[1]The substantive issues raised in these filings have previously been addressed in Staff Safety Evaluations dated November 30, 1979 and April 4, 1980 for Point Beach Unit 1. See Attachments A&B.

[2]The Point Beach Unit 2 steam generators each contain 3260 U-tubes.

[3]A tube rupture (180,000 gpd) did occur at the Point Beach Unit 1 facility on February 26, 1975. That tube failure was determined to be the result of wastage and stress corrosion cracking above the tubesheet.

Beach Unit 1 (and other units), and continued operation of Point Beach Unit 2 is supported by the evaluation and conclusions previously set forth for Unit 1 (see Attachment A). Should significant deep crevice cracking activity develop sometime in the future, the Staff would not expect this activity to occur above the top of the tubesheet. This is supported by results of laboratory examinations of five tube samples removed from Point Beach Unit 1 and one sample (containing the deep crevice indication) removed from Unit 2 indicating that the general intergranular attack occurring within the tubesheet does not extend outside of the tubesheet. The need for additional tube removals for laboratory examination will be considered by the Staff should the deep crevice cracking phenomenon continue to develop at Unit 2.

As discussed in the attached Safety Evaluation, the Staff has concluded that the finding of approximately 500 indications at the top of the tubesheet, including approximately 250 indications of 20% or greater, and 32 indications of 39% or greater, is not indicative of a new or highly active corrosion mechanism occurring at or above the tubesheet. This is supported by a reevaluation of eddy current tapes from previous inspections for those tubes containing 39% indications or greater indicating that the majority of these indications have been present in previous inspections dating back to the period 1974 to 1977. Previous inspections dating back to this period have identified the region within a few inches of the tubesheet to be the scene of wastage thinning and/or stress corrosion cracking degradation which recent data indicates is not developing at a significant rate. The staff attributes the finding of the top of the tubesheet indications in March 1980 to the enhanced capability of multifrequency ECT to discriminate relatively small amplitude defect signals from the tubesheet entry signal, relative to previously employed single frequency ECT.

III

Based on the foregoing, I have determined that there is reasonable assurance that the Point Beach Unit 2 facility can continue to operate without undue risk to the public health and safety. Consequently, DECADE's request for an order to show cause and an order enjoining operation of the Point Beach Unit 2 facility 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 in the Local Public Document Room at the Library of the University of Wisconsin, Stevens Point, Wisconsin 54481. Additionally, a copy of this decision will 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.

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 10th day of July, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-339 OL**

VIRGINIA ELECTRIC AND POWER COMPANY (North Anna Power Station, Unit 2)

August 21, 1980

The Commission authorizes the Director, Office of Nuclear Reactor Regulation, to issue an operating license for Unit 2 of the North Anna facility.

DECISION

The Commission has authorized the Director, Office of Nuclear Reactor Regulation, to issue license NPF-7, Facility Operating License for North Anna Power Station, Unit No. 2. In conjunction with Commissioner Gilinsky's approval he requested dissemination of his attached concurring views.

SAMUEL J. CHILK
Secretary of the Commission

COMMISSIONER GILINSKY'S SEPARATE STATEMENT ON NORTH ANNA 2 FULL POWER AUTHORIZATION

As today marks the first instance of the Commission itself granting initial permission for full power reactor operation, several remarks are in order about the procedure followed by the Commission and the merits of the present application. Previous operating licenses have been issued by the responsible NRC staff office after a staff review and, in the case of a contested license, after authorization by an Atomic Safety and Licensing Board. The Commissioners were not normally

involved unless the Licensing Board decision in a contested case was appealed to the Appeal Panel and further appeal was subsequently taken up by the Commission. In practice, this meant that even if the Commissioners did become involved in the case such involvement came long after the start of reactor operation and that the Commissioners only reviewed a narrow set of issues which survived the two-stage appeal process. This delegation of the Commissioners' most important decisionmaking function, coupled with the *ex parte* bars on discussing cases in controversy with parties or interested persons, meant that the Commissioners, who were putatively in charge, were in practice not at all in charge and were not even well informed about the most important activity of the agency.

I proposed a number of changes some years ago to rectify this situation: elimination of one level of review, direct appeal from Licensing Board decisions to the Commission, and a change in the Commission's rules so that major power reactor licensing decisions would not become effective until the Commissioners themselves acted. There was not a majority for these changes.

In the wake of the Three Mile Island accident, of the extensive new licensing requirements that were in the process of being imposed as a result of that experience, and of the sensitivity with which further power reactor licensing was regarded after the accident, the Commissioners announced[1] that they would themselves rule on all major reactor licenses. In effect, the Commission suspended the rule which gave immediate effectiveness to decisions of the Commission's Licensing Boards. I regard this decision as the most important single step taken by the Commission after the accident.[2]

The review undertaken by Commissioners is necessarily an audit of the staff's review which is itself an audit of the applicant's submissions. In making the various statutory findings that are required by law and our regulations, the Commission must lean heavily on the conclusions of the technical staff. The Commission's review is nevertheless an important and valuable one, both in terms of the North Anna 2 application and in terms of improving the safety review process through closer involvement of the Commissioners.[3]

My own review of the application before us and of its evaluation by the NRC technical staff and my visit to the reactor lead me to conclude with reasonable assurance that the requisite standards of the law are met and therefore the application should be approved. At the same time, I want to make clear that deficiencies still attach to this application. While these deficiencies are not sufficiently severe to justify denial of a license, they are nevertheless important

[1]On September 6, 1979.

[2]The North Anna Unit 2 operating license proceeding is, at this stage, an uncontested case. The procedures the Commission will employ in a contested case are contained in 10 CFR Part 2, Appendix B.

[3]I would note that the Licensing Board proceeding on the North Anna 2 operating license was completed on December 13, 1977. The Appeal Board took *sua sponte* review of this case. It decided that only two issues, pumphouse settlement and the risks posed by turbine missiles required further hearings on appeal. The pumphouse settlement issue was decided in the spring of 1980. The turbine missile issue is not resolved but the Appeal Board appears to be satisfied that turbine missiles will not become a hazard until the turbines have been in use for some time. Neither the Appeal Board nor the Licensing Board addressed issues arising from the TMI accident.

from the point of view of safety. Some of the deficiencies involve requirements, such as the qualification of electrical equipment for accident conditions, which were imposed on all plants and which must be complied with at future dates. Others, such as the deferment of the date for the installation of a reactor coolant system vent to relieve hydrogen buildup, are the result of VEPCO's inability to comply with present requirements in a timely fashion. Finally, there are some matters with which I am not personally satisfied. A few of the specific matters that concern me are mentioned here.

(1) More than half of the categories of critical electrical equipment, some 57 categories out of 92, involving over 200 pieces of equipment, have not been shown to be qualified for operation under accident conditions. The applicant has informed NRC that 9 categories of equipment require corrective action and that 48 categories lack detailed test data and/or require documentation of their qualification. The NRC staff believes that, except for the 9 categories requiring changes, the problem is one of documentation and not of actual qualification. As a condition of the license, the applicant must complete such documentation by November 1 and in this respect North Anna 2 is being treated no less strictly than operating plants. The fact remains that the applicant has been on notice for more than two years that the Commission will insist on documented evidence that key categories of electrical equipment can function in an accident environment. That the situation is still not in order reflects a disturbing lack of attention on VEPCO's part.

I should add that not all aspects of the possible accident environment are dealt with by NRC standards and that this reflects a lack of attention on NRC's own part. In particular there are still no requirements that electrical equipment within the containment be able to withstand a hydrogen burn such as the one that took place during the Three Mile Island accident.

(2) There are still important deficiences in the control room layout and instruments:

Standing in front of the main panel I found I could not see certain indicators of plant status displayed on the bottom of the back panel, for example, the indicator lights showing whether containment isolation has occurred.

Since the core outlet thermocouples provide a valuable means for detecting core overheating, the thermocouple measurements should be readily visible in the control room and there should be means for immediately bringing to the attention of the operators any increase in temperature outside the normal range. The Advisory Committee on Reactor Safeguards recently said it "believes that instruments displaying thermocouple readings should be readily available in plant control rooms, consistent with the philosophy underlying ACRS Generic Item 43: 'Instrumentation to Follow the Course of an Accident.' " In the North Anna control room, the core outlet thermocouple readings can be displayed individually on a meter, located some distance from the main control panels, which reads only up to 700°F. The reactor computer can print out up to much higher temperatures but it needs to be queried by the operator.

(3) The Emergency Operations Facility (EOF) should be moved farther from the reactor.

By letter of October 10, 1979, the staff required an immediate upgrade of all licensees' emergency plans and facilities, including designation of an Emergency Operations Facility (EOF), by January 1, 1980. VEPCO identified its visitors center as the interim EOF. That center is located about one-quarter mile from the reactor, on a hill at approximately stack height, with a direct line of sight to the reactors. In the event of a serious accident, the facility which would be depended upon to direct public protection measures may itself have to be evacuated. The staff has concluded that the EOF is adequate for full power operation. I would require upgrading of an alternate facility to be the primary EOF as soon as possible.

(4) Finally, while I am not prepared at this point to describe it as a deficiency, it appears the North Anna 2 configuration of low pressure injection (LPI) and residual heat removal (RHR) systems could be improved substantially in terms of its ability to deal with accidents. The North Anna plant has separate low pressure injection and residual heat removal systems; on its face, this separation appears to be an improvement. However, the LPI, intended to supply makeup water for core cooling during a loss of coolant accident (LOCA), does not include a heat exchanger. If the plant goes into the recirculation mode following a LOCA, decay heat would have to be removed from the containment via heat exchangers in the containment spray recirculation systems.

The RHR system, located inside the containment and intended to remove decay heat from the primary system during the refueling mode, does have a heat exchanger but, because the RHR is not regarded as a safety system, it has not been qualified for operation in an accident environment. If so qualified, this system could serve as an alternative to the steam generators as a heat sink under accident conditions.

The staff and the ACRS should reexamine the desirability of attaching a heat exchanger to the LPI system and of environmentally qualifying the RHR system.

There remains the troublesome question of the legal sufficiency of the Commission's findings. Section 185 of the Atomic Energy Act permits the Commission to issue an operating license if it finds that the facility has been constructed and will operate "in conformity with the provisions of...[the Atomic Energy] Act and of the rules and regulations of the Commission...." In view of the lack of a documented connection between the regulations and the safety review performed by the staff, the legality of the Commission's licensing process is not as firmly based as it should be. The General Counsel has advised the Commission that it can lawfully grant a license for North Anna Unit 2. At the same time he recommends a program to correct the present legal infirmities by documenting the relationship between the regulations and the safety review process.[4] I believe that the Commission should forthwith implement the General Counsel's recommendations.

[4]Memorandum from the General Counsel to the Commission, August 14, 1980 (attached).

ATTACHMENT

August 14, 1980

MEMORANDUM FOR: Chairman Ahearne
Commissioner Gilinsky
Commissioner Hendrie
Commissioner Bradford

FROM: Leonard Bickwit, Jr., General Counsel

SUBJECT: COMPLIANCE WITH COMMISSION REGULATIONS AND FURTHER LICENSING

Our opinion has been requested on whether NRC may issue a nuclear power reactor construction permit or operating license without first finding compliance with all applicable NRC safety regulations and, if not, whether the safety review process, described by NRR in its memoranda to the Commission dated June 13 and July 23, 1980, provides a legally adequate basis for an affirmative finding of compliance. In brief, we conclude that a finding of compliance with all applicable safety regulations is generally a prerequisite to license issuance, and that the present safety review process provides a legally adequate basis for a compliance finding. However, we see need for improvement in the review process in this regard, and (along with OPE) make some recommendations for improvement. Our reasons follow.

1. May NRC issue a nuclear power reactor construction permit or operating license without first finding compliance with all applicable NRC safety regulations?

a. Operating Licenses

Section 185 of the Atomic Energy Act provides that operating licenses are issued "upon finding that the facility authorized has been constructed and will operate in conformity with...the rules and regulations of the Commission." Thus the Act itself requires a finding of compliance with applicable regulations before operating license issuance. The NRC's regulations are to the same effect, although the wording is varied. Under 10 CFR 50.57(a)(1) and (2), an operating license may be issued upon finding that construction has been substantially completed "in conformity with...the rules and regulations of the Commission" and that the facility will operate "in conformity with...the rules and regulations of the Commission." 10 CFR 50.50 is of similar effect. 10 CFR 50.40 and 50.57(a)(3) set forth a standard for operating license issuance that there be "reasonable assurance" that the applicant and the activities under the license will be in compliance with the Commission's rules and regulations.[1] Moreover, Commission adjudicatory decisions are clear that compliance with the Commission's

[1]Each operating license issued by the Commission specifically states that the Commission has found that the application "complies with...the Commission's rules and regulations," that construction has been substantially completed "in conformity with...the rules and regulations of the Commission," that the facility will operate "in conformity with...the rules and

regulations is essential to a determination of adequate protection of the public health and safety under the Atomic Energy Act. *E.g., Main Yankee Atomic Power Company* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1009-1011 (1973). Thus, under the Atomic Energy Act, and the Commission's own regulations and adjudicatory decisions, no operating license may be issued unless and until the Commission has found that the facility is in conformity with the Commission's safety regulations.

b. Construction Permits

There is no specific provision in the Atomic Energy Act which states that a construction permit may be issued only if the Commission finds compliance with applicable regulations.[2] However, 10 CFR 50.50, which is equally applicable to construction permits and operating licenses, states that the Commission will issue a construction permit upon determination that the application "meets the standards and requirements of the...regulations." Thus, the clear import of the NRC's regulations is that some finding of compliance is a prerequisite to construction permit issuance.[3] The actual finding required becomes more clear if one examines 10 CFR 50.35.

Under 10 CFR 50.35 a construction permit may be issued with "technical or design information...required to complete the safety analysis" missing. In effect, 50.35 allows a construction permit to be issued without a full finding that plant operation would be in compliance with the regulations, provided that three conditions are met. First, the application itself must contain all the design and other information required for construction permit applications by the regulations (*e.g.,* 10 CFR 50.34(a)). In some areas (*e.g.,* 10 CFR Part 100 site suitability) it is clear that the information must be sufficiently complete to make a full compliance finding. Second, there must be reasonable assurance that any outstanding compliance issue will be satisfactorily resolved prior to operation. Third, the Commission must be able to make the overall finding that there is reasonable assurance that plant operation will not present undue risk to public health and safety. *Port County* v. *NRC,* 606 F.2d 1363 (D.C. Cir. 1979); *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 5 NRC 760 (1977).[4]

2. Does the NRC licensing review process provide a legally adequate basis for a finding of compliance with all applicable safety regulations?

The NRC staff's safety review process is generally described in NRR's memoranda to the Commission, dated June 13 and July 23, 1980. We have

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regulations of the Commission," and that there is "reasonable assurance" that the licensed activities "will be conducted in compliance with the rules and regulations of the Commission."

[2]Section 103b of the Act states that section 103 licenses shall issue to those "who are equipped to observe and who agree to observe such safety standards...as the Commission may by rule establish." This provision applies to both operating licenses and construction permits. *See* section 185. No similar provision appears for section 104 licenses, although section 104b indicates that licenses under that section are subject to "minimum amount of such regulations." All licenses and construction permits may be revoked under secton 186 for failure to comply with NRC regulations.

[3]Also, the typical construction permit contains a statement that the Commission has found that the application complies with the Commission's regulations.

[4]The Commission may also grant exemptions from its regulations applicable to construction permits and operating licenses under 10 CFR 50.12.

reviewed these memoranda, and discussed them with the NRR staff. Based on the review and discussions we conclude that the review process does provide a legally adequate basis for a compliance finding. However, our review focused on the general adequacy of the review process standing by itself as the only evidence of compliance or noncompliance. Whether the review process described is sufficient in the face of specific evidence of noncompliance in a given case can only be judged on a case basis.[5] Moreover, our review was of necessity a general one. We cannot preclude the possibility that a detailed review of a particular case would reveal some significant problems in some limited areas. Each staff safety evaluation will contain specific evidence of compliance that must also be judged on a case basis.

The NRR memoranda and discussions suggest two possible problems with the safety review process as it is presently conducted. The first problem is that the review process is an audit process. As NRR stated in its July 23, 1980 memorandum; "not every system and not every 'nut and bolt' is explicitly evaluated." The second problem is that the review process focuses on compliance with the standard review plan (SRP), regulatory guides, branch positions, and other similar, non-binding, informal guidance, rather than on compliance with the regulations themselves. These two problems will be addressed in turn below.

a. The Audit Process

In an audit review process, some but not all aspects of plant design and operation are reviewed. This appears to be a characteristic of any reasonable review process. There is no reasonable way that NRC could duplicate the thousands of man hours spent by the utility and its contractors in plant design, quality assurance, and development of operating procedures. NRC is in no different position in this regard than other Federal regulatory agencies charged with licensing and regulating a complex project.[6]

Apart from this important practical consideration, there are other reasons why an audit review process is legally adequate. First, many, and probably most aspects of plant design or operation that are not reviewed by NRC staff in a particular case were in fact reviewed in a prior similar case. As the safety review process is conducted from year to year, old issues become largely settled as applicants

[5]When there is conflicting evidence on a question of compliance with the regulations, the decisionmaker may be confronted with the question of whether there must be compliance "beyond a reasonable doubt," compliance "by a preponderance" or by a "clear preponderance" of the evidence, compliance "beyond a reasonable doubt," "reasonable assurance" of compliance, or compliance by some other measure of proof. We do not reach this question here, since we are examining the review process in a general sense only to see if it is capable of presenting a *prima facie* case. Moreover, each Commissioner is free to decide for himself or herself how confident he or she must be in the review process before agreeing to its conclusions. We regard this as a subjective policy judgment. We would note that the legal argument that the "reasonable assurance" standard imposes on applicants a burden of proving its position "beyond a reasonable doubt" has been rejected by the courts. *North Anna Environmental Coalition* v. *NRC*, 533 F.2d 655, 667 (D.C. Cir. 1976).

[6]Considerations of practicality have led the courts, in other contexts, to refer to the "normally reasonable inference that what is true for a fair sampling...is probably true for most." *May Trucking Company* v. *U.S.*, 593 F.2d 1349 (D.C. Cir. 1979) (ICC grant of broad authority to serve many areas sustained based on a showing of need for the service in a representative number of areas).

incorporate solutions found acceptable in prior reviews, and new issues arise based on new insights and information. The reviewers approach each new application with a general awareness of what is settled and what is not. They devote the most review resources to the areas considered unsettled, because it is here they believe that differences between applicant and staff will most likely arise. Little or no resources are devoted to other areas because of the general belief, based on experience, that in these areas the applicant will have adopted acceptable designs and procedures. Also, issues of compliance with particular NRC regulations have been raised in numerous adjudicatory proceedngs. Where the issue raised was in an area that was not specifically reviewed, the staff has in most cases been able to reconstruct the review process that led to the resolution of the issue in the prior case and present a convincing case for compliance to the licensing board. In effect, past review and adjudicatory hearing experience supports a kind of rebuttable presumption by the reviewers that the plant is in compliance in all the settled, although unreviewed, areas. We cannot say that this kind of presumption is unreasonable as a matter of law.

Second, in every case the staff does conduct some review of the applicant's qualifications. Every application contains numerous statements to the effect that this or that particular NRC regulation is satisfied. These statements, made under oath or affirmation by a qualified applicant, are evidence of compliance with the regulations that can be relied on by NRC.[7] Moreover, applicants must have a quality assurance program which is designed to ensure that NRC regulations are complied with in designing, procuring, and installing systems and components in the plant. The NRC staff reviews the adequacy of this program in every case. This provides assurance that applicants' assurances of compliance have substance beneath them.

We believe these factors taken together indicate that the review process does provide a legally acceptable basis for a finding of compliance in areas of plant design and operation not specifically reviewed in a particular case.

b. Use of Informal Guidance

The second problem is that the described review process focuses on compliance with the SRP and other informal guidance, rather than compliance with the regulations themselves. The Commission's safety regulations in 10 CFR Parts 50 and 100 have, for the most part, remained unchanged since the 1960's and are, for the most part, too vague and general to serve as a clear guide to correct licensing decisions. The regulations for the most part embody a collection of broad safety priniciples rather than a collection of specific safety requirements. Some guidance was needed to bridge the gap between the statements of broad safety principles in the regulations and specific design and operational proposals in individual construction permit and operating license applications. Standard review plans, regulatory guides, and branch technical positions served this purpose. Over time, the review process shifted more and more to this "gap-bridging" guidance with the

[7]Indeed, as the Court of Appeals for the D.C. Circuit stated in connection with the Federal Communications Act, the Act which served as the model for the 1954 Atomic Energy Act, "effective regulation is premised upon the agency's ability to depend upon the representations made to it by its licensees." *LeFlore Broadcasting Company* v. *FCC*, ___ F.2d ___ (D.C. Cir., June 5, 1980).

result that the situation today is as described in the June 13 and July 23, 1980 memoranda.

(1) SRP Reviews

For plants reviewed in accordance with the SRP, the problem becomes whether compliance with the SRP establishes compliance with the regulations.[8] The staff points out that each section of the SRP typically cites one or more NRC regulations as the basis for the review requirements which follow. The NRR July 23, 1980 memorandum also contains various cross-references between NRC regulations and provisions of the SRP. However, this leaves two problems. First, citation of a particular NRC regulation in the SRP as support for the review requirement does not in itself show that the review requirement establishes compliance with the regulations. To do this the substance of both the regulation and the SRP requirement must be compared.[9] Second, the citation and cross-referencing do not show that the regulation is fully implemented. If a regulation is applicable to two different systems dealt with in two different sections of the SRP the fact that the regulation is cited in one section does not show that the regulation formed the basis for the review requirement in the SRP on the second system.

However, with very few exceptions, all of the NRC's safety regulations are a codification of the essential safety review practices current at the time the regulation was issued. NRR's July 23, 1980 memorandum states that the SRP is the "written expression by experienced staff reviewers of the factors to be considered." In effect the SRP, like most of the regulations, incorporated then current staff review practices. It can be generally stated that review practices have, over time, resulted in increasingly stringent requirements. Since both the SRP and the regulations are rooted in a review process that has generally become more stringent, it can be generally stated that the SRP includes requirements that, at a minimum, implement the NRC's regulations.

This conclusion is buttressed by the fact that many of the staff reviewers responsible for development of the regulations were also responsible for development of the SRP. This suggests that the expertise and safety approach underlying the regulations and the SRP are very similar. The conclusion is also buttressed by the fact that staff has been generally successful in establishing compliance with the regulations when an issue of compliance was raised in adjudicatory proceedings.

Finally, in NRR's July 23, 1980 memorandum the Director states that in his opinion the overall review assures compliance with Commission regulations.

These arguments are very general ones. However, we believe that, taken together, they provide a legally adequate basis for a finding that compliance with the SRP establishes compliance with the NRC safety regulations.

[8]This issue was brought to the Commission's attention in our October 23, 1979 memorandum to the Commission on "unresolved Legal Issues."

[9]In many cases the SRP cites regulatory guides as the basis for the required review. Regulatory guides are specifically intended to describe a method found acceptable by the staff for complying with one or more regulations cited in the guides. Thus in the specific technical area addressed by each regulatory guide, a review has been conducted and the solution set forth in the guide has been found to comply with the cited regulation.

(2) Non-SRP Plants

Most applications currently under review were not reviewed in accordance with the SRP in the sense that deviations from the SRP were not required to be documented and the final version of the SRP was not actually used in all aspects of the review. However, the arguments made above still generally apply. Staff has generally been successful in establishing compliance in adjudicatory proceedings. Staff review practices were in accord with the regulations when they were promulgated, and so long as review practices applied to pending applications are the same as or more stringent than review practices in effect when the regulations were issued, the review practices applied to pending applications should generally establish compliance with NRC regulations. Moreover, in many areas regulatory guides were used as a basis for review rather than the SRP. As has been noted,[10] regulatory guides have been reviewed for conformance with the regulations.

In summary, our conclusion is that the principal difficulty with the review process here is that the link between the review and the regulations is not adequately documented.

3. Recommendations for Improvement

The review process does, as stated above, establish a legally adequate basis for a Commission finding of compliance with the regulations. However, the arguments offered for this proposition are general ones. There is no documentation of the specific links between particular parts of the review process and the specific regulations themselves, although this kind of documentaton may be contained in individual safety evaluations and adjudicatory proceedings. We and OPE recommend that the review process be improved so as to provide better documentation and greater assurance that the regulations are complied with. We and OPE have three suggestions to make in this regard.

First, we recommend that the staff compare the SRP and the regulations, document that comparison, and, when and if necessary, amend either the SRP or the regulations. In this way, the Commission would be confident that all of the regulations are covered in the SRP.[11] We understand that NRR is considering just such a project and will be informing you of its plans in the near future. Second, we recommend that, where practical, applicants with pending applications be requested to state, with supporting references, that each and every applicable NRC regulation is complied with. As an alternative, once the first recommendation is carried out, applicants could be requested to list all deviations from the SRP. Third, we recommend that the review process include increased emphasis on the qualifications of applicants and applicants' contractors. This would entail special emphasis on applicants' engineering and scientific resources and strong action in response to any false or misleading information. This emphasis is important because, so long as audit reviews are conducted, substantial reliance must be placed on the accuracy and completeness of information in the application. This reliance would be misplaced if there was reason to believe that an applicant is not technically competent or is less than truthful or candid.

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[10]Note 9, *supra.*

[11]The value of this exercise in terms of increased protection of the public health and safety would be greatly enhanced if the regulations themselves were systematically reviewed and updated. This longer term project is now planned.

OPE does not recommend, as a matter of policy, that near term operating licenses be held up pending completion of these recommendations. OGC does not believe that the law requires that the recommendations be completed prior to license issuance.

One final note on a related matter. It is useful at this point to compare the requirements of the "Bingham amendment" for backfitting of plants already licensed with the requirements in the Atomic Energy Act and NRC regulations for initial licensing. Section 110 of Public Law 96-295 (the "Bingham amendment") directs the Commission "to develop, submit to the Congress, and implement, as soon as practicable after notice and opportunity for public comment, a comprehensive plan for the systematic safety evaluation of all currently operating utilization facilities required to be licensed under secton 103 or section 104(b)" of the Atomic Energy Act. Not later than 90 days from the date of enactment of P.L. 96-295 (June 30, 1980), the Commission "shall report to the Congress on the status of efforts" regarding the comprehensive plan for the systematic safety evaluation (SSE) of these facilities.

Section 110 describes what the plan must include. Among other things, subsection 110(b) directs the NRC to:

> Identify each current rule and regulation, compliance with which the NRC specifically determines to be of particular significance to protection of the public health and safety. According to the Conference Report, this "requires a detailed review by the Commission itself to identify those rules and regulations that are of particular health and safety significance for the presently operating plants. Under the language, information on plant compliance is required only for those rules and regulations. This careful selection process is intended to focus the...plan on those NRC requirements that are of particular significance in assessing the overall safety of the presently operating plants."
>
> Determine, for each presently operating plant, the extent to which the plant meets the specific rules and regulations identified by the Commission. In determining the extent of compliance, the NRC must indicate where such compliance was achieved by use of Division 1 regulatory guides, staff technical positions, or equivalent means. The Conference Report indicates that this language is an acknowledgement by the conferees that licenses can meet safety requirements in several ways.

Four things are worthy of mention here. First, as noted the Bingham amendment applies to reactors already licensed to operate, and does not apply to applications under review. There is no indication that the amendment in any way relaxes the current requirement in the Atomic Energy Act and NRC regulations that compliance be found prior to license issuance. Second, the amendment does not require review for compliance with all regulations — only those regulations that are determined to be of particular safety significance are included in the evaluation. In contrast, the general requirement that the Commission find compliance with the regulations prior to license issuance applies to all regulations. Third, the amendment and Conference Report correctly describe the subsidiary role of regulatory guides and other informal guidance. Under the Atomic Energy Act, NRC regulations, and the Bingham amendment, it is compliance with the regulations, rather than compliance with informal guidance, that is critical. Fourth, the Bingham amendment's requirement that NRC determine the extent

which the plant meets specific regulations will probably not be completely satisfied by the current review process described in the NRR memoranda. A more specific focus on compliance with each identified regulation is required.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-275 OL**
50-323 OL

PACIFIC GAS AND ELECTRIC COMPANY
(Diablo Canyon Nuclear Power Plant, Units 1 and 2)

August 7, 1980

In response to Joint Intervenors' request, the Appeal Board establishes procedures affording two ACRS consultants who testified as licensing board witnesses below an opportunity to comment on the validity of the parties' testimony in this reopened seismic proceeding.

APPEAL BOARDS: AUTHORITY TO CALL WITNESSES

An Appeal board may call ACRS consultants to testify as Board witnesses if special circumstances make this necessary to insure full exploration of issues before it.

APPEARANCES

Messrs. Bruce Norton and **Arthur C. Gehr,** Phoenix, Arizona, and **Malcom H. Furbush** and **Phillip A. Crane, Jr.,** San Francisco, California, for the applicant, Pacific Gas and Electric Company.

Mr. David S. Fleischaker, Washington, D.C., **Ms. Marion P. Johnston** and **Mr. John Phillips,** Los Angeles, California, for the Joint Intervenors, San Luis Obispo Mothers for Peace.

Messrs. Herbert H. Brown and **Lawrence C. Lanpher,** Washington, D.C., and **J. Anthony Kline** and **Byron S. Georgiou,** Sacramento, California, for the Governor of California.

Mr. William J. Olmstead for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On June 24, 1980 we granted the Joint Intervenor's motion to reopen the record to consider new seismic data generated by the October 1979 earthquake in California's Imperial Valley. ALAB-598, 11 NRC 876. We appended to that decision a series of questions involving those data pertinent to our concerns and we directed the parties to address them with testimony.

On July 18th, intervenors filed a "Request for Reconsideration of ALAB-598 or in the Alternative for Certification." They ask us to take steps "to assure that Dr. Mihailo Trifunac and Dr. Enrique Luco are provided an opportunity to comment on the questions contained in the Appendix [to ALAB-598]," or to certify their request to the Commission if we do not accede to it. Intervenors point out that these individuals testified below in effect as Board witnesses. Because Drs. Luco and Trifunac are consultants to this Commission's Advisory Committee on Reactor Safeguards (ACRS), intervenors represent that they are unwilling to accept compensation from or to become witnesses for intervenors. It is intervenors' belief that the testimony of these two individuals is essential to a full development of the record. The Governor of California shares that belief.

The staff responds with the statement that

> Drs. Trifunac and Luco are technical consultants to the Advisory Committee on Reactor Safeguards. As such, they are special government employees within the meaning of 10 CFR 0.735-4(e) and 18 USC 207. Consequently, they would be barred from appearing on behalf of Joint Intervenors or any other party to this proceeding other than the NRC. *See* 18 USC 207 and 10 CFR 0.735-26.

It adds that it is not the usual practice to have ACRS consultants testify in licensing proceedings. Nonetheless, the staff acknowledges that "this Board has the authority in the circumstances to request that the ACRS provide Drs. Luco and Trifunac for purposes of responding to the questions the Board has identified which relate to previous testimony of Drs. Luco and Trifunac." The staff further tells us that, if we request it be done, "the ACRS, in the special circumstances of this proceeding, will request Drs.

Luco and Trifunac to respond under the provisions of their current consulting agreement."

The applicant, on the other hand, objects to our calling these individuals in any circumstances. It views the intervenors' request as an attempt to nullify the ACRS' collegial independence and stresses that these two scientists hold minority views not shared by other ACRS consultants or by that Committee itself.

The applicant's views are not without cogency. For reasons we need not repeat at length, however, this is an unusual situation. (See ALAB-519, 9 NRC 42 (1979)). In their testimony below, Drs. Luco and Trifunac did address certain of the concerns we noted in ALAB-598. In particular, they discussed the magnitude of ground motion to be expected at the reactor site as a consequence of the postulated 7.5M earthquake on the Hosgri Fault as well as the extent to which the effect of the free field motion might be diminished by phenomena such as a soil structure interactions and the "tau effect." In the interest of the fullest exploration of the seismic issues at the Diablo Canyon site, we think it would be useful to have their opinions spread upon the record here, too.

We therefore grant intervenors' request that Drs. Trifunac and Luco be "provided an opportunity to comment." To accomplish this, it is our wish that Drs. Luco and Trifunac review as Board witnesses the testimony furnished by the parties and then comment on the validity of these responses within the limits of their expertise. Their comments are to be in the form of written direct testimony to be in our hands *no later than 2 September 1980.* It is not necessary that they address every question. What we seek are those witnesses' views where, in their professional judgment, they (a) disagree or agree with testimony offered by any party or (b) deem additional information necessary to clarify a point relevant to the issues in the reopened proceeding. It is our intention to have them available for cross-examination by the parties and questioning by us at the hearing on the reopened issues.

As Drs. Luco and Trifunac are consultants to the ACRS, we hereby request that Committee to make them available under the terms of their ACRS contracts to furnish the testimony we have requested. In the circumstances, we do not deem it necessary to issue formal subpoenas for these witnesses.

Accordingly, we instruct the staff

(1) To arrange with the ACRS to have Drs. Luco and Trifunac available to testify for the purposes we haved described.

(2) To furnish Drs. Luco and Trifunac each *promptly* with the testimony submitted by all parties pursuant to ALAB-598.

(3) To provide other assistance as necessary to have the testimony of Drs. Luco and Trifunac in our hands by September 2, 1980, and those individuals present to testify at the reopened hearings.

It is not our intent to have the staff act as counsel for these witnesses. Our instructions contemplate no more than facilitating their appearance. In the proceeding before the Licensing Board, we understand that the General Counsel assigned a member of his staff to Counsel Drs. Trifunac and Luco in the preparation of their written testimony and in testifying orally before that Board. We ask the General Counsel to aid us by providing similar assistance to these witnesses here, too.

Finally, all parties, witnesses and counsel are put on notice that we contemplate hearing the reopened seismic issues in San Luis Obispo, California, beginning September 23, 1980.[1]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

[1]Intervenors also asked that the United States Geological Survey "be provided an opportunity to comment independently" on the questions we posed in ALAB-598. Our decision on that portion of their request will be forthcoming in a separate 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 **Docket No. 50-376**

PUERTO RICO ELECTRIC POWER AUTHORITY
(North Coast Nuclear Plant, Unit 1)

August 11, 1980

The Appeal Board *sua sponte* directs certification of and reverses the Licensing Board's ruling in LBP-80-15, 11 NRC 765 (1980), that, absent a withdrawal by the applicant, the Licensing Board lacked the authority to dismiss or deny the construction permit application even if the applicant had abandoned any intention to build the proposed facility.

ADMINISTRATIVE TRIBUNALS: AUTHORITY TO TERMINATE PROCEEDINGS

Adjudicatory tribunals possess inherent authority to dismiss those matters placed before them which have been mooted by supervening developments.

APPEARANCES

Mr. Maurice Axelrad, Washington, D.C., for the applicant, Puerto Rico Electric Power Authority.

Mr. Gonzalo Fernos, Santurce, Puerto Rico, *pro se* and on behalf of the intervenor Citizens for the Conservation of Natural Resources, Inc.

Messrs. Edwin J. Reis and Roy P. Lessy for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

In an order entered on May 29, 1980, the Licensing Board ruled, *inter alia,* that it lacked the authority to dismiss or deny a construction permit application pending before it even if it should clearly appear that the applicant had abandoned any intention to build the facility in question. LBP-80-15, 11 NRC 765. Its reasoning was that:

> In light of Section 189 of the Atomic Energy Act of 1954, as amended, 42 USC 2239, and the Commission's regulations, 10 CFR 2.104, which mandate hearings on applications for construction of nuclear power plants, there is no procedure (short of withdrawal by the Applicant) for a Board's disposition of such an application without a hearing on health, safety and environmental issues.

Id. at 767.[1]

On our own initiative, we direct certification of that ruling under 10 CFR 2.718(i) and reverse it. Having heard from the parties on the matter, we adhere to the conclusions tentatively reached in an unpublished order entered on June 4, 1980:

> It is true, of course, that neither the Atomic Energy Act nor the Rules of Practice specifically establish a procedure for dismissing (or denying) a construction permit application on the ground that the applicant has clearly abandoned its purpose to build the facility in question. It scarcely perforce follows, however, that a licensing board is required to retain on its docket in perpetuity an application which has become entirely academic. In this connection, we find nothing in Section 189 of the Act or Section 2.104 of the Rules of Practice which might support such a curious result. To be sure, those Sections may preclude the *grant* of a construction permit application without some hearing of the "health, safety and environmental issues" which either must be routinely considered as a matter of law or have been properly raised by a party to the proceeding. But their terms are devoid of anything which immediately suggests to us an intended limitation upon the inherent authority of adjudicatory tribunals to dismiss those matters placed before them which have been mooted by supervening developments.

We there added by way of footnote:

[1]A similar statement had appeared, albeit in a different context, in *Boston Edison Company* (Pilgrim Nuclear Generating Station, Unit 2), LBP-75-15, 1 NRC 419, 420 (1975). Although the Board below did not cite *Pilgrim,* its attention had been directed to it by both the applicant and the NRC staff. Both of those parties have now either explicitly or tacitly withdrawn their reliance on *Pilgrim* in this proceeding.

At first impression, Section 2.749(d) of the Rules of Practice, 10 CFR 2.749(d), would not appear to bar the dismissal of a moot proceeding. Rather, the only limitation on a licensing board's summary disposition authority is that it "may not be used to determine the ultimate issue as to whether the permit shall be issued." A dismissal for mootness — not involving a consideration of the merits of the application — would not seem to be within the intended purview of that limitation.

The cause is *remanded* to the Licensing Board for further proceedings in conformity with this opinion. In this connection, we intimate no views regarding whether, as the intervenors maintained below, the applicant has in fact abandoned any intention to build the North Coast facility. Nor do we now concern ourselves with whether it will be necessary to conduct an evidentiary hearing in order to reach an informed judgment on the abandonment question. Both of those matters are for the Licensing Board to decide in the first instance.[2]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

[2]In their July 18, 1980 submission to us (at pp. 7-8), the intervenors ask that we give certain procedural instructions to the Licensing Board. We decline to do so. Whether they are entitled to the relief which is sought on that score also is more appropriately left to the Board below.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Dr. W. Reed Johnson

In the Matter of **Docket No. 27-39**

NUCLEAR ENGINEERING COMPANY, INC.
(Sheffield, Illinois, Low-Level Radioactive Waste Disposal Site)

August 12, 1980

The Appeal Board affirms the Licensing Board's May 3, 1979 order granting the applicant's request for dismissal of its application for permission to expand the size of its low-level radioactive waste burial site.

RULES OF PRACTICE: APPELLATE PROCEDURE

As in the federal courts, the test of "finality" for appeal purposes before the Nuclear Regulatory Commission is essentially a practical one. As a general matter, a licensing board's action is final for appellate purposes where it either disposes of at least a major segment of the case or terminates a party's right to participate; rulings which do neither are interlocutory. *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 758 (1975).

RULES OF PRACTICE: TIME LIMITS FOR FILING EXCEPTIONS

The time limits established by the Commission's Rules of Practice with regard to appeals from Licensing Board decisions and orders, although not jurisdictional, are strictly enforced as a matter of general policy.

NEPA: "FEDERAL ACTION"

Dismissal of a licensee's application to expand its licensed facilities does not constitute a "major federal action significantly affecting the quality of the human environment" within the meaning of Section 102(2)(C) of NEPA, 42 USC 4332(2)(C). Accordingly, the preparation of an environmental impact statement is not a condition precedent to the dismissal.

APPEARANCES

Mr. John M. Cannon and **Ms. Susan W. Wanat,** Chicago, Illinois, for the appellant, Chicago Section, American Nuclear Society. Attorney General of the State of Illinois **William J. Scott** and Assistant Attorneys General **Susan N. Sekuler** and **Mary Jo Murray,** Chicago, Illinois, for the intervenor, State of Illinois.

Mr. Roy P. Lessy for the Nuclear Regulatory Commission Staff.

DECISION

Several years ago, the Nuclear Engineering Company (NECO) filed an application for renewal and amendment of its existing license to operate a low-level radioactive waste burial site near Sheffield, Illinois. The sought amendment would have, *inter alia,* allowed the applicant to increase the size of the site from 20.45 acres to 188.45 acres. In the wake of a number of successful petitions for leave to intervene and requests for a hearing, a notice of hearing was issued by the Licensing Board in March 1978.

A year later, on March 8, 1979, the applicant notified the Board that it had just informed the Director of the Commission's Office of Nuclear Material Safety and Safeguards (NMSS) that it was withdrawing its application for license renewal and site expansion. The applicant further indicated that it was terminating immediately "its license for activities at Sheffield." Attached to the notice was a proposed order dismissing the adjudicatory proceeding.

Treating the notice as a motion under 10 CFR 2.730, the Board called for responses from the other parties. On March 20, 1979, the NRC staff filed its answer. Although acquiescing in the abandonment of the application insofar as it sought approval of an expansion of the Sheffield site, the staff registered its objection to the applicant's "attempt to withdraw the license application for the 20-acres where waste is already buried." According to the staff, the applicant had a continuing responsibility under the terms of its existing license and NRC regulations to safeguard properly

the buried waste and that responsibility could not be shed by seeking to terminate the license renewal proceeding.[1] In line with this position, on the same day the NMSS Director issued an immediately effective show cause order directing the applicant to resume its responsibilities under the existing license. Thereafter, on April 10, 1979 (following oral argument on the matter on March 27), the staff submitted to the Board a list of proposed conditions precedent to the dismissal of the proceeding.

On May 3, 1979, the Licensing Board entered an unpublished order in which it dismissed so much of the application as pertained to the expansion of the site. The Board declined, however, either to permit the applicant to withdraw its application for license renewal or to dismiss the proceeding. In this connection, the Board pointed out that both the staff's request that conditions be imposed upon such dismissal and the related show cause order would require evidentiary hearings. (One month later, on June 6, the Commission ordered a hearing on the show cause order before the same Licensing Board).

No endeavor was made to appeal from any portion of the May 3 order. On January 24, 1980, however, intervenor Chicago Section, American Nuclear Society, moved the Licensing Board "to declare as final" that portion of the May 3 order "terminating application for site expansion at the Sheffield...site if said Order did, as a practical matter, finally dispose of that portion of the case." On May 7, the Board entered an unpublished order in which it dealt principally with another motion which had been filed by the Chicago Section.[2] At the end of that order, the Board took note of the January 24 motion and responded to it as follows:

> The May 3, 1979 ruling granting Applicant's motion to withdraw its application to expand the Sheffield site was indeed final as of that date as far as this board was concerned, since it disposed of a major segment of the case. However, it is for the Appeal Board or the Commission to decide whether to hear an appeal. *See Toledo Edison Company, et al.* (Davis-Besse) *and Cleveland Electric Illuminating Company, et al.* (Perry Units 1 and 2), ALAB-300, 2 NRC 752, 758 (1975).
>
> Consequently, Chicago Section's motion to declare as final the board's May 3, 1979 decision and order is granted to the extent stated above.

Founding its right to do so upon the May 7, 1980 order, the Chicago Section now seeks to challenge the May 3, 1979 order. Reasoning that its effect was to terminate all future operations at the Sheffield site, the Chicago Section claims that the 1979 order had to be preceded by an

[1]The staff's view was subsequently endorsed in a March 24, 1979 filing by the intervenor, State of Illinois.

[2]See fn. 3, *infra.*

environmental impact statement and the consideration of alternatives to such termination.[3] Both the staff and the intervenor State of Illinois oppose the appeal on the principal grounds (1) that it is untimely;[4] and (2) that it lacks merit.[5] For its part, NECO did not file a brief.

II

At the outset, we are confronted with the question of the timeliness of the appeal. Both Illinois and the staff maintain that, insofar as it dismissed that portion of the NECO application as pertained to expansion of the burial site, the May *1979* order was final and subject to appeal within ten days under 10 CFR 2.762. In response, the Chicago Section asserts that that order was wholly interlocutory and did not achieve any degree of finality for appellate purposes until the issuance of the May *1980* order.[6] It presses this assertion in the face of the Licensing Board's observation in the May *1980* order that it deemed the partial dismissal of the NECO application to have constituted final action at the time taken because "it disposed of a major segment of the case." See p. 158, *supra.* [7]

[3]On August 24, 1979, the Chicago Section had moved the Licensing Board for an order compelling the staff "to file a draft environmental impact statement" and "to study, develop and describe alternatives to suspension of operations at Sheffield." That motion had been denied on December 3, 1979. The ground assigned was that the Board had no authority to require either (1) that the staff prepare an environmental impact statement prior to a ruling on the motion to withdraw the application or (2) that the applicant or anyone else operate the burial site "simply because it may be an environmentally preferable course of action." On December 21, 1979, the Chicago Section sought to have that ruling reconsidered or certified to the Commission. The May 7, 1980 order denied that relief.

[4]On May 27, 1980, Illinois moved to strike the Chicago Section's exception to the May 1979 order as untimely. By order of May 30, we directed that the timeliness question be briefed by the parties along with the merits of the appeal. This was done.

[5]Although those parties also raise other points in urging affirmance, we need not and do not reach them.

[6]In addition, the Chicago Section argues that the May *1979* order was not appealable under 10 CFR 2.762 because it did not qualify as an "initial decision." That argument obviously proves too much. Nothing in the May *1980* order converted the May *1979* order into an initial decision. Thus, if the latter order was not subject to appeal when rendered because not an initial decision, it still is nonappealable. We need not pursue the matter any further, however, because the Chicago Section's premise is incorrect; *i.e.,* under Commission practice, an appeal may be taken from final orders of the Licensing Board whether or not embodied in an initial decision. See, *e.g., Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-76-1, 3 NRC 73, 74 (1976); *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-122, 6 AEC 322 (1973); *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-331, 3 NRC 771, 774 (1976). See also, discussion at p. 160, *infra.*

[7]In the circumstances, we need not decide what would have been the operative effect of that order had the Licensing Board reached a different conclusion therein respecting the time at which its prior order had acquired finality.

In light of our 1975 decision in the *Davis-Besse* antitrust proceeding,[8] the Board below was clearly correct in this appraisal of the situation. There, we were called upon to determine the appealability as a matter of right of certain discovery rulings made below. Concluding that the answer turned upon whether the rulings amounted to a "final decision," we held

> The test of "finality" for appeal purposes before this agency (as in the courts) is essentially a practical one. As a general matter, a licensing board's action is final for appellate purposes where it either disposes of at least a major segment of the case or terminates a party's right to participate; rulings which do neither are interlocutory.

2 NRC at 758 (footnotes omitted). It cannot, of course, be seriously disputed that the portion of the May *1979* order here under attack did (as the Board below noted) dispose of a very major segment of the present proceeding.[9] Nor did the Board leave room for the slightest doubt that that order represented its ultimate word on the subject of the proposed expansion of the burial site.

III

Although the time limits established by the Rules of Practice with regard to appeals from Licensing Board decisions and orders are not jurisdictional, our general policy has been to enforce them strictly. See *Iowa Electric Light and Power Company* (Duane Arnold Energy Center), ALAB-108, 6 AEC 195 (1973). Without implying an alteration in that policy, we nevertheless lay to one side the untimeliness of the appeal in this instance. Giving Chicago Section the benefit of all reasonable doubt, it appears that the lateness likely was not occasioned by a lack of diligence but, rather, stemmed from an unfortunate misapprehension respecting the immediate appealability of the portion of the May 1979 order in question. Granted, had *Davis-Besse,* ALAB-300, *supra,* been consulted, Chicago Section would (or at least should) have detected the error in its thinking. We see no compelling necessity, however, to visit the heavy penalty of appeal dismissal for the failure of its counsel to have uncovered that decision. In this connection, none of the other parties to the proceeding has asserted that it would be materially prejudiced by our consideration of the merits of the May 1979 order at this late date.

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[8] *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752. As seen, at p. 158, *supra,* the Board was quite aware of that decision.

[9] Indeed, in its argument on the merits, the Chicago Section not merely recognizes but appears to emphasize that fact. At p. 161, *infra.*

Accordingly, we shall now move on to examine the Chicago Section's claim that the portion of NECO's application which sought authorization to expand the Sheffield burial site could not be dismissed without the prior preparation of an environmental impact statement and the evaluation of alternatives. That examination compels the conclusion that the claim is insubstantial.

1. As previously mentioned, central to the Chicago Section's position is its premise that, unless the Sheffield burial site is enlarged, "operations" at that site will have been "effectively terminated." By this, we understand the Chicago Section to have in mind that the existing site will not accommodate any further low-level nuclear wastes. Thus, absent site expansion, "the Sheffield operation [is] converted from an active low-level nuclear waste disposal site to a collection and distribution center where such waste is assembled and shipped to other licensed disposal facilities" in far-removed areas of the United States.[10]

From this premise, the Chicago Section proceeds to the conclusion[11] that the dismissal of NECO's application (to the extent it sought authorization to expand the burial site) constituted a "major Federal action significantly affecting the quality of the human environment" within the meaning of Section 102(2)(C) of the National Environmental Policy Act, 42 USC 4332(2)(C). That action is said to be "the abandonment" of the Sheffield "project." Accordingly, we are told, the preparation of an environmental impact statement was a condition precedent to the dismissal.

2. There is a fundamental difficulty with this thesis. The Chicago Section has gone astray in its characterization of the nature and effect of the Licensing Board's action. The May 1979 order did not, of course, allow NECO to "abandon" the 20.45 acre burial site currently under license. To the contrary, the Board expressly denied NECO's motion to withdraw its application for renewal of its existing license. Moreover, whether (and, if so, on what conditions) NECO will be allowed to abjure further responsibility for the licensed site remains to be adjudicated.

It well may be that, as matters now stand, no additional low-level radioactive wastes will or could be stored at Sheffield and that such wastes therefore will have to be transported to alternate, distant burial sites. But whatever environmental consequences may flow from that reality are not attributable to Federal action within the contemplation of NEPA. Although the Chicago Section does not say so explicitly, it seemingly assumes that this Commission has the statutory authority to compel NECO to expand its

[10]Br. at pp. 3-4.
[11]*Id.* at pp. 4-6.

burial site and then to receive and store additional waste materials. We know of no such authority and Chicago Section has pointed to none.[12] As we see it, in this respect NECO is in a no different position than an electric utility in possession of an operating license for a single-unit nuclear power facility. Surely, it could not be prevented from withdrawing an application for a permit to construct a second unit unless and until the alternatives to building that unit (*e.g.*, the substitution for it of a fossil-fuel plant) had received a NEPA assessment.

In view of these considerations, Chicago Section's heavy reliance[13] upon *City of New York* v. *United States,* 337 F. Supp. 150 (E.D.N.Y. 1972), is misplaced. That case involved the grant by the Interstate Commerce Commission of the application of a terminal railroad for permission to abandon its entire *existing* line in the New York City area. Such permission was required by reason of the provision of Section 1(18) of the Interstate Commerce Act, 49 USC 1(18), to the effect that no rail carrier subject to that Act "shall abandon all or any portion of a line of railroad, or the operation thereof, unless and until there shall first have been obtained from the [ICC] a certificate that the present or future public convenience and necessity permit of such abandonment." It was in this context that the court held the approval of the abandonment application to be a major Federal action subject to NEPA's commands (and, indeed, the ICC did not contend otherwise).[14] We need add only that there is nothing in the *City of New York* opinion which even remotely suggests that the court would have similarly viewed an ICC order which had done no more than to allow a railroad to exercise its right to withdraw an application seeking authorization to *expand* its existing facilities.[15]

In sum, all that the Licensing Board did was to allow NECO to pull back the portion of its application which looked to the receipt of authorization to engage voluntarily in activities (*i.e.*, the storage of radioactive wastes on an additional 168 acres) which at present it is not licensed to undertake. This Commission could not have forced NECO to seek such authorization (let alone to conduct such activities); hence, it cannot insist that NECO prosecute that portion of the application any further. Far from being a major Federal action depending for its validity upon the results of a prior NEPA appraisal of its consequences, the May 1979 order thus was

[12]We do not mean to suggest that the Commission may not compel one of its licensees to take additional steps where necessary to protect the public health and safety from the direct consequences of licensed operations. The Chicago Section does not claim, of course, that the expansion of the burial site might be such a step.

[13]Br. at pp. 7-8.

[14]See 337 F. Supp. at pp. 158-59.

[15]Suffice it to say that none of the other judicial decisions cited by the Chicago Section involved a situation even remotely analogous to that in the case before us.

essentially ministerial in character. It accorded relief which could be withheld from NECO neither as a legal nor as a practical matter, irrespective of how the Chicago Section or anyone else might regard the desirability of an expansion of the Sheffield site to permit further waste storage thereon. Consequently, no environmental impact statement was required. *NAACP* v. *Wilmington Medical Center, Inc.*, 436 F. Supp. 1194, 1202 (D. Del. 1977), *affirmed*, 584 F.2d 619 (3rd Cir. 1978).[16]

Insofar as it dismissed that portion of the NECO application which sought authorization to expand the Sheffield burial site, the Licensing Board's May 3, 1979 order is *affirmed.* [17]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

The concurring opinion of Dr. Johnson follows, at 164, *infra.*

[16]For these reasons, it also follows that there is no merit to Chicago Section's further argument (Br. at 8) that, even if the preparation of an environmental impact statement was not necessary, the Commission has violated its statutory obligation to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." Section 102(2)(E) of NEPA, 42 USC 4332(2)(E). Once NECO had elected (as was its right) to withdraw its request for authorization to expand the burial site, there was no longer a proposal for such expansion before the agency.

[17]Needless to say, nothing we have said in this opinion implies any belief as to NECO's continuing obligations with regard to the previously-licensed site. That matter is not now before us.

Concurring Opinion of Dr. Johnson:

I agree that granting NECO's motion to withdraw its application for permission to expand the Sheffield site was not a major Federal action for NEPA purposes, and for this reason I join in the Board's opinion. In doing so, however, I must record my belief that this outcome has disturbing elements. While the decision of NECO to withdraw its application was voluntary in a strict legal sense, there is room to conclude that this step was at least indirectly a result of NRC staff actions.[1] The record of this proceeding indicates that NECO's decision was prompted in part by the imposition of requirements by the NRC staff which seriously impaired the economic feasibility of the proposed site expansion.

It is axiomatic that the NRC must adopt and impose those criteria for the siting and operation of low level waste disposal facilities which are necessary to assure reasonable protection of the public health and safety. But that process cannot be dealt with in the abstract. Radioactive waste products will continue to be generated in Illinois. If they cannot be interred at Sheffield, an alternative is that they be trucked elsewhere for disposal. That, too, is hazardous. Obviously then, both licensing and not licensing Sheffield's expansion have consequences for the public health and safety. The choice cannot be avoided. If the requirements for siting and operating waste disposal facilities are so stringent as to rule out the economical operation of such facilities, this simply forces selection of alternative waste disposal methods with their attendant hazards and environmental impacts.

I am not able to say what waste disposal alternative would be preferable. But NEPA compels such considerations to be taken into account. It is apparent on this record, however, that no thoughtful assessment was made by the staff respecting the consequences of the requirements it imposed on NECO. This is a manifestly serious omission and it deserves the Commission's attention and corrective action for future cases.

My colleagues have authorized me to state that they are in general agreement with the views expressed in the first two paragraphs of the foregoing opinion. They are not prepared, however, to go so far as to say that it is apparent on the record before us that the staff failed to make a thoughtful assessment of the consequences of the requirements it imposed on NECO's site expansion proposal. In their judgment, the most that can be said is that the record does not affirmatively establish that such an assessment was made.

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[1]See for instance the letter of James N. Neel (President of NECO) to William J. Dircks (Director of the Office of Nuclear Material Safety and Safeguards), dated December 27, 1978.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-275 OL**
50-323 OL

PACIFIC GAS AND ELECTRIC COMPANY
(Diablo Canyon Nuclear Power Plant, Units 1 and 2)

August 19, 1980

The Appeal Board denies that part of intervenors' motion requesting that members of the United States Geologic Survey be provided an opportunity to comment independently on questions appended to ALAB-598 and instructs the staff to submit certain testimony in advance of the hearing in this proceeding.

APPEARANCES

Messrs. Bruce Norton and **Arthur C. Gehr,** Phoenix, Arizona, and **Malcom H. Furbush** and **Philip A. Crane, Jr.,** San Francisco, California, for the applicant, Pacific Gas and Electric Company.

Mr. David S. Fleischaker, Washington, D.C., **Ms. Marion P. Johnston** and **Mr. John Phillips,** Los Angeles, California, for the Joint Intervenors, San Luis Obispo Mothers for Peace.

Messrs. Herbert H. Brown and **Lawrence C. Lanpher,** Washington, D.C., and **J. Anthony Kline** and **Byron S. Georgiou,** Sacramento, California, for the Governor of California.

Mr. William J. Olmstead for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

1. Joint Intervenors' motion to reconsider ALAB-598 (in which we ordered the record reopened for additional seismic evidence)[1] asked us to call two ACRS consultants as Board witnesses, a request we granted.[2] Their motion also asked that the "United States Geological Survey...be provided an opportunity to comment independently on [the] questions" we appended to ALAB-598.[3] The Governor of California supported the request; the applicant and the staff opposed it. We withheld a ruling until we had opportunity to review the parties' responses to ALAB-598.

2. The USGS served as a seismic consultant to the staff in the Licensing Board proceeding; the staff called Geological Survey personnel as its witnesses and offered them for cross-examination. Neither the intervenors nor the Governor offer the slightest basis for believing that the views of the USGS — or any of its personnel — might shift were we rather than the staff to call upon that agency for responses to our questions. We have no cause ourselves to believe such would be the case. In these circumstances we deny intervenors' request and decline to certify it to the Commission.

3. The staff's responses to the questions posed in ALAB-598 do not include the testimony of any USGS witnesses. However, in answer to question 9 in ALAB-598, the staff has supplied the written direct testimony of Richard M. McMullen, a NRC geologist. Mr. McMullen's testimony contains the statement (at p. 5) that

> The LNG report (USGS, 1980) is another piece of evidence favoring the occurrence of the subject earthquake on structures other than the Hosgri [fault].

Attached to Mr. McMullen's testimony is a July 29, 1980 letter from Robert H. Morris, an Acting Assistant Director of the USGS, to Dr. Robert E. Jackson of the staff. That letter states that Mr. McMullen's testimony accurately depicts USGS' position and that this has not changed since the Licensing Board hearing. Mr. Morris' letter also states, however, that

> The geology and seismology reports which the USGS reviewed for the Point Conception LNG Site *do* include data not on record for the Diablo Canyon Nuclear Power Station because the LNG review was undertaken after transmittal to the NRC of our Diablo Canyon position, dated April 29, 1976 (emphasis added).

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[1] 11 NRC 876 (June 24, 1980).
[2] ALAB-604, 12 NRC 149 (August 7, 1980).
[3] See 11 NRC at pp. 888-892.

The letter further indicates that, "even though" the USGS has obtained some additional data on the subject, there "still remain ambiguities in the location of the November 4, 1927 earthquake" which require the conservative assumption that the Hosgri fault (among others) be considered the site of that seismic disturbance.

In the interest of a complete record, the staff shall submit written testimony from a knowledgeable witness describing the USGS' new data bearing on the location of that 1927 earthquake and the nature of "ambiguities" that remain about where that earthquake occurred. That testimony is to be *in the hands of all parties, Drs. Trifunac and Luco, and this Board* no later than September 15, 1980; its sponsor shall be made available for questioning at the reopened hearing in San Luis Obispo, California, should we so direct.

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
Thomas S. Moore

In the Matters of **Docket No. 50-498A**
50-499A

HOUSTON LIGHTING AND POWER COMPANY, *et al.*
(South Texas Project, Units 1 and 2) **Docket No. 50-445A**
50-446A

TEXAS UTILITIES GENERATING COMPANY, *et al.*
(Comanche Peak Steam Electric Station, Units 1 and 2) **August 22, 1980**

The Appeal Board denies a petition for directed certification seeking review of a discovery ruling by the Licensing Board.

RULES OF PRACTICE: CERTIFICATION

As a general rule, appeal boards will not exercise their discretionary authority to review interlocutory orders dealing with discovery matters. *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 768-69 (1975).

RULES OF PRACTICE: CERTIFICATION

Appeal boards will ordinarily grant petitions for certification in order to undertake 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. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

APPEARANCES

Messrs. Joseph B. Knotts, Jr., and **C. Dennis Ahearn,** Washington, D.C., for the Texas Utilities Generating Company.

Messrs. J. A. Bouknight, Jr., and **Douglas G. Green,** Washington, D.C., for the Houston Lighting and Power Company.

Mr. David M. Stahl, Washington, D.C., for Central and South West Corporation, *et al.*

Ms. Susan Braden Cyphert and **Messrs. David A. Dopsovic** and **Kenneth M. Glazier** for the United States Department of Justice.

Messrs. Joseph Rutberg, Frederic D. Chanania and **Michael B. Blume** and **Ms. Ann P. Hodgdon** for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Before us are three renewed petitions for directed certification,[1] seeking review of a March 7, 1980 oral ruling in this antitrust proceeding involving the South Texas and Comanche Peak nuclear facilities. The ruling granted

[1]Filed by, respectively, Texas Utilities Generating Company; Houston Lighting and Power Company; Central and South West Corporation, *et al.*

a joint motion of the Department of Justice and the NRC staff to compel the production of certain documents in the petitioners' possession.[2]
The petitions are *denied* for the following reasons:

1. As a general matter, discovery rulings of licensing boards are not promising candidates for the exercise of our discretionary authority to review interlocutory orders. *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-300, 2 NRC 752, 768-69 (1975); see also, *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-318, 3 NRC 186, 187 (1976).

2. "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." *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977) (footnote omitted). The ruling in question here does not meet either of these tests. Obviously, it affects the basic structure of the proceeding not at all. Insofar as the threat of irreparable injury to the petitioners is concerned, suffice it to say that the ruling does not go to the matter of the admissibility into evidence of the documents covered by it. Should the Licensing Board ultimately allow the introduction of one or more of those documents over their objection, the petitioners will have the

[2]The directed certification petitions were initially filed shortly after the oral ruling had issued. On March 27, 1980, we heard argument on them. Thereafter, we announced that action on the petitions was being deferred by reason of the then pendency of negotiations among the parties looking to the possible settlement if the underlying antitrust dispute (which, if fully successful, would have served to moot the discovery controversy).

On July 16, 1980, the Licensing Board advised us by memorandum that it wished to reconsider its March 7 ruling. To accommodate this desire, in an unpublished July 18 order we denied the directed certification petitions without prejudice to their resubmission following the Licensing Board's determination on reconsideration. On August 8, that Board held a prehearing conference at which counsel were heard on the matter. On August 13, it entered an order in which it adhered to the prior discovery ruling. The directed certification petitions were thereupon renewed.

Although settlement negotiations appear to remain in progress, we have concluded that it is best to rule upon the petitions without further delay. While the negotiations to date have been fruitful, the possibility exists that they will not produce agreement on all outstanding issues and that, therefore, an evidentiary hearing on some matters will be required. Under the terms of the Licensing Board's August 13 order, that hearing will commence on November 5, 1980 and summaries of the testimony to be adduced will be due three weeks earlier. In those circumstances, the discovery controversy is now deserving of prompt resolution.

right to complain of that action in connection with any appeal which they might take from the ensuing initial decision.[3]

3. Without passing ultimate judgment on the merits of the ruling below, a preliminary consideration of the arguments of the petitioners leaves us unpersuaded that it was so plainly erroneous that our intercession is required in order to avoid the possible working of a manifest injustice upon the petitioners.

It is so ORDERED.[4]

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

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[3]In its August 13, 1980 order (at p. 3), the Licensing Board stated that the documents "may be the subject of a protective order upon an appropriate showing of a need for confidentiality, including *in camera* inspection if requested...."

[4]By reason of the denial of the renewed petitions, the stay of the effectiveness of the March 7 oral discovery ruling is terminated. See our unpublished August 14, 1980 memorandum at p. 2.

Michael C. Farrar was previously a member of this Board and participated in the initial consideration of the petitions as well as in our July 18, 1980 order (see fn. 2, *supra*). Effective August 16, 1980 (prior to the renewal of the petitions on August 19), Mr. Farrar resigned his position as a permanent legal member of the Appeal Board and simultaneously withdrew from all but one of the appeal boards to which he was then assigned. The parties were advised on August 14 that Mr. Farrar would no longer serve on the Appeal Board for this proceeding and that, if renewed, the petitions would be ruled upon by the remaining members of the Board under the quorum rule. No objection to this procedure was recorded. In the event that subsequent Licensing Board action in the proceeding should come before this Board for review, another Appeal Board member will be designated to serve in Mr. Farrar's stead.

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 No. 50-466 CP**

HOUSTON LIGHTING AND POWER COMPANY (Allens Creek Nuclear Generating Station, Unit 1)

August 25, 1980

The Appeal Board dismisses an appeal of the Licensing Board's ruling on certain discovery requests as impermissibly interlocutory.

APPEARANCES

Dr. David Marrack, Bellaire, Texas, appellant *pro se.*

MEMORANDUM AND ORDER

By a filing dated August 18, 1980, intervenor David Marrack endeavors to appeal from a portion of the Licensing Board's unpublished June 27, 1980 order in this construction permit proceeding. Recognizing that almost two months have elapsed since the entry of that order, Dr. Marrack represents that the appeal was not more seasonably prosecuted because he had failed to receive the copy of the order which had been served upon him by the Docketing and Service Branch of the Commission on June 30, 1980. (We are told that he had obtained the order from applicant's counsel earlier this month).

The principal difficulty with the appeal is not that it is late but, rather, that it is impermissible. The June 27 order was entirely interlocutory in character; insofar as here relevant, it dealt with certain discovery requests

directed to the applicant by Dr. Marrack and another intervenor. As such, under the plain terms of the Commission's Rules of Practice,[1] it is not subject to appeal prior to the rendition of the Licensing Board's initial decision. See 10 CFR 2.730(f).[2]

Appeal *dismissed.*

It is so ORDERED.

FOR THE APPEAL BOARD[3]

C. Jean Bishop
Secretary to the Appeal Board

[1]We take this occasion to stress anew the imperative necessity that *all* participants in NRC adjudicatory proceedings — whether lawyers or laymen representing themselves or organizations to which they belong — familiarize themselves at the outset with those Rules. By doing so, participants will both (1) enhance their ability to protect adequately the rights of those they represent; and (2) avoid the waste of time and resources which inevitably accompanies the taking of action forbidden by the Rules.

[2]Notwithstanding Section 2.730(f), we have the authority to review interlocutory orders of licensing boards as a matter of discretion. 10 CFR 2.718(i); *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975). As very recently reemphasized, however, our general policy is not to exercise that discretion in connection with discovery controversies. *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), ALAB-608, 12 NRC 168 (August 22, 1980). No reason to depart from that policy is apparent in this instance.

[3]Michael C. Farrar was previously a member of this Board. Effective August 16, 1980, he resigned his position as a permanent legal member of the Appeal Board and simultaneously withdrew from all but one of the Appeal Boards to which he was then assigned. Accordingly, this matter was ruled upon by the remaining members of the Board under the quorum rule. At an appropriate date, another Appeal Board member will be designated to serve on the Board in Mr. Farrar's stead.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman

In the Matter of **Docket No. 50-329A**
50-330A

CONSUMERS POWER COMPANY
(Midland Plant, Units 1 and 2)

August 26, 1980

The Appeal Board announces that it will not undertake *sua sponte* review of the Licensing Board's approval (LBP-80-21) of the settlement reached by the parties in this antitrust proceeding.

RULES OF PRACTICE: APPELLATE REVIEW (ANTITRUST PROCEEDINGS)

Absent extraordinary circumstances, appeal boards will not scrutinize the resolution of the purely economic issues posed in an antitrust proceeding unless one of the litigants is sufficiently dissatisfied with that resolution to file an appeal. *Louisiana Power and Light Company* (Waterford Steam Generating Station, Unit No. 3), ALAB-258, 1 NRC 45, 48 fn. 6 (1975).

MEMORANDUM AND ORDER

On August 4, 1980, the Licensing Board entered an order[1] in which it approved the settlement reached by the applicant and the intervenors of the issues remanded by us to that Board in ALAB-452, 6 NRC 892, 1098-1100 (1977). Because the settlement had the endorsement of both the Depart-

[1]LBP-80-21, 12 NRC 177.

ment of Justice and the NRC staff, understandably no exceptions have been taken to the August 4 order.

1. "Absent extraordinary circumstances," we do not "scrutinize the resolution of the purely economic issues posed in an antitrust proceeding unless one of the lititgants is sufficiently dissatisfied with that resolution to bring it before us." *Louisiana Power and Light Company* (Waterford Steam Generating Station, Unit No. 3), ALAB-258, 1 NRC 45, 48 fn. 6 (1975). No such extraordinary circumstances appear here. Accordingly, the August 4 order will not be reviewed *sua sponte* by this Board.

2. We wish to commend both the parties and the Board below for thus bringing this protracted litigation to an end without the necessity of still further time-consuming and expensive evidentiary hearings on the question of appropriate relief. It is obviously far preferable for parties to reach a settlement of such questions through arms-length negotiations than it is to compel the adjudicatory tribunal to devise a remedy of its own — which might prove to be wholly satisfactory to none of the litigants. In this instance, these considerations were quite apparently recognized by all concerned: (1) by the applicant and the intervenors in promptly embarking upon good-faith settlement negotiations in the wake of ALAB-452 and in spending the time and effort necessary to bring them to a successful conclusion; (2) by the Department of Justice and the NRC staff in the discharge of their weighty responsibility of reviewing the proposed settlement carefully to insure that it was consistent with the public interest; and (3) by the Licensing Board itself in encouraging the parties' endeavors and then fulfilling its role as the ultimate arbiter of the acceptability of the settlement. Parties to other antitrust proceedings before this agency might profitably seek to follow this example.

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 BOARD

Hugh K. Clark, Esquire, Chairman
Marshall E. Miller, Esquire
Dr. J. Venn Leeds, Jr.

In the Matter of **Docket No. 50-329A**
50-330A

CONSUMERS POWER COMPANY
(Midland Plant, Units 1 and 2)

August 4, 1980

The Licensing Board approves the proposed license conditions contained in a settlement agreement between the applicant and the intervenors in this antitrust proceeding, orders that the proposed license conditions be incorporated into the construction permits for the facility, and terminates the proceeding.

MEMORANDUM AND ORDER

On January 13, 1969, the Consumers Power Company (Consumers) filed an application for the licensing of two pressurized-water nuclear power reactors, designated as Midland Plant, Units one and two, to be located on Consumers' site on the south side of the Tittabawassee River, in Midland Township, Midland County, Michigan. After review of matters related to siting, safety and environment, Construction Permits CPPR 81 and CPPR 82 were issued on December 15, 1972, and subsequently amended on May 23, 1973.

The license application was filed before 105c of the Atomic Energy Act of 1954 was amended to require prelicensing antitrust review. Under 105c(8), the "grandfather clause," construction permits were issued subject to appropriate action as a result of this subsequent antitrust proceeding.

The parties to this proceeding are Consumers, the United States Nuclear Regulatory Commission Staff (Staff), the United States Department of Justice (Justice) and a group of intervenors (Intervenors). The Intervenors include the following parties: the Cities of Coldwater, Grand Haven,

Holland, Traverse City and Zeeland, the Northern Michigan Electric Cooperative, Inc., and the Michigan Municipal Electric Association.

In its decision dated December 30, 1977, the Atomic Safety and Licensing Appeal Board found "...it reasonably probable that Consumers' activities under the Midland Licenses would maintain the present situation inconsistent with the antitrust laws," ALAB-452, 6 NRC 892 at 1098. This case was remanded to the Atomic Safety and Licensing Board (Board) for formulation of License Conditions to alleviate the concerns entailed in that finding.

At a prehearing conference on March 2, 1978, the Board urged the parties to meet forthwith to discuss whether there was a reasonable probability of settlement of the issues in the remand proceedings. The parties met promptly and began serious negotiations looking toward a settlement of all issues. The Intervenors and Consumers desired to settle not only the proposed License Conditions but all other matters between them. The Board foresaw that the negotiations would take many months, and was reluctant to permit suspension of its proceedings, but with the advice of the Appeal Board, ALAB-468, 9 NRC 436 (1979), hearings were suspended pending such negotiation.

At a preliminary meeting among counsel for all parties, Justice and Staff presented to Consumers and Intervenors proposed License Conditions which would be acceptable to Justice and Staff as a basis for settlement. Progress reports from Consumers and Intervenors have been made periodically to the Board. After extensive negotiations, Consumers and Intervenors reached agreement on proposed License Conditions and on a supplemental agreement between these parties for implementation of the conditions and other matters concerning relationships between them. Both the proposed License Conditions and the supplemental agreement were submitted to the Staff and to Justice for review.

By letter dated September 6, 1979, the Staff advised the Board that the proposed License Conditions were satisfactory to the Staff. The letter further stated that the remainder of the supplemental agreement was under review to insure consistency with the proposed License Conditions, and that the Board would be informed of the outcome of this review.

By joint motion of Consumers and the Intervenors, dated September 25, 1979, these parties requested that the Board impose the proposed License Conditions attached to the motion. They further requested that this antitrust proceeding be terminated.

On October 12, 1979, the Staff filed its response to the said motion. The response stated that the Staff's review of the supplemental agreement led it to conclude that it appeared to be consistent with the rights, benefits, and entitlements of all parties under the proposed License Conditions. The

response reiterated the Staff's satisfaction with the said conditions. The Staff supported the aforesaid motion.

On October 15, 1979, Justice filed its response to the said motion. The response stated that Justice had reviewed the proposed License Conditions and the supplemental agreement between Consumers and the Intervenors implementing those License Conditions. Justice agreed that the attachment of such License Conditions to the Midland licenses will assure that Consumers' activities under the licenses will not create or maintain a situation inconsistent with the laws; and will allow this antitrust proceeding to be terminated.

The Joint Motion of September 25, 1979 by Consumers and Intervenors and the responses of the Staff and Justice amount to a stipulation that (1) all parties agree to the imposition of the said License Conditions and (2) such imposition will allow termination of this antitrust proceeding.

The proposed License Conditions have been reviewed in the light of the Appeal Board's decision and instruction (6 NRC 892 at p. 1098-1100). The review included a detailed comparison of these conditions with conditions heretofore imposed to remedy similar situations. Although the proposed License Conditions are the product of compromise, this Board concludes that the proposed License Conditions reasonably address the situations inconsistent with the antitrust laws found by the Appeal Board. Also, this proceeding should be terminated with the imposition of the proposed License Conditions. Accordingly, the Joint Motion of Consumers and the Intervenors, dated September 25, 1979, is granted.

It is hereby ordered that Construction Permits CPPR 81 and CPPR 82, as heretofore amended, be further amended by appending to each of them the antitrust conditions attached to this Memorandum and Order as Exhibit A, and that this proceeding be terminated.

In accordance with 10 CFR 2.760, 2.762 and 2.785, any party may appeal this Memorandum and Order to the Atomic Safety and Licensing Appeal Board by filing exceptions within ten days after service of this Memorandum and Order. Briefs must be filed within the times set forth in the Regulations referenced above.

It is so ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD

J. Venn Leeds, Jr., Member

Marshall E. Miller, Member

Hugh K. Clark, Chairman

Dated at Bethesda, Maryland
this 4th day of August 1980.

EXHIBIT A

MIDLAND NUCLEAR POWER STATION, UNITS 1 AND 2

ANTITRUST LICENSE CONDITIONS

I. DEFINITIONS

1. As used herein:

(a) "Licensee" means Consumers Power Company, or any successor or assignee of this licensee and includes each present or future subsidiary in which Licensee owns more than 50% interest and any successor thereto.

(b) "Bulk power" means the electric power and attendant energy supplied or made available at transmission or subtransmission voltage for resale.

(c) "Neighboring entity" means a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or a lawful association of any of the foregoing, which is all or partially in Licensee's service area (as defined below) and which meets each of the following criteria: (1) its facilities, existing or proposed in the immediate future following a proposal for arrangements under these conditions, are economically and technically feasible of interconnection with those of the Licensee; (2) it owns and operates or proposes to own and operate electric generation, transmission or distribution facilities or has joint ownership participation or contractual rights in generation, transmission or distribution facilities operated by others; and (3) with the exception of generation and transmission cooperatives, municipalities, governmental agencies or authorities, and associations, it is, or upon commencement of operations, will be a public utility or cooperative and subject to regulation with respect to rates and service under the laws of the State of Michigan or under the Federal Power Act; provided, however, that as to associations, a majority of members of such association is either a public utility or cooperative as discussed in this clause (3) or a municipality, governmental agency or authority.

(d) "Neighboring coordinating entity" means a "neighboring entity" which is currently planning its future bulk power supply so that its "total generation capacity" (as defined below) will be at least equal to its projected peak load demand and reserve requirements established pursuant to Section 3(a) hereof. Total generation capacity shall be calculated as the sum of the system's (1) native installed capacity, (2) formally executed bulk power purchases (including purchases under a wholesale tariff) from or arrangements with Licensee or other parties for periods of one or more six-

month peak load seasons and (3) participation in generating units of Licensee or other electric systems. An electric distribution system that satisfies it's entire peak load demand with firm power purchases from another electric system (including an association of which it is a member) does not qualify as a neighboring coordinating entity.

(e) "Costs" means all appropriate costs, including a reasonable return on investment, which are reasonably allocable to an arrangement between two or more electric systems under coordination principles or generally accepted industry practices. In determining costs, no value shall be included for loss of revenues from a sale of power by one party to a customer which another party might otherwise serve.

(f) "Net benefits" means that, for each party thereto, the benefits derived from an arrangement exceed its costs. Receipt of compensation which covers Licensee's costs, in accordance with the applicable tariff or rate filed by Licensee with a regulatory authority, or established by such authority pursuant to a final, non-appealable order, shall be deemed to provide Licensee with net benefits as to such arrangement; provided that Licensee shall not decline to enter into an arrangement during the pendency of administrative or judicial proceedings involving filings applicable to such arrangement. Compensation under a tariff or rate applicable to a particular arrangement or a particular party shall not necessarily by deemed to provide net benefits as applied to different arrangements or different parties. In calculating net benefits from a particular arrangement, Licensee shall also take account of value (positive or negative) other than compensation under a rate or tariff, including impact on system reliability and risks of forced outage.

(g) "Integrated bulk power system" means the interconnected generation, transmission and sub-transmission facilities used to serve a system's principal load centers.

(h) "Licensee's service area" means all counties in Michigan's Lower Peninsula with the following exceptions: (1) the entirety of the counties of Berrien, Cass, Huron, Lapeer, Macomb, Sanilac, St. Clair and Wayne, and (2) the townships in which Licensee is not franchised to provide electric service in the counties of Van Buren, St. Joseph, Monroe, Washtenaw, Oakland, Tuscola and Livingston.

II. GENERAL PRINCIPLES

2(a) The arrangements described in the following sections shall be of the types, and pursuant to terms and conditions, which are consistent with good industry practice. The terms and conditions of any individual arrangement shall be on a basis that will compensate Licensee for its costs

incurred thereby. No party shall be obligated to enter into an arrangement if on balance there does not appear to be any demonstrable net benefit to such party arising from that arrangement. It is recognized that, in any particular arrangement the net benefits may not be equal or identical for each party and that the net benefits of an arrangement for a small system or for a system not theretofore engaging in such arrangements may be greater than that realized by a larger electric system or one already engaging in such arrangements. The relative net benefits to be derived by the parties from a proposed arrangement shall not therefore affect a decision with respect to participating in any such arrangement, subject to the other terms and conditions of this license.

(b) Any neighboring coordinating entity entering into any arrangements provided for in these license conditions will be expected insofar as practicable and in accordance with good industry practice — taking into account laws, rules and other restrictions affecting taxation and financing — to grant reciprocal rights and benefits to Licensee, and to undertake reciprocal obligations with respect to Licensee. Nothing herein shall require a neighboring coordinating entity to construct generation facilities except where to do so is necessary to maintain its reserve obligations under Section 3(a) below.

(c) Interconnection, interchange of power, coordination or other arrangements under this license shall be required only if such arrangements would not adversely affect Licensee's system operations or the reliability of power supply to Licensee's customers or other electric systems with whom it has prior contractual commitments, and if such arrangements would not jeopardize Licensee's ability to finance or construct on reasonable terms facilities needed to meet its own anticipated system requirements, including the sale of firm bulk power pursuant to Section 11(a) hereof.

(d) The following conditions shall be implemented in a manner consistent with the provisions of the Federal Power Act and other applicable regulatory statutes, regulations and orders. All rates, charges or practices in connection with any action taken by Licensee pursuant to this license, which are subject to the jurisdiction of a regulatory agency, are subject to the approval of that agency. Nothing in the foregoing shall be construed to waive any of the Licensee's rights or protection afforded by law with respect to the retail distribution of electricity in those areas of Michigan in which it transacts local business. Licensee shall not be required to enter any final arrangement prior to resolution of any substantial questions as to the lawful authority of another party to engage in the arrangement.

(e) If Licensee participates in any of the following arrangements with an association of electric systems, Licensee shall not be obligated to take

account of requests or requirements of members of that association which do not qualify as a "neighboring entity," as defined in section 1(c) hereof.

(f) Agreements implementing the following sections shall not impose limitations upon the use or resale of capacity and energy after delivery to a neighboring entity, except as may be necessary to protect the reliability of Licensee's system.

(g) Licensee shall also negotiate in good faith interconnection and other appropriate agreements with a neighboring entity which has bona fide plans to become a neighboring coordinating entity in the immediate future so as to permit such entity the opportunity to participate in arrangements described in the following sections as soon as it becomes a neighboring coordinating entity.

(h) The obligations set forth in the following sections shall be governed by conditions and limitations set forth in this section.

III. COORDINATED OPERATIONS

3. Obligation to interconnect and share reserves.

(a) Licensee shall interconnect and enter into appropriate coordination agreements with a neighboring coordinating entity which so requests and operate normally in parallel in accordance with good operating practice, provided that a reciprocal plan of reserve sharing is agreed to by a neighboring coordinating entity as provided herein. Licensee and such entity shall jointly establish and separately maintain the minimum reserves to be installed or otherwise provided under such a plan in accordance with good industry practice. Further, under such a plan, Licensee shall not be obligated to agree that a party may maintain a minimum reserve percentage less than Licensee's own reserve percentage. The reserve requirement thus established shall be calculated as a percentage of peak load demand (adjusted for firm power purchases and sales) and, except as provided herein, no party to the interconnection shall be required to maintain as its reserve requirement more than such percentage of peak load demand. If the reserve requirements of any party to a reserve sharing plan under this paragraph are increased over and above the amount such party would be required to maintain without such interconnection, then the other party shall be required to carry or provide for as a part of its reserve responsibility the full amount of kilowatts of such increase. If over a reasonable period one system demands emergency support from the other to a disproportionately greater extent than the system delivers such support, by reason of the unfavorable reliability experience of the receiving system's generation or transmission facilities, the receiving system shall take all reasonable steps to avoid such demands *(e.g.,* by purchasing capacity and energy other than

emergency energy, or other reasonable steps). Each party to any such reciprocal plan shall maintain such amounts of operating reserves as may be consistent with good industry practice and adequate to avoid the imposition of unreasonable demands on either party in meeting the reasonable contingencies of operating its own system. However, in no circumstances shall a party's operating reserve requirement exceed its installed reserve requirement.

(b) Interconnections with neighboring coordinating entities shall not be limited to lower voltages when higher voltages are requested and available from installed facilities of the party to whom the request is made in the area where the interconnection is desired. Each party shall maintain control and metering facilities as required for safe and prudent operation of the interconnected system in accordance with good industry practice.

(c) The cost of interconnection facilities between Licensee and another system shall be allocated in a manner which takes account of the various transactions for which the interconnection facility is to be utilized.

(d) Except as provided in Section 10(a) *infra,* interconnections shall be made to the integrated bulk power systems of each entity. Any party may require that the transmission facilities between the interconnected parties meet reasonable protective standards to avoid credible contingencies cascading to areas outside of each party's system.

(e) Interconnection agreements shall not prohibit neighboring coordinating entities from entering into other interconnection agreements, but may include appropriate provisions to protect the reliability of Licensee's system, and to insure that Licensee is compensated for additional costs resulting from such other interconnections.

4. Obligation for reciprocal sales of emergency power.

Licensee shall exchange emergency power with neighboring coordinating entities which so request. Licensee shall be required to engage in such transactions if and when it has power and energy available for such transactions from its own generating resources or from interconnected systems but only to the extent that it can do so without impairing service to its customers or other electric systems with whom it has contractual commitments, provided, however, emergency service shall take precedence over any sales of economy energy.

5. Obligation to coordinate maintenance scheduling and for purchases and sales of maintenance power and energy.

Licensee shall exchange joint maintenance schedules and shall engage in purchases and sales of maintenance power and energy with any neighboring coordinating entity which so requests when it can reasonably do so. After agreement to each such transaction, power shall be supplied to the fullest extent practicable for the time scheduled and in accordance with

generally accepted industry practice for maintenance power and energy sales.

6. Obligation to engage in sales of economy energy.

Licensee shall exchange data on costs of energy from generating resources available to it and, consistent with system security sell to, purchase from, or exchange economy energy when appropriate to do so under principles of economic dispatch with a requesting neighboring coordinating entity on a basis that will apportion the savings from such transactions equally between Licensee and such entity.

7. Obligation to sell, purchase or exchange other non-firm surplus capacity and energy associated therewith.

Licensee shall sell to, purchase from or exchange with any neighboring coordinating entity other non-firm bulk power which the supplying system deems to be surplus, when such transactions would serve to reduce the overall costs of bulk power supply without a loss to either party. Such bulk power transactions shall be on terms and conditions consistent with generally accepted industry practice.

8. Reciprocal Performance.

With regard to transactions in emergency and maintenance power, economy energy and other non-firm surplus capacity-energy, as set forth in Sections 4, 5, 6 and 7 above, other parties to such transactions shall maintain (and adequately plan to provide) bulk power supply facilities and capabilities sufficient to reasonably assure Licensee that reciprocal performance will be forthcoming. Reciprocal performance requires plans and bona fide efforts necessary to maintain the established reserve levels under the coordination arrangement. Temporary short-falls in meeting this requirement due to circumstances beyond a party's control would not provide a basis for the other party's failure to perform in this regard. Reciprocal performance does not necessarily require that neighboring coordinating entities supply Licensee with the same amounts of power or energy which they receive from Licensee.

IV. ACCESS TO NUCLEAR GENERATION

9(a) Licensee shall, upon timely request, afford any neighboring entity an opportunity to participate in Midland Units 1 and 2. Licensee shall, prior to the time major equipment items for nuclear generating units are ordered, upon request by any neighboring entity, afford such entity an opportunity to participate in all future nuclear generating units for which Licensee applies for a construction permit on or before December 31, 1999. Participation shall be through reasonable joint ownership or other joint financing arrangements in which the participating neighboring entities pay

their share of costs of construction approximately (but no later than) as they are incurred by Licensee. The form of such participation in such generation units shall be at the option of the participating entity to the extent that such an entity is legally able to participate in the unit under such a form of participation. Such participation shall be on reasonable terms and conditions and on a basis that will compensate Licensee for its costs incurred and to be incurred for such generating units; provided, the aggregate participation of others in any nuclear unit shall not be required to exceed the lower of 49% of the capacity of such unit or an amount based upon a ratio of (i) most recent aggregate peak load demand of requesting participants to (ii) the sum of such demands and Licensee's most recent peak load demand (less the most recent peak load demands on Licensee by the requesting participants). A request from a neighboring entity for participation in Midland Units 1 and 2 shall be deemed timely only if a letter of intent to participate (subject only to financing contingencies) is executed by the governing body of the participating entity and received by Licensee within a mutually agreeable time period following the effective date of these license conditions. As to future nuclear units it plans to construct, other than Midland Units 1 and 2, Licensee shall provide to requesting neighboring entities all available financial and technical data required to assess the feasibility of participation therein. A request for such participation shall be deemed timely only if a letter of intent to participate (subject only to financing contingencies) is executed by the governing board of the participating entity and received by Licensee within six months following Licensee's provision of such data. A neighboring entity's participation request in a nuclear unit shall also be deemed timely only if it executes, within one year after execution of such letter of intent, a legally binding and enforceable agreement with Licensee to assume financial responsibility for its share of the costs associated with a unit.

(b) As a part of any arrangement that may be reached with respect to any participation under subsection 9(a) above, Licensee shall interconnect with and deliver to the integrated bulk power system of a participating neighboring entity any power to which it may be entitled under such arrangement at a delivery point or points on Licensee's system on a basis that will compensate Licensee as provided in Section 10(b) *infra.*

(c) Licensee, as long as it maintains majority ownership, may exercise final authority in all decisions necessary in accordance with good industry practice in the engineering, design, construction, operation, maintenance and scheduling of a nuclear generating unit where a joint ownership or joint financing arrangement is entered under subsection 9(a). An advisory committee shall be organized properly to consider the needs and desires of each party thereto.

(d) In the event that one or more neighboring entities choose to obtain majority ownership in any nuclear unit, Licensee shall be afforded the opportunity to participate in such unit under comparable terms and conditions as those described in subsection 9(a). Nothing in these License Conditions shall require any party to enter into a nuclear unit joint venture where to do so would cause loss of tax-exempt status or otherwise significantly increase the tax liabilities of such party.

V. TRANSMISSION SERVICE

10(a) Licensee shall facilitate bulk power transactions between two or more neighboring entities by providing transmission service between or among the integrated bulk power systems of such entities or to such integrated bulk power systems from the generation facilities of such entities. Licensee shall also provide transmission service for bulk power transactions over its transmission facilities between the integrated bulk power system of any neighboring entity and any electric system engaged in bulk power transactions which is outside Licensee's service area. Licensee shall provide transmission service under this paragraph only if (1) Licensee's and other connected transmission lines form a continuous electric path between the supplying and the recipient systems; (2) permission to utilize other systems' transmission lines has been obtained by the proponent of the arrangement; (3) the services can reasonably be accommodated from a functional technical standpoint without significantly impairing Licensee's reliability or its use of transmission facilities; and (4) reasonable advance request is received from the neighboring entity seeking such services to the extent that such notice is required for operating or planning purposes.

(b) Licensee's provision of transmission services under this section 10 shall be on a basis which compensates it for its costs of transmission reasonably allocable to the service or on another mutually agreeable basis and in accordance with a reasonable transmission agreement. Licensee shall file tariffs providing for transmission services required to implement these license conditions with the Federal Energy Regulatory Commission or its successor agency. Nothing in this license shall be construed to require Licensee to wheel power and energy to or from a retail customer. Each neighboring entity to whom Licensee provides transmission services hereunder shall be expected to provide transmission services to Licensee under comparable terms and conditions, to the extent it has transmission facilities available to do so. Licensee shall keep requesting neighboring entities informed of its transmission planning and construction programs and shall include therein sufficient transmission capacity as required by such entities, provided that such entities provide the Licensee sufficient

advance notice of their requirements. However, Licensee shall not be required to construct any transmission facility (1) which will be of no demonstrable present or future electrical benefit to Licensee, (2) which would jeopardize Licensee's ability to finance or construct, on reasonable terms, facilities to meet its own anticipated system requirements or to satisfy existing contractual obligations to other electric systems, or (3) which could reasonably be constructed by the requesting entity without duplicating any portion of Licensee's transmission system. In such cases where Licensee elects not to construct transmission facilities, the requesting system shall have the option of constructing and owning such facilities and interconnecting them with Licensee's facilities.

VI. OBLIGATION TO SELL FIRM BULK POWER

11(a) Upon timely request, Licensee shall interconnect with, execute appropriate agreements with, and sell firm bulk power under tariff provisions filed with the Federal Energy Regulatory Commission or its successor agency to any neighboring entity (i) which was a wholesale customer of Licensee on the effective date of these license conditions and (ii) which is not a party to a coordination agreement with Licensee, up to the amount required to supply electric service to the retail customers or the retail load of distributing cooperatives (located in Licensee's service area) which are supplied by such neighboring entity.

(b) Upon timely request, subject to the terms of subsection 11(c) hereof, Licensee shall sell firm bulk power to neighboring coordinating entities to which Licensee is not selling bulk power under subsection 11(a) hereof; provided, however, that the purchasing entity agrees to sell such firm bulk power as it has available to Licensee under comparable terms and conditions. Nothing shall require Licensee to sell firm bulk power under the preceding sentence in amounts which exceed the purchasing entity's annual peak load demand and reserve requirements minus its total generating capacity (other than firm bulk power purchases from Licensee), as defined in paragraph 1(d) hereof, at the time of the sale. As used in this subsection (b), "peak load" shall mean the greatest previously experienced load plus estimated load growth attributable to the retail customers or the retail load of distribution cooperatives (located in Licensee's service area) to the extent that such load and load growth are supplied by the purchasing entity in question for periods of requested purchases.

(c) Licensee shall keep requesting neighboring entities informed of its generation planning and construction programs. Licensee shall include in such planning and programs sufficient generation capacity to satisfy requests for firm bulk power from a system which was a wholesale customer

of Licensee on the effective date of these license conditions. Licensee shall not be required hereunder to construct generation facilities or advance generation schedules to satisfy bulk power requests of a system which was not a wholesale customer of Licensee on the effective date of these license conditions.

(d) As used in this paragraph, "wholesale customer of Licensee on the effective date of these license conditions" shall include a neighboring entity which is formed in the future whose load includes load served at retail by Licensee immediately prior to its formation (hereinafter a "New Neighboring Entity"); provided, however, that when the total load of a New Neighboring Entity also includes load served at retail by an entity other than Licensee immediately prior to its formation, Licensee shall only be required to sell firm bulk power under this paragraph in an amount equal to the load in kW served at retail by Licensee during the year immediately prior to the New Neighboring Entity's formation, plus the growth of retail load experienced in the geographic area previously served by Licensee.

(e) Firm bulk power sales under this paragraph shall not be limited to lower voltages when higher voltages are requested and available from Licensee in the area where the interconnection is desired.

VII. ACCESS TO POOLING ARRANGEMENTS

12. Licensee shall not oppose the membership of a neighboring coordinating entity in any pooling or coordination arrangement to which Licensee is presently a party, or within the term of this license becomes a party; provided, however, that the entity satisfies membership qualifications which are reasonable and do not constitute undue discrimination. To the extent that Licensee enters into pooling, coordination or similar joint bulk power arrangements during the term of the license, it shall use its best efforts to include provisions therein which permit requesting neighboring coordinating entities the opportunity to participate in the arrangement on a basis that is reasonable and which do not constitute undue discrimination.

Cite as 12 NRC 191 (1980) **LBP-80-22**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Herbert Grossman, Chairman
Glenn O. Bright
Dr. Richard F. Cole

In the Matter of **Docket No. 50-367-CPA**

NORTHERN INDIANA PUBLIC SERVICE COMPANY
(Bailly Generating Station, Nuclear 1)

August 7, 1980

Following a special prehearing conference, the Licensing Board rules on: standing to intervene in this construction permit extension proceeding; scope of the proceeding; individual petitions to intervene; specific contentions; petitions for waiver or exception of 10 CFR 50.55(b); further scheduling; and the parties' use of an unacceptable transcript of the conference.

CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE (STANDING TO CHALLENGE)

To determine whether standing exists to intervene in a construction permit extension proceeding, a licensing board must consider whether the granting of an extension would adversely affect the petitioner's interests; hence, a petitioner who is in a position to allege injury from the operation of the facility has standing.

CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE (SCOPE OF PROCEEDING)

In a construction permit extension proceeding, a licensing board must consider at least those health, safety or environmental issues that arise from the reasons assigned for the extension and cannot abide the operating license hearing, even if not directly related to the prolonged period of

construction. *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2), ALAB-129, 6 AEC 414, 420 (1973).

CONSTRUCTION PERMIT: EXTENSION OF COMPLETION DATE (GOOD CAUSE)

In assessing what constitutes good cause for the delay in completing construction before the expiration date of the construction permit, a licensing board is not restricted to consideration of only those factors beyond the control of the permittee; reasons within the permittee's control may also be entitled to some weight.

ORDER FOLLOWING SPECIAL PREHEARING CONFERENCE

I. PRELIMINARY MATTERS

A. Framework of this Proceeding

A special prehearing conference was held March 12 and 13, 1980 beginning at 9:30 a.m. each day at the National Guard Armory, U.S. Route 30 and Lynwood Avenue, Valparaiso, Indiana 46383, pursuant to 10 CFR 2.751a, in this proceeding involving a proposed construction permit extension for the Northern Indiana Public Service Company ("NIPSCO" or "Permittee").[1] Subsequent to the scheduling of the conference, Mr. Glenn O. Bright, a scientific member of the Board, was hospitalized with serious injuries suffered in an accident at his home. Consequently, the conference was conducted by a quorum consisting of the Chairman and Dr. Richard F. Cole, as permitted under 10 CFR 2.721(d). The Board denied a motion made at the beginning of the prehearing conference by the Porter County Petitioners (see later description) to adjourn the conference until a full Board could be in attendance on the ground that it was not worth the extra delay in order to have both technical members present at a conference devoted primarily to procedural and legal matters.

The purpose of the special prehearing conference, as stated in the February 7, 1980 Order and under 10 CFR 2.751a, was to discuss the intervention petitions, the requests of petitioners for waiver of, or exception

[1]A notice of this conference scheduled at a different site was sent to all participants on February 7, 1980. The Order was published on February 14, 1980 at 45 FR 10098. On February 15, 1980, Petitioner, the State of Illinois, moved for a two-week extension in order to allow its counsel more time to prepare its contentions. The Board denied that motion on February 20, 1980 because of the unavailability for an extended period of one or more participants in this proceeding on any possible alternate dates. The originally scheduled site of the conference was changed to the National Guard Armory by Order dated March 7, 1980, in order to accommodate the expected large attendance.

to, 10 CFR 50.55(b), specific issues that might be considered at an evidentiary hearing, and possible further scheduling in the proceeding.

On November 30, 1979, the NRC had published a Notice of Opportunity for Hearing on the proposed extension of construction permit in the Federal Register (44 FR 69061) requiring that all petitions for leave to intervene be filed by December 31, 1979, in accordance with 10 CFR 2.714. By that date, individual petitions were received from Dr. George Schultz, Local 1010 of the United Steelworkers of America, the Lake Michigan Federation, and the State of Illinois. Joint Petitions were received from the Porter County Chapter of the Izaac Walton League of America, Inc., Concerned Citizens Against Bailly Nuclear Site, Businessmen for the Public Interest, Inc., James E. Newman, and Mildred Warner ("Porter County Chapter Petitioners"); the City of Gary, Local 6787 of the United Steelworkers of America, the Bailly Alliance, Save the Dunes Council, and the Critical Mass Energy Project ("Gary Petitioners"); and George and Anna Grabowski. The State of Illinois also sought intervention as an Interested State under 10 CFR 2.715(c). Certain of the petitioners also petitioned for a waiver of, or an exception to, 10 CFR 50.55(b), to the extent that it might be interpreted as limiting matters to be considered in this proceeding to the reasons why construction was not completed by the latest date in the construction permit.

B. Transcript Problems

As permitted by 10 CFR 2.751a(c), the special prehearing conference was stenographically reported. However, the transcripts were of such poor quality, that they were returned to the reporter as unacceptable, together with a request that they be retyped and that the stenotype tape be forwarded to the NRC for verification of the retyped transcript.

Simultaneously with our returning the transcripts as unacceptable, we issued an order requesting the participants' opinions of the transcripts and their suggestions with regard to further procedures in view of the deficiencies. The responses uniformally condemned the transcripts as largely incomprehensible, garbled and unreliable. Predictably, those who had said the least at the conference were inclined toward having the participants correct their own statements; those who had been required to say the most, including the Chairman, recognized the hopelessness of the task.

The revised transcript (only the transcript for March 12, 1980 was revised) has now been received and represents a considerable improvement over the original. However, since most of the problem arose from the reporters' failure to stenographically tape with accuracy the statements of the participants, the revised transcript is still unsatisfactory.

Taking all of the responses into account, the Board determines that the best procedure for ameliorating this unprecedented situation is as follows:

1. This Order refers to the revised transcript pages for convenience, not accuracy, and is also based upon the recollection of the Board as to what transpired at the conference and the filings of the parties. To give the conference participants the fullest opportunity to present their positions and preserve them in the record, the Board also issued this Order as a Provisional Order on May 30, 1980, and allowed objections (including argumentation, whether or not previously expressed, and requested revisions) to be filed within twenty-five (25) days of the service of the Provisional Order. The Board has taken those objections into account and now issues this final Order. Objections may now be filed to this Order (includng those that may have been advanced to the Provisional Order) within the time limits prescribed by 10 CFR 2.751a(d): 5 days after service of this Order by the parties, except the Staff; 10 days after service by the Staff. The time for appeal under 10 CFR 2.714a(a) is within 10 days after the date of service of this Order.

2. The following order shall govern the use of the transcript and shall be stapled to the front cover of each volume of the special prehearing conference transcript:

> "Because of the poor quality of this transcript, which does not constitute a verbatim transcript of the proceedings, this cannot be considered an authoritative or official transcript of the proceedings, but may be referred to as a reference tool, pursuant to the August 7, 1980 Order of the ASLB."

II. STANDING TO INTERVENE IN THIS EXTENSION PROCEEDING

Prior to the special prehearing conference, the Staff and Permittee objected to the petitions to intervene on the grounds that the petitioners had not demonstrated the possibility of their suffering an injury in fact from the Permittee's receiving the requested extension, and had not raised an "aspect" which would fall within the scope of the proceeding. They also objected to the failure of organizational petitioners to submit the requisite statements specifying their members' personal interests in the proceeding and authorizations for the organizations to represent them.

According to the Permittee and Staff, only a petitioner who could demonstrate that he would be adversely affected in some interest cognizable by the statutes from the prolonged construction period could show an injury that might result from an extension proceeding. In their view, insofar as the petitioners allege injuries arising from the operation of the facility they would have no standing to complain because the only effect of the

requested extension would be to prolong the period of construction; the construction, itself, had already been authorized after lengthy hearings on the health, safety and environmental considerations relating to the use of the site for an operating nuclear facility.

Petitioners, on the other hand, argued (Tr. 24-26, 30-34) that granting the extension should be considered the same as granting a construction permit, because the Bailly facility could not be built without the extension. Hence, anyone who might be adversely affected by the operation of the facility would have standing to intervene in the extension proceeding.

In the Board's Provisional Order, we agreed with petitioners that anyone who could claim standing in a construction permit proceeding because of injury from the operation of the facility could claim standing in an extension proceeding if the other prerequisites were satisfied, although for slightly different reasons than offered by the petitioners. We did not view the granting of the extension to be the equivalent of the issuance of a construction permit to build Bailly, as petitioners contended. However, we recognized that the granting of an extension not only permits a prolonged period of construction but also permits construction to proceed without requiring further health, safety or environmental hearings, which might protect persons affected by the operation of the facility, until the operating license proceeding. Consequently, the Board held that those persons who would have standing to intervene in new construction permit hearings, which would be required if good cause could not be shown for the extension, would have standing to intervene in this proceeding to show that no good cause existed and, consequently, new construction permit hearings would be required to complete construction.

In their responses to the Provisonal Order, the Staff and Permittee object to this conclusion, but, in our view, only confirm its correctness. They object upon the ground that the Board's conclusion was based upon "prejudging the case" by speculating that the extension would be in violation of the Atomic Energy Act when, in fact, it might be based upon good cause and clearly provided for by the Act. (Permittee, at p. 33; Staff, at p. 6.)

The Board confesses that it had indeed prejudged certain assertions in petitioners' favor for the purpose of determining standing. Clearly, the only way to determine whether a petitioner can claim injury in fact is to assume that its contentions are correct to determine whether it would suffer an injury cognizable by the Atomic Energy Act by not being admitted to the proceeding.

The Staff additionally contends (Response to Provisional Order, at p. 5) that a petitioner's interests in operational safety issues should not confer standing since the fundamental purpose of an extension proceeding is not

to assess the safety of the plant. In this, the Staff confuses "standing" with the scope of the proceeding. To determine whether standing exists, the Board must determine whether a result of the proceeding unfavorable to the petitioner (in this case the granting of an extension) would adversely affect petitioner's interests. While the scope of the proceeding is limited by the Notice of Opportunity for Hearing and 10 CFR 50.55(b), it is the end result of the hearing (*i.e.,* either the granting or denying of the requested extension) that must be considered to determine whether petitioners' interests will be affected. As we see it, the result would not be merely a determination of whether each contention is correct and whether the construction period should be prolonged, but also a determination of whether the permit should expire, requiring new construction permit hearings that might protect the petitioners' interests before further construction could proceed.

Accordingly, the Board will admit as having "standing" to challenge Permittee's assertion of good cause for the extension those petitioners who are in a position to allege injury from the operation of the facility if they otherwise qualify for intervention, including raising at least one contention within the scope of this proceeding.

III. SCOPE OF THE PROCEEDING

A. Positions of the Participants

The Staff and Permittee would concede as valid only those contentions which relate to the reasons for the delay in completion of the facility, the reasonableness of the requested extension, and any alleged incremental adverse environmental and radiological effects of the prolonged period of construction. They would relegate all other issues raised, to the extent not already covered in the construction permit hearings, to the operating license hearings under the bifurcated system in effect under the regulations in reliance upon the only decided NRC case in this area, *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2), ALAB-129, 6 AEC 414 (1973).

Under that opinion, the Permittee would agree to the Board's considering safety or environmental issues only if they are related to the causes of the delay, *"in and of themselves* cast serious doubt upon the ability of the Applicant to construct a safe plant," and considering them could not abide the operating license proceeding. (NIPSCO Response, March 7, 1980, at p. 25, relying upon *Cook, supra,* at p. 420; emphasis in original.) The Staff asserts that all of the safety issues raised here that are not directly related to the prolonged period of construction should abide the operating license proceeding. (Staff Response, January 23, 1980, at p. 9, fn. 10.)

Petitioners also rely upon the *Cook* case but, as can be expected, urge a much broader scope to this proceeding. They uniformly deny, as contended by the Staff and Permittee, that they are attempting to re-litigate any of the issues already decided at the construction permit stage. However, they do not agree that the "good cause" that must be shown for the extension is equivalent to a showing of good cause for the delay in construction.

The Porter County Petitioners (Tr. 104-106) raise four elements which they contend must be demonstrated by a permittee to establish good cause for an extension: 1) a showing of good cause why the construction was not completed by the completion date, 2) an absence of adverse effects from constructing the facility over the prolonged period, 3) a showing that there are no significant adverse safety or environmental effects which arise from the reasons leading to the noncompletion of the facility (as petitioners contend was determined in *Cook*), and 4) a showing that no significant events have occurred since the initial completion date that could adversely affect the determination to complete the facility. The significant events, petitioners concede (Tr. 105), are only those that have occurred subsequent to the granting of the construction permit and therefore could not have been considered at the construction permit stage. Petitioners further concede (Tr. 106) that the Board has discretion to consider which events are significant enough to fall within the fourth category, but argue for a broad exercise of discretion in this case because of the unique set of circumstances under which this plant is alleged to be only one percent completed, the requested extension is for a lengthy period, and the site of this plant would be considered unsatisfactory under proposed new siting requirements.

Petitioners strenuously deny that they are asking the Board to depart from the established bifurcated system of first holding a construction permit proceeding and then offering an operating license proceeding. The Porter County Chapter Petitioners (Tr. 92-99) and the Gary Petitioners (Tr. 134-135) contend that the requirement to show good cause for the extension pursuant to Section 189 of the Atomic Energy Act and 10 CFR 50.55(b) already establishes a trifurcated system under which a hearing must be offered in the interim between the issuance of construction permit and the operating license proceeding upon the permittee's request for the extension, in order to consider significant developments to that point. In this they rely upon the difference in the wording between the FCC statute, which requires only a showing of good cause for the delay, and the Atomic Energy Act which requires a showing of good cause for the extension. They contend that, by adopting this dissimilar language which suggests going beyond merely the reasons for the delay, Congress intended to afford a hearing on significant developments to the time of the extension proceeding.

The State of Illinois Petitioner adds to the position that there is a broad scope to the hearing of "good cause" by relying (Tr. 138-145) on 10 CFR 50.91 which governs the amendment to construction permits and requires that the Commission be guided by the "considerations which govern the issuance of initial...construction permits to the extent applicable and appropriate." The Petitioner argues further that those considerations are articulated in 50.35(a)(4) and 50.40 which require that all health and safety questions be satisfactorily resolved so that the public not be endangered. Like the other petitioners, the State of Illinois agreed (Tr. 142) that only *significant* environmental or safety issues which are unrelated to the cause for the delay should be considered in the extension proceeding and that other environmental and safety issues could abide the operating license proceeding.

B. The Board's Determination of the Scope of the Proceeding

1. Matters Related to the Prolonged Period of Construction

a) **In General**

In determining the scope of this proceeding, we begin by noting that the appeal board in *Cook,* ALAB-129, *supra,* did not interpret Section 185 of the Atomic Energy Act or 10 CFR 50.55(b) as restrictively as Section 319 of the Federal Communications Act, 47 USC 319, which requires a forfeiture of the permit unless circumstance beyond the control of the permittee prevented timely completion of the facility. Under *Cook,* a licensing board must consider at least health, safety or environmental issues which arise from the reasons assigned for the extension that cannot abide the operating license hearing, even if not directly related to the prolonged period of construction. (6 AEC, at p. 420.)

One contention in dispute raised by more than one petitioner which may fit that category involves the short pilings issue, which was the subject of a Commission Memorandum and Order, dated December 12, 1979, *Northern Public Service Company* (Bailly Generating Station, Nuclear 1), CLI-79-11, 10 NRC 733. At the construction permit hearing, NIPSCO'S consultant had testified that the company anticipated that the foundation pilings for the facility would be driven to bedrock or glacial till. After the construction permit had issued, NIPSCO communicated to the NRC Staff that it intended to install piles extending only to the glacial lacustrine deposits. The State of Illinois and Local 1010 of the United Steelworkers, petitioners in this proceeding, petitioned the Commission to determine that the proposed change from installing pilings to bedrock or glacial till to installing shorter pilings constituted a request for a construction permit

amendment involving significant hazards considerations that required a hearing. The Commission's Order denied that request.

Unquestionably, the change to short pilings is a safety issue that arises from a reason for the delay in the completion of the facility, since NIPSCO assigned, as one of its reasons for the delay, the cessation of construction since December 28, 1977, pending the completion of the NRC Staff's review "of the method to be used for installation of foundation piles for the facility." (Application for Extension, February 7, 1979, at p. 2.) Consequently, under *Cook,* we must determine whether that issue should abide the operating license proceeding.

To begin that determination, we must first decide on the standards that govern the question of which items are to abide the operating license proceeding. If we turn first to 10 CFR 50.91, we see that, "In determining whether an amendment to a license for construction permit will be issued to the applicant the Commission will be guided by the considerations which govern the issuance of initial licenses or construction permits to the extent applicable and appropriate." The standards which determine the matters to be heard during the construction permit proceeding are spelled out in 10 CFR 50.34(a); the standards covering the matters to be considered in the application for an operating license are spelled out in 10 CFR 50.34(b). However, certain of the matters covered by 50.34(a) may be deferred to the operating license application under 50.35(a) if they fit the first three categories specified in that section and there is reasonable assurance that all safety questions relating to those items will be satisfactorily resolved before the latest date stated in the application for completion of construction and that the facility will not present an undue risk to the health and safety of the public. For a discussion of the application of these sections to determine what matters may abide the operating license proceeding, see *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 776-778 (1977).

We first must ask whether, on the basis of the information now available, the safety issue raised would be considered at a construction permit proceeding by applying 50.34(a) and 50.35(a). If the answer is in the negative, that should end our consideration of the issue under any theory advanced by the petitioners. Clearly, the mere request for an extension is no reason to accelerate a consideration of issues that the rules provide for considering no earlier than the operating license stage.

But if we decide in the affirmative that, on the information now available, the safety issue would have been heard in the construction permit proceeding, we have not yet resolved the question of whether it should be heard here. *Cook,* after all, tells us (6 AEC, at p. 420) that the only issues arising from the reasons assigned for the extension that we should consider

are those "necessary in order to protect the interests of intervenors or the public interest." The Board saw no "possible prejudice to intervenors" if the consideration of lesser operational safety problems were to be deferred to the operating license hearing. (*Ibid.*) The test as we see it is whether, taking into consideration the construction permit board's determination under 10 CFR 50.35(a)(4) that there was "reasonable assurance" that all safety matters would be satisfactorily resolved before the construction completion date in the original application, this Board has strong reason to believe that there no longer is such reasonable assurance with regard to a safety issue raised that the issue will be satisfactorily resolved by the new completion date. If compelling reasons are offered with regard to the safety issue for not resting on a prior board's determination (explicit or implicit) that reasonable assurance exists that all safety issues will be resolved, the current Board must hear the issue. Cf. 10 CFR 2.760a which permits a Board to raise serious safety, environmental or common defense matters on its own motion in operating license proceedings.

Not only does that interpretation maintain the integrity of the two-stage process favored by the Atomic Energy Act, as recently approved in the Commission's Order of December 12, 1979, *supra,* but it comports with 10 CFR 50.91 which requires that an amendment proceeding be guided by the same considerations which govern construction permit proceedings "to the extent applicable and appropriate." Clearly, establishing a trifurcated system in place of the bifurcated one every time there is a request for an extension of a construction permit, as advocated by the Gary Petitioners, in order for the Board to consider all significant health and safety or environmental issues that have arisen since the granting of the construction permit, is not appropriate under 50.91 without a conscious and explicit directive by either Congress or the Commission to modify the bifurcated system to that extent.

We have considered, but see no merit in, the objections to our applying 10 CFR 50.91, 50.34(a), and 50.35(a) to extension proceedings, expressed in the Staff's and NIPSCO's responses to our Provisional Order. While it is true (Staff Response to Provisional Order, at p. 9) that the specific application of 50.55(b) to permit extension proceedings should prevail over the more general provisions of those other sections, 50.55(b) does not exclude a consideration of those other sections where matters are not specifically covered by 50.55(b). We see little in 50.55(b) that offers us guidance in applying the *Cook* decision to determine what matters are to abide the operating license stage.

Nor, can we agree with NIPSCO (Response to Provisional Order, at pp. 7-13), that 50.34(a) and 50.35(a) are "unhelpful" in identifying issues which should not appropriately abide the operating license proceeding

because: 1) 50.35(a) allows a construction permit applicant the complete freedom to defer to the operating license stage all aspects of the proposed facility other than the principal architectural and engineering criteria for the design and 2) under *Cook,* the only relevant standard is whether an "immediate" resolution of the issue is essential, which would imply that only a safety problem that might arise during construction should be considered.

As to the first point, it is our understanding (and undoubtedly the best practice) that when design plans are finalized by the time of the construction permit proceeding, they are ordinarily presented to the Staff and Board. But even if they are not, the Board will attempt to resolve all safety issues arising from those designs to the extent capable of resolution at the proceeding, either when raised by intervenors or on the Board's own motion. See *River Bend,* ALAB-444, *supra,* 6 NRC, at p. 766.

As to the second point, we consider Permittee's concept of the *Cook* test much too narrow. Had the appeal board intended to restrict an extension proceeding to safety problems during construction, it would not have assigned as an example to be considered by a licensing board (*Cook, supra,* at p. 420) issues that would cast serious doubt upon the ability of the applicant to "construct a safe facility" (rather than to "safely construct a facility," as Permittee would have it).

Moreover, while Permittee recognizes (at p. 7) that the Provisional Order established a "two-part test," its main criticism appears to be (at pp. 11-12) its erroneous assumption that the Board intends to entertain any issue that would be considered in a construction permit proceeding. However, only the first part of the Board's two-part test requires that an issue not be heard in an extension proceeding if it would not be ripe for determination were the construction permit proceeding to be held at that time. The second part of the test requires that, in order for the issue to be heard, the Board have strong reason to disregard the presumption inherent in the granting of the construction permit that there is a reasonable assurance that all safety issues would be resolved by the completion date of the construction.

b) **The Short Pilings Issue**

Having discussed in general the standards that apply to hearing issues not directly related to the delay in construction but that arise from the reasons assigned for the extension, we now turn to the short pilings issue, which fits that category, to determine whether it should be heard.

The Permittee and Staff insist that the Commission has already determined in its Memorandum and Order of December 12, 1979, in *Northern Public Service Company* (Bailly Generating Station, Nuclear 1),

CLI-79-11, *supra,* that the health and safety or environmental issues arising from the permittee's proposal to use short pilings rather than long pilings driven to bedrock must be deferred to the operating license proceeding, unless Staff, at its discretion, institutes proceedings pursuant to 10 CFR 2.202. We read that Order differently.

The Commission's Memorandum and Order was issued in response to petitions requesting hearings on the short pilings proposal on the grounds that Permitee's proposal to use short pilings required a construction permit amendment and represented a significant hazards consideration (which require an issuance of a Notice of Opportunity for Hearing). In a split decision, the Commission disagreed by determining that the issue of pile design had been left unresolved at the time of the construction permit issuance, which meant that the short pilings proposal was not a change and did not require construction permit amendment. Furthermore, the Commission held that the type of pilings to be used was properly left for later resolution (*i.e.,* the operating license proceeding) pursuant to 10 CFR 50.35(a), since further technical and design information was needed to complete the safety analysis. That information could only be supplied after tests for which the Permittee was required to have a construction permit and which would encompass a research program involving the sinking of test piles.

Finally, the Commission declined to offer a discretionary hearing on the short pilings plan on the ground that it saw no benefit in departing from the two-stage process of a mandatory construction permit hearing and then an opportunity for hearing, available upon request at the operating license stage, in favor of an interim public hearing.

As we read the Commission's Memorandum and Order, it did not decide whether the short pilings proposal could be considered in a proceeding involving the pending requested extension, which the Commission never mentioned, and did not even suggest a policy with regard to hearing that matter in the extension proceeding. It merely reaffirmed the licensing board's implicit determination that, *as of the time* of the construction permit proceeding, the design of the pilings and the health and safety or environmental issues arising therefrom should probably await the operating license stage. Here, we are not concerned with the correctness of the licensing board's implicit determination that, at the time it conducted the construction permit proceeding, the issues arising from the design of the pilings should await the operating license proceeding. Under *Cook,* our inquiry is directed towards determining whether, *at the time of this extension proceeding,* the short pilings issue should abide the operating license proceeding.

To begin that determination, we must first apply the standards that govern the question of which items are to abide the operating license proceeding discussed above. The Board makes no determination at this point of whether the contentions regarding the short pilings issue will be accepted. It, first, propounds these questions to the Staff, Permittee and those petitioners who have sufficient information and desire to respond, to be answered within ten (10) days after service of the Order:

(1) Are the Permittee's plans with regard to the pilings advanced to the stage where they would be considered at a construction permit proceeding? If not, what remains further to be done to bring them to that stage?

(2) When does the Staff estimate it will complete its analysis of the short pilings proposal?

(3) What are the reasons (practical, legal or otherwise), if any, why it would be preferable to defer the short pilings proposal to the operating license proceeding, rather than hear it at this proceeding before further construction commences?

(4) What are the reasons if any, why the Board should or should not be reasonably assured, without hearing that issue in this proceeding, that all safety questions arising from the proposal to use short pilings will be resolved before the latest date mentioned in the request for the extension?

We recognize that this Board will be subject to the criticism of considering hearing the short pilings issue contrary to the Commission's exercise of its discretion not to hear that issue in its December 12, 1979 Order. Because of the different context within which this Board's determination must be made, we see no conflict. Following its holding that no construction permit amendment was necessary, the Commission decided not to exercise its discretion to initiate a wholly new proceeding in the nature of a show cause proceeding. It left the Staff still free to bring such a proceeding in an exercise of the Staff's discretion. (10 NRC, at p. 743.) Here, a proceeding has already been established because of the permittee's request for an extension and the Staff's issuance of a Notice of Opportunity for Hearing. Furthermore, the legal nexus between the short pilings issue and this proceeding has been established in that the short pilings consideration was one reason given for the requested extension. (See *Cook, supra.*)

The Commission's Order gives no indication of what the Commission would have done had it been asked to consider the short pilings issue in the same context we have here of an established proceeding, a nexus between the issue and the subject matter of the proceeding, and the precedent of an appellate tribunal's direction (*Cook, supra,* at p. 420) to consider the

"totality of the circumstances" in deciding whether an issue such as this should be heard to protect the public interest.

2. Matters Not Related to the Prolonged Period of Construction

a. **In General**

A more novel question before the Board concerns the issues that do not arise from the reasons for the delay in construction or are otherwise unrelated to the prolonged period of construction. In *Cook, supra,* the intervenors apparently conceded (at p. 421) that any design changes that did not contribute to the delay should not be explored in an extension proceeding. Here, the petitioners insist that a request for an extension automatically converts the bifurcated system into a trifurcated one, with the intermediate proceeding on the extension covering all significant health and safety or environmental issues that have arisen since the construction permit proceeding. The Permittee and Staff would rule out from consideration any issue that is unconnected to the delay in the completion of construction.

In our Provisional Order, although we did not discern any such issues in the contentions raised, we hypothesized that issues that do not directly relate to the delay in construction and do not arise from the reasons assigned for the extension would be within the scope of this proceeding if the Board were to determine preliminarily that they must be heard in order to protect the interests of the intervenors or the public. We expressly disclaimed any intention of undermining the established two-stage process and, accordingly, recognized that our jurisdiction to hear matters not directly related to the delay or to the reasons assigned for the extension would be limited to matters compelling enough to warrant the Staff's initiating 2.202 order to show cause (whether or not it has done so).

In its response to the Provisional Order, the Permittee objects (at pp. 18-22) to what it contends is the Board's enlargement of its own jurisdiction to consider issues beyond the scope of the hearing notice. This argument, however, merely begs the issue, which is whether a consideration of compelling safety matters not directly related to the cause of the delay and the reasons assigned for the extension may be taken into account in determining if good cause has been shown for the requested extension, *i.e.,* whether these matters are within the scope of the hearing notice. We do not find that the cases cited by Permittee (at pp. 19-20), to the effect that a licensing board has no independent authority to initiate an adjudicatory proceeding or expand its jurisdiction and authority to unrelated issues, illuminate the area of what falls within the scope of an extension proceeding. We do not need the cases to instruct us that the Board cannot

expand its own jurisdiction to hear matters that are acknowledged to be beyond the scope of the proceeding in the first instance.

The Permittee further argues (at pp. 24-25) that, since a licensing board has no independent sources of information to equip it to determine whether a 2.202-type hearing is warranted, and, since the licensing boards are not to prejudge the merits of factual contentions under the principle of *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1) ALAB-590, 11 NRC 542 (1980), the Board's proposed standard "threatens to destroy the two-stage licensing process." As if to confirm Permittee's position that the Board's hypothesis might necessarily result in a full-scale trifurcated hearing process, contrary to the Board's intention and the Commission's reaffirmation of the two-stage process in its short pilings order of December 12, 1979, Porter County Chapter Petitioners' response to the Provisional Order suggest (at p. 4) that the Board's refusal to accept a contention raising a safety matter, in the context of the Board's stated hypothesis, might be premature and improper. Apparently, according to this reasoning, if the Board determines that compelling safety matters may be heard, even if unrelated to the reasons for the delay in construction, then it must admit any contention that merely alleges a compelling safety matter.

The Board is not persuaded that, under *Allens Creek,* ALAB-590, *supra,* as Permittee and Petitioners imply, the discretion to hear a compelling safety matter in the context of an extension proceeding might foreclose the Board from refusing to admit a contention alleging a significant safety matter, where the petitioner has failed to establish the compelling nature of the safety matter a *prima facie* matter to the Board's satisfaction to bring it within the scope of the proceeding.

In further support of hearing these issues, we can perceive of no reason why we should be permitted to use a "common sense approach" (*Cook,* ALAB-129, *supra,* 6 AEC, at p. 420) to consider issues necessary to protect the public interest that cannot abide the operating license proceeding when they arise from the reasons assigned for the extension, but should not be permitted to use that approach if such compelling safety issues are otherwise present and apparent to the Board. We note that the Commission did not reaffirm the two-stage process in its December 12, 1979 Order on short pilings to the extent of an absolute refusal to initiate interim proceedings between the construction permit proceeding and the operating license proceeding. It merely declined to exercise its discretion to establish such a hearing on the issue before it on the basis of the recommendations of the Staff and the ACRS that the Permittee's decision to use short pilings did not constitute a construction permit amendment, and because of its further deference (10 NRC, at p. 743) to the staff's discretion to institute

proceedings pursuant to 10 CFR 2.202 where substantial health and safety issues are raised.

On the other hand, we cannot gainsay Permittee's argument that the Board's lack of independent sources of information and investigatory powers leaves it less well equipped than the Staff to make a preliminary judgment as to whether a compelling safety matter exists. For that reason, we recognize that any jurisdiction the Board may have to consider these matters is strictly limited to situations in which the petitioner has made a convincing *prima facie* showing that the safety matter alleged will not be satisfactorily resolved by the new completion date of the facility and, hence, is within the scope of an extension proceeding.

Whatever may be our views on this matter, we need not decide it here, for we find no issue in the contentions raised, not directly related to the delay in construction and not arising from the reasons assigned for the extension, that must be heard in advance of the operating license proceeding to protect the interests of the intervenors or the public.[2] We find that one prominent issue, involving emergency evacuation and siting, raised by the Gary Petitioners and Dr. Schultz as their sole contentions (and by other petitioners among other issues), does not meet that standard and will not be heard by this Board.

b. **Site Suitability**

The gist of the contentions regarding site suitability raised by the various petitioners is that, although site suitability was considered in the construction permit stage and the emergency evacuation plans will be considered in detail at the operating license stage, significant changes have occurred in the NRC's siting requirements that should be considered at this hearing. In particular, petitioners refer to the Report of the Siting Policy Task Force (NUREG-0625) which establishes six siting criteria and lists Bailly as the only nuclear plant operating or under construction that fails to meet all of them. Petitioners contend that a consideration of evacuation plans at the operating license stage would be ineffectual because the site itself is unsuitable for a nuclear facility and no suitable evacuation plans could be devised. They point to the very minimal investment in the plant at this point (which allegedly is only one percent completed) as a justification

[2]Since the Board does not find any issue not relating to the prolonged period of construction which must be heard here to protect the interests of the intervenors or public, it does not have to decide whether, if such an issue were present, it could be taken directly by the Board, as suggested above, or must first be certified to the Commission under 10 CFR 2.758(d) for an exception to, or waiver of, 10 CFR 50.55(b). Unless we later determine to accept one of the newly-phrased contentions submitted by the Porter County Chapter and Illinois Petitioners after we issued the Provisional Order, we will leave it to a future Board faced directly with that situation to make a definitive ruling.

for hearing that issue in this proceeding, before the Permittee recommences construction and makes it more difficult for the Commission to reconsider site suitability.

Petitioners have made a persuasive argument for reconsidering the suitability of the Bailly site before further resources are committed to construction in the event that site suitability standards are changed. In our Provisional Order, we recommended that the Staff and Commission consider the Bailly site in particular when the new rules are formulated, as we were certain they would and as NUREG-0625 suggested they were doing. However, in the absence of a final statement of policy by the Commission on new siting requirements which suggested the unsuitability of the Bailly site, we did not deem it appropriate to authorize a re-litigation of a matter that was already determined by a licensing board in the construction permit proceeding on standards in 10 CFR, Part 100 that had not yet been changed.

Since we issued our Provisional Order, Congress and the Commission have indicated their desire not to have new siting requirements applied to facilities authorized before a certain date, except by the Commission on a case-by-case basis: Public Law 96-295 (June 30, 1980), which authorizes the NRC's appropriations for fiscal year 1980 and directs the manner in which they can be spent, provides in Section 108 that regulations establishing demographic requirements for siting promulgated under the authorization shall not apply to any facility for which application for a construction permit was made on or before October 1, 1979; the Commission's May 30, 1980 Order in *Consolidated Edison Company of New York, Inc.* (Indian Point, Unit No. 2) and *Power Authority of the State of New York* (Indian Point, Unit 3), Docket Nos. 50-247 and 50-286, and its advance notice of rulemaking on the revision of reactor siting criteria, entitled "Modification of Policy and Regulatory Practice Governing the Siting of Nuclear Power Reactors," dated July 23, 1980, 45 FR 50350 (July 29, 1980), direct the Staff to review facilities situated in areas of high population density that already have construction permits, and submit a report to the Commission to be considered in the *Commission's* case-by-case determination on each site.

The Commission's issuances and Public Law 96-295 confirm our decision not to hear the siting issue in this proceeding.

3. Factors Within the Control of the Permittee

A further disagreement exists with regard to what may constitute "good cause" for the delay in completing the construction before the expiration date. The State of Illinois. Petitioner contends (Tr. 176-180; Memorandum of Illinois, dated April 9, 1980) that only matters beyond the control of the Permittee can constitute good cause for the delay. The Porter

County Chapter Petitioners, while not contending that only factors beyond the control of the Permittee may constitute good cause for the delay in completion, argue (Tr. 164-171, 177-178) that the question of whether the Permittee had control over the reasons for the delay is relevant to determining whether good cause existed for the delay. The Permittee and Staff take the position that matters within the control of the Permittee can also constitute good cause for the delay in completion.

The Permittee (Memo, dated April 10, 1980, at p. 7) cites *Georgia Power Compay* (Alvin W. Vogtle, Units 1 and 2), LBP-77-2, 5 NRC 251, 273-275, aff'd., ALAB-375, 5 NRC 423 (1975), as granting an extension of a construction permit even though the delay in construction was within the control of the applicant. In that proceeding, the entire delay was attributable to the applicant's experiencing a shortage of construction funds due to inflation, an inability to sell securities or bonds, and a delay in receiving increased rates from the Georgia Public Service Commission, which made it imprudent for the applicant to continue construction. Whether these conditions constitute matters within the control of the applicant is arguable.

Nor are we pursuaded by the Permittee's argument (Memo dated April 10, 1980, at p. 3) that the wording of 10 CFR 50.55(b) requires a recognition of matters within the control of the licensee as constituting "good cause" in order to preclude an interpretation of the regulation that would make its words redundant or surplusage. While, technically, the statement that the "Commission will recognize, among *other* things," (emphasis added) certain stated occurrences and "other acts beyond the control of the permit holder," would suggest an area within the "things" to be recognized, of acts within the control of the permit holder, we are not sure that that wording is not in fact a redundancy arrived at through an overexercise of caution. Since none of the stated occurrences appear to us to be matters within the control of the applicant, there might easily be inferred an intent that only matters beyond the control of the applicant be considered, notwithstanding the grammatical imperfections.

We do, however, incline towards the view that even matters within the control of the applicant may be considered as constituting "good cause." We do so only because we can think of no reason why Congress, in enacting Section 185 of the Atomic Safety Act, 42 USC Section 2235, or the Commission, in promulgating 10 CFR 50.55(b), would have intended to require the completion of a nuclear facility if good reason for delay were present, even for matters within the control of the applicant. We consider it especially unlikely that Congress or the Commision would have intended to discourage health or safety improvements that were not required under the construction permit, which might entail some delay, by putting the

applicant at the risk of losing its permit. Similarly, even though the need for power must be demonstrated at the construction permit hearing, a changed situation could occur which might warrant a slowdown in construction.

In short, we cannot accept the position of the State of Illinois Petitioner that *only* matters beyond the control of the permittee may be considered as constituting good cause for the delay. On the other hand, we must recognize what must be obvious, that reasons beyond the control of the permittee would generally be more weighty than reasons within its control. We are not sure that the Permittee, Staff or the Porter County Chapter Petitioners have any real disagreement in that regard, however they may have expressed their respective positions at the conference or in their submissions.

IV. RULINGS ON INDIVIDUAL PETITIONS

Porter County Chapter Petition

As discussed later, Contentions 4 and 5 in Petitioners' supplemental petition, which relate to dewatering over an alleged prolonged period of time due to the requested extension, are within the scope of the proceeding and cannot be ruled out on the merits at this stage. Furthermore, in the prior proceedings, the licensing boards had admitted these petitioners as having demonstrated the requisite standing. In view of the fact that this Board has determined, above, that those who may allege injury in fact from the operation of the facility satisfy that requirement with regard to this extension proceeding, these Petitioners would appear to have met all the requirements. However, in apparent reliance upon their being admitted in prior proceedings, Petitioners did not file statements from individual members demonstrating the members' geographic interests and the authorization for Petitioners to represent them in this proceeding. Both the Staff (Tr. 12) and Permittee (Tr. 18) objected to the failure of the organizational petitioners to file the individual statements, and the Board ordered (Tr. 17) that, considering that the membership of the organizations might have changed between the proceedings, there be some renewal of the statements.

Petitioners have since complied with the Board's request by submitting individual affidavits of one member of each of the three constituent organizations indicating residences of three, three and one-half, and nine miles from the proposed facility and containing authorizations for Petitioners to represent them in this proceeding. In its April 14, 1980 response, Permittee contends that the affidavits are insufficient because they do not identify a personal interest that might be affected by the proceeding or a potential injury that may be sustained as result of the proceeding.

The Board determines that these affidavits are sufficient. Each of them refers to the use of the Indiana Dunes National Lakeshore and its resources, the adjacent waters of Lake Michigan, and the public highways passing within a mile of the Bailly site. These affidavits must be read in conjunction with the underlying petition and supplemental petition of Petitioners which alleged potential injuries to each of these interests from the operation of the plant or from construction activities, either of which are sufficient to confer standing. The Porter County Chapter Petitioners have satisifed all of its prerequisites and are *admitted.*

Anna and George Grabowski

These Petitioners reside in Cedar Lake, Indiana, approximately 25 miles from the Bailly site, within the geographical zone of interest. In their second supplemental petition, they contend that the dewatering due to continued construction would injure them because of their use of the Indiana Dunes National Lakeshore for recreation. The Permittee assumes (Response, dated April 14, 1980, at p. 20), as does the Board, that this contention alleges an incremental injury based on the alleged extended period of dewatering, as discussed during the special prehearing conference. On that basis, the Permittee does not object to the admission of the Grabowskis' and the Board *admits* them.

Local 1010 of the United Steelworkers of America

Subsequent to the special prehearing conference, Petitioner submitted the affidavit of Joe Franz, who was a representative of the Union during the second day of the conference, which indicated his residence approximately 8 miles from the proposed site and his authorization to the Union to represent him in this proceeding. In its April 14, 1980 response (at p. 14), Permittee concedes that the affidavit satisfies the technical organizational requirements and establishes the Union's standing to intervene based upon an allegation in the Franz affidavit regarding harm to the interests of Mr. Franz from "further site-dewatering." However, Permittee continues to object to admitting the Petitioner on the ground that the contentions which it seeks to raise are outside of the scope of this proceeding.

Permittee, however, reads the affidavit and attached supplemental statement of Mr. Franz in isolation from the contentions stated in Local 1010's petition. Contention 10-B of the petition contends, *inter alia,* that the impact of the construction of the Bailly plant will exacerbate the harm currently being caused the Indiana Dunes National Lakeshore from the operation of the fossil fuel plant on the same site, and also refers to recommendations for the improvement of the monitoring program for the Bailly construction to mitigate other damage done to the Lakeshore.

Reading together all of the documents submitted by Petitioner, we must conclude that the Petitioner has attempted to fashion, out of its originally-submitted, broad Contention 10-B, a narrow contention limited to the incremental effects of the further period of site-dewatering, pursuant to the suggestions at the prehearing conference that such contention would be admissible. As so limited, we accept that contention and *admit* the Petitioner.

It may be, however, as suggested in Permittee's response to our Provisional Order (at pp. 35-38), that Petitioner did not intend to transform Contention 10-B into a narrow contention limited to site dewatering, so as to afford a firm basis for being admitted to this proceeding. We note that, if Petitioner has no interest in pursuing actively that limited contention, which will be litigated in any event by other admitted organizational petitioners, the Board's admitting that contention will effectively foreclose Petitioner from presently appealing our denial of its other contentions (if the short pilings issue is not admitted), as discussed later.

Petitioner is given 10 days from the service of this Order to indicate that it did not intend to offer a contention limited to dewatering during a prolonged construction period, if that is the situation.

Gary Petitioners

Prior to the special prehearing conference, Petitioners submitted unexecuted affidavits from members of 4 of the 5 constituent organizations, that were executed and resubmitted after the conference. In its April 14, 1980 response, Permittee concedes that the affidavits satisfy the technical organizational requirements of standing, and the Board agrees. As we have stated above, although the Staff and Permittee do not agree, we consider the potential injury from the operation of the plant as satisfying the injury in fact requirements for standing in this proceeding.

However, the Gary Petitioners have raised only one contention, regarding evacuation planning and alleged site unsuitability. As discussed above, emergency evacuation planning is a matter to be considered at the operating license proceeding. To the extent that allegations are made regarding site unsuitability because of the inability to devise satisfactory evacuation plans, the Commission has taken it upon itself to consider all reactors under construction in areas of high population density, which removes this issue from consideration in this proceeding. Consequently, having failed to advance an admissible contention, Petitioners *cannot be admitted* as a party under 10 CFR 2.714.

One of the organizations comprising the Gary Petitioners, as stated in the petition for leave to intervene, is the City of Gary, Indiana. As indicated by the attorney for the Gary Petitioners at the conference (Tr. 62), an

interested municipality may participate in the proceeding under 10 CFR 2.715(c). Accordingly, the Board directed that, within 15 days of the filing of our Provisional Order, the City of Gary indicate whether it desires to participate under 2.715(c) notwithstanding that its sole contention, regarding emergency evacuation and siting, is not admitted. We have now received the response, which indicates that the City of Gary does not desire to be admitted as an interested municipality. The Board, therefore, *denies* the petition to intervene.

Dr. George Schultz

According to Dr. Schultz' petition, he lives within 10 miles of the Bailly site. He is also employed as a clinical psychologist at the Indiana State prison, located within 10 miles of the site, and petitions the Board for intervention because of his concern that there can be no effective evacuation of the prison in the event of a serious nuclear accident.

Without question to the Board, Dr. Schultz has established his geographic zone of interest and potential injury in fact to intervene. However, for the same reason stated with regard to the Gary Petitioners, we cannot accept his sole contention relating to emergency evacuation and site unsuitability as being within the scope of the proceeding. His petition for intervention *is denied.*

The State of Illinois

The State of Illinois is represented by the Attorney General's Office and petitioned for intervention as a party under the 10 CFR 2.714 and as an Interested State under 10 CFR 2.715(c). Prior to the special prehearing conference, the Staff and Permittee objected to granting party status to Illinois under 2.714, although they did not object to the State's participation under 2.715(c) if any of the other petitioners were granted intervention. In its April 14, 1980 response to various filings, filed after the conference, Permittee agreed to the State's admission under 2.714, presumably because of its Contention 3, relating to site-dewatering, as discussed later. The Board agrees to the *admission* of the State of Illinois as a party under 10 CFR 2.714 and as an Interested State under 10 CFR 2.715(c).

The Lake Michigan Federation

Petitioner filed a timely petition explaining its membership of over 700 individuals and over 100 civic and environmental organizations, and their interest in the use and enjoyment of many of the natural landmarks near the Bailly site (Indiana Dunes National Lakeshore, Cowles Bog National Landmarks, Lake Michigan, etc.). The Petition, however, did not raise any aspect of the proceeding as to which the Petitioner wished to intervene,

stating only that the Petitioner wished to intervene "as to all respects of the subject matter of the proceeding." (Petition, ¶5.) No supplemental petition was filed, as required by 10 CFR 2.714(b) and the Board's Order of February 7, 1980, at least 15 days prior to the special prehearing conference, and nothing further was heard from Petitioner until its counsel appeared at the special prehearing conference. On the second day of the conference when individual contentions were discussed, counsel had absented himself but was replaced by an individual member of the Federation who sought to present oral contentions, since no written ones had been prepared. (Tr. 172-173.) The Board ordered (Tr. 175) that no oral contentions be heard at the proceeding but that Petitioner could submit a late-filed supplemental petition with contentions, together with a statement of reasons why the Board should exercise its discretion in accepting those contentions.

Subsequent to the prehearing conference, Petitioner submitted the affidavit of an individual member, authorizing the Federation to represent his interest in this proceeding, which he indicated resided in his utilization of Lake Michigan as a sailor, swimmer and fisherman. He claimed that his health and safety would be jeopardized in the event that the waters of Lake Michigan were adversely impacted by the construction of the plant at the Bailly site. On the basis of our discussion, above, regarding potential injury-in-fact, with which the Permittee and Staff disagree, we accept the affidavit as satisfying the requirements of standing.

At the same time, Petitioner also submitted its first supplement to the petition containing its "contentions," together with a motion to grant additional time for them to be filed (*i.e.*, accept them out of time). These contentions consisted of a statement adopting Contention 4 of the State of Illinois and all of the contentions except Contention 2 of the Porter County Chapter Petitioners. Petitioner also requested that an additional contention be considered, which amounted to an argument in favor of rehearing all of the issues already decided in the construction permit proceeding on the ground that the five-year period of the original construction permit should be the limit for which the construction permit findings are considered as *res judicata* or *collateral estoppel.*

As indicated at the conference (Tr. 175) and as required by 10 CFR 2.714(b), a granting of additional time for filing these contentions must be based upon a balancing of the factors listed in 10 CFR 2.714(a)(1). On balancing these five factors, as listed below, the Board determines that Petitioner should *not be admitted.* These factors are:

"(1) 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 represented by existing parties.

(v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding."

As good cause for its failure to file on time, Petitioner states that its sole attorney and administrator underwent surgery during January, February and March, requiring substantial absences from the office and shortened working days, and further states that a major cause of the delay was the over 250 hours spent by its staff in analyzing the dewatering issue necessary to present the contentions. In light of the fact that the attorney was not totally incapacitated, we cannot consider his medical condition as good cause for failing to submit the contentions on time, since he was apparently able to file a timely request for an extension of time (which he chose not to), the granting of which would have permitted a timely filing of contentions. Furthermore, although Petitioner alleges spending over 250 hours on the issue of dewatering, its attempt to adopt the dewatering contentions of other petitioners without any further specificity or elaboration casts some doubt on its dedication to this proceeding because of its having expended those hours in analyzing the problem without allocating a small portion of that time for formulating the contentions and presenting them in a timely fashion as required by the rules.

Although the Federation does not address the question of whether other means are available to protect its interest, it is clear that only by its participating in this proceeding would Petitioner be heard on the issues before the Board. In view of the fact that Petitioner's foremost interest relates to construction dewatering, which the Board has agreed to hear, this factor weighs heavily in favor of the Federation's participation in this proceeding.

Petitioner also presents a persuasive argument for its ability to assist in developing a sound record by claiming to have "engineering and natural science capacity to work with the dewatering issue and to bring substantial and credible information to the Board for decision." It claims further that its "Lake Michigan Science Task Force has the skills of biolgists, chemists and others who provide technical assistance to the Staff and public." However, Petitioner has not provided any of the specifics with regard to the qualifications of members of its staff or task force or any of the results of its claimed concentrated analysis of the dewatering issue. Even if its claimed

expertise were substantiated, it appears that Petitioner, as an independent party in this proceeding, is unable to communicate any of its expertise to the Board. The only role that the Board can perceive for the Federation that would assist in developing a sound record is for the Federation to render technical assistance to one of the admitted parties to the proceeding—not as a consolidated party, but as a technical advisor. We do not profess any insight into which party would benefit the most from having Petitioner's assistance.

It appears that the Federation's interests will be fully represented by existing parties, without Petitioner's intervention: Petitioner has merely attempted to adopt the contentions presented by other parties without any further elaboration or specificity; Petitioner's interest in the subject matter of the proceeding does not appear to be any more extensive or of a different kind than that of the other petitioners; and the performance of counsel for the other petitioners in presenting the common interest of the petitioners to the Board has until now been commendable and has far surpassed that of the Federation's representatives. There is no reason to believe that the participation of the Federation as a party would add anything to the representation of Petitioner's interests by the other intervenors.

In view of the Federation's mere adoption of the contentions of other parties, its participation would not be expected to broaden the issues. Even though Petitioner has not fulfilled its requirements under the regulations and prior Board orders in a timely fashion, its delay has so far not affected the pace of the proceedings and it is not anticipated that Petitioner's demonstrated lack of diligence would delay the proceedings in the future. However, since only that factor and the factor of the unavailability of any other means whereby Petitioner's interests will be protected weigh in Petitioner's favor, and all of the other factors weigh heavily against Petitioner, the Board sees no advantage to Petitioner's participation in this proceeding as a party.

Petitioner also suggests (First Supplement to Petition, at pp. 1, 4) that it should be considered as having adopted Porter County Chapter Petitioners' Contention 8 since there were no objections to its orally adopting that contention at Tr. 269. We do not accept that proposition. The Board had already ruled (Tr. 175) that it would not accept any oral contentions at the conference and, in that context, it was not necessary for objections to be interposed each time the Federation embraced one of the other petitioners' contentions in furthering the discussion. Nor, do we even think it likely that any of the participants considered the Federation's statement at Tr. 269 as offering the contention at that point, in advance of its prospective written submission.

V. RULINGS ON CONTENTIONS

Although we had not ruled on specific contentions in our Provisional Order, except for the site suitability issue, the short pilings issue and ash pond seepage (discussed below), the Board had hoped to rule on the admissibility of each contention in this Order. However, the Porter County Chapter Petitioners' Contention 12 ("PCCP 12") and the opening paragraph of the State of Illinois' Supplemental Petition attempted to incorporate by reference as contentions in this proceeding unspecified issues that had been raised in documents filed with the NRC during 1979, pursuant to requests for hearings in other proceedings.

Petitioners contended that there was insufficient time given them to distill specific contentions from these documents for presentation to the Board in their supplemental petitions or at the special prehearing conference.[3] These prior documents were not submitted with the petitions or supplemental petitions and had not yet been received by the Board. Petitioners claimed that these unspecified contentions should be considered as having been filed on time. The Permittee objected (Tr. 326-327) on the ground that this incorporation by reference of documents that do not contain a formulation of specific contentions does not achieve the specificity required by 10 CFR 2.714 and that there exists ample authority, *Tennessee Valley Authority* (Brown's Ferry Nuclear Plant, Units 1 and 2), LBP-76-10, 33 NRC 209 (1976); *Alabama Power Company* (Allen R. Barton Nuclear Plant, Units 1, 2, 3 and 4), LBP-75-32, 1 NRC 612 (1975), for not accepting contentions based upon incorporating documents by reference.

Without knowing the nature of the documents, their scope, and the voluminousness of the contentions that could be fashioned therefrom, the Board (Tr. 329-335) declined to accept those contentions at that time as timely filed. It ordered, as proposed by counsel for the participants, that they confer with regard to the wording of the "contentions" that might be contained in these documents.

In our Provisional Order, we clarified the Board's position. We ordered that all contentions that petitioners argue should be treated as timely filed because they were incorporated by reference in the supplemental petitions should be filed within 25 days after service of the Provisional Order. We indicated that we would review these reworded contentions if they were filed within that time limit to determine whether they should be treated as timely-filed contentions that could be ruled upon with regard to admissibility without further submissions in support of, or opposition to, the Board's

[3]The full discussion regarding the propriety of raising contentions by incorporation by reference is found at Tr. 324-336.

accepting the contentions at its discretion under the test provided by 10 CFR 2.714(a)(1).

We have since been notified that the parties have met and have not reached any agreement with regard to the wording of contentions, and have received, within the 25-day time limit, specific contentions based upon the documents incorporated by reference formulated by the Porter County Chapter Petitioners and adopted also by the State of Illinois.

Taking into account the full circumstances, including the short time (approximately two weeks) between service of the Order Setting the Prehearing Conference and the date on which the supplemental petitions were due, the promptly filed Motion for Continuance of the Conference based upon the Petitioners' attorneys having other obligations, the diligence and thoroughness with which all other matters have been handled by Petitioners, and the complexity of the newly-filed contentions, the Board determines that the incorporation by reference constituted a substantial effort to file timely contentions and will be accepted as such by the Board. Obviously, these circumstances would also amount to a showing of good cause for not having filed these specific contentions before the prehearing conference but, because we are not viewing our acceptance of the contentions (as to timeliness) as a discretionary matter, we need not discuss the other four elements in the 2.714(a)(1) test.

In viewing these newly-filed contentions we note that, in general, they appear to be matters not directly related to the requested extension, matters that are not fundamental to the construction of the facility (as are the issues of siting and foundation pilings), and/or matters that would not appropriately be heard before the operating license proceeding under any circumstance. However, in the interests of fairness to all the parties (even though, if we assume that these contentions were actually filed before the prehearing conference by their incorporation by reference, Petitioners had opportunity to speak in their favor at the prehearing), we will schedule further filings with regard to the admissibility of these contentions. The parties have 15 days after service of this Order to submit arguments in support of, or opposition to, the admissibility of these newly-filed contentions. Within ten days after the service of these submissions, the parties may reply to them.

The Board will now rule on the other contentions.

PCCP 1, 3; Illinois 2

Porter County Chapter Petitioners' Contentions 1 and 3, and the State of Illinois' Contention 2, assert that the reasons given by NIPSCO for the delay in completing construction were not the real reasons for the delay; the real reasons do not constitute good cause for the delay; and, with regard

to the reasons that constitute good cause, the period of extension is unreasonably long. To the extent of those assertions, the Staff (Tr. 186) and Permittee (Tr. 191, 197-198) do not object to admissibility. However, included in the contentions is an assertion that only matters beyond the control of the Permittee may constitute good cause for the delay in construction and the suggestion that the Board must look into the merits of every matter, the mere presence of which may have contributed to the delay. As a example, PCCP 3 seeks to litigate all TMI-related issues because the Staff's allocation of resources to TMI-related projects may have delayed its review of issues arising during the construction of Bailly and contributed to the delay in construction.

As discussed above, the Board has already determined that matters within the control of the Permittee may constitute good cause for the delay in construction, although they may not be as weighty as reasons beyond Permittee's control. Furthermore, the Board has reserved judgment, pending receipt of answers to questions propounded in this Order, on the admissibility of the short pilings issue, one of the matters, the presence of which may have contributed to the delay in construction. Except for that short pilings issue, the Board admits these contentions only to the extent that they assert that the reasons for the delay are other than offered by Permittee, that the actual reasons do not constitute good cause for the extension, and that the period of extension requested is unreasonable. Although discovery can now proceed on these contentions as so limited, we will require that the facts underlying these assertions be specified before we go to hearing.

PCCP 2

In its August 31, 1979 letter to the Director of Nuclear Reactor Regulation, NIPSCO requested that the construction permit "should be extended to December 1, 1987, or 98 months after the NRC concurs in resumption of pile placement." The contention asserts that the request of an extension in the alternative, not to a specific date, but for a period of time, is improper under Section 185 of the Atomic Energy Act and 10 CFR 50.55(b). At the conference (Tr. 189-190), Permittee resolved that issue by indicating that the reference to 98 months after pile placement was merely explanatory of the requested extension to December 1, 1987, the date certain required by the statute and regulation. With that clarification, the contention is no longer viable and is *not admitted.*

PCCP 4, 5; Illinois 3; Grabowskis' Dewatering (2nd Supp. Pet., at p. 7)

These contentions assert that the granting of the extension would have adverse effects because it would prolong the period of dewatering necessary in order to complete construction over the prolonged period of time. During the discussion (Tr. 203-230), the Porter County Chapter Petitioners and the State of Illinois unequivocally represented that they had no intention of relitigating matters covered in the prior proceedings, and that all that would be considered under these contentions are the incremental effects on the environment from the additional period of dewatering. With those limitations, the Staff and Permittee indicated that they had no objection to the admissibility of these contentions. (Tr. 203, 214). The Board admits these contentions as so limited and, in further clarification, excludes from consideration in this proceeding any effect from the prolonged period of construction that was considered to be an effect of the initially-authorized construction and determined to be *de minimis.*

Porter County Chapter Petitioners allege (Tr. 221-227) that one difference between dewatering during the extended period and during the original period considered at the construction permit proceeding was the contract entered into by NIPSCO and the U.S. Department of Interior to seal ash ponds on the Bailly site to prevent seepage from those ash ponds estimated to approximate 1,000,000 gallons of water per day. Petitioners contend that this would eliminate the recharging effect of the seepage on the dewatering that was taken into account by the licensing board at the construction permit hearing. Permittee contends (Tr. 221-222) that the issue of ash pond seepage had already been resolved at the construction permit proceeding by the Board's not taking any recharging impact of the seepage into account in the first instance so that the sealing of ponds prior to the extended construction period would not alter the factual context in which that prior board's determination had been made. The Board requested (Tr. 223, 227-230) that the parties brief this issue involving ash pond seepage to aid the Board in determining whether that issue could be disposed of at this stage in the proceeding. If, in fact, the prior licensing board had clearly resolved this issue the Petitioners would be collaterally estopped from relitigating this issue, as they concede.

In our Provisional Order, we determined that the question of ash pond seepage could not be resolved at this stage in the proceeding. We referred to the construction permit board's discussion of dewatering and ash pond seepage at *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear 1), LBP-74-19, 7 AEC 557, 589-591 (1974) to determine whether the discussion was dispositive of the issue, and decided that it was not. We referred to the briefs on this issue submitted by the Staff and

Permittee in support of resolving this issue at this stage, and noted that they relied not only upon the face of the licensing board's decision, but also upon the underlying record in the proceeding. Then, on the basis of *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980) and *Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424 (1973), we concluded that, since we could not resolve the matter only by referring to the face of the prior decision, we could not resolve the issue in advance of motions for summary disposition or evidentiary hearings that might be necessary to formally bring the record of the prior proceeding before this Board.

In its response to our Provisional Order, at pp. 27-28, Permittee points out (correctly, we agree) that both the initial decision and the hearing transcript of the prior proceeding are part of the official record, and that the Board may rely upon all parts of that official record without violating the principles of *Allens Creek*, ALAB-590, *supra.* If this Board can establish from viewing the entire record in the prior proceeding that the prior Board had resolved an issue, that issue should be considered as having been resolved for purposes of this proceeding under the doctrine of *res judicata* or *collateral estoppel.*

With that in mind, we reviewed the prior record more carefully and reread the briefs submitted by the parties here. We note that the Staff has changed its position, although that change is not acknowledged. While it initially concluded (Staff brief, dated 4/10/80, at p. 5) that the "interrelationship between ash pond seepage and construction dewatering...was fully and finally decided during the Bailly construction permit hearings and is not a proper subject for relitigation in this matter," it now (Staff Response to Provisional Order, dated June 24, 1980, at p. 11) asserts that *collateral estoppel* applies only to an issue relating to the effect of continuing ash pond seepage on dewatering. But, the Staff continues, "To the extent that construction dewatering continues following the elimination of the effects of ash pond seepage, this represents a litigable issue in this proceeding." Considering that Petitioners intend only to raise the issue of ash pond seepage in the context of the *absence* of seepage being a changed circumstance from what was taken into account by the prior board, the Staff, apparently, now supports Petitioners' position that that issue should be heard.

Whatever may be the respective positions of the parties, it is the record in the prior proceeding that must govern the disposition of the ash pond seepage issue. Reading the portions of the record cited to us by the Permittee, it does appear that Permittee's experts represented to the prior board that the recharging effect of the ash pond seepage was not taken into

account in their analysis, which made the analysis more conservative than the true conditions (testimony of Annambhotla and Brissette, following CP. Tr. at pp. 10, 335, at pp. 5-6), and that the board accepted their analysis. To the extent, therefore, that the analysis did eliminate the recharging effect of ash pond seepage, Petitioners' assertion that the sealing of the ash pond brings changed circumstances before this Board wth regard to the extended period of construction, cannot be accepted. However, notwithstanding the assurances of those experts, we cannot be satisfied merely from their statements that the full recharging effect of ash pond seepage was eliminated from their calculations.

We will permit Petitioners to attempt to establish that the calculations relied upon in the prior proceeding did not fully eliminate the recharging effect of the ash pond seepage and that, if they did not, the elimination of the recharging effect of ash pond seepage over the prolonged period of construction would create an adverse environmental impact. As so limited, we admit the ash pond seepage aspect of these contentions.

PCCP 6

In this contention, the Porter County Chapter Petitioners allege that two of the reasons why the construction of Bailly was not completed by the expiration date in the construction permit were the decrease in the need for power and the increase in the estimated cost of building the proposed plant, which Petitioners allege do not constitute "good cause" for the extension of the permit.

To the extent that the contention suggests reasons other than those given by Permittee for the delay in construction, the contention is unnecessary and duplicative of PCCP 1, 3 and Illinois 2, which the Board has admitted so as to allow Petitioners to discover the actual reasons for the delay in completing construction and offer those reasons as not constituting good cause for the extension. To the extent that PCCP 6 goes further and attempts to litigate the issues of need for power and financial capability that were decided at the construction permit proceeding, the contention is not admissible. Since the admissible portion of this contention is already covered by admitted prior contentions, Contention 6 is *not admitted.*

PCCP 7; Illinois 5

These contentions bring into question the alleged lack of technical competence of Permittee, its contractors and its sub-contractors, as allegedly demonstrated by the failure to complete Bailly by the expiration date of the construction permit. To the extent that Petitioners seek to establish that the delay was attributable to technical incompetence which brings into question Permittee's ability to construct a safe facility, we admit

the contentions as falling within the scope of this proceeding as deliniated by *Cook*, ALAB-129, *supra.* To the extent, however, Petitioners seek to litigate any alleged lack of technical ability not actually manifested in the delay in construction, that matter has already been determined in the construction permit proceeding and is not admissible here. We specifically do not admit the portion of Illinois 5 which requires that NIPSCO and its contractors prove in this proceeding that they are technically competent in order to receive the extension.

As limited above, these contentions *are admitted.*

PCCP 8; Illinois 7A and 7B; Local 1010 2

These contentions raise the short pilings issue, discussed above. We will determine whether to admit these contentions after we receive responses to the questions we posed.

PCCP 9; Illinois 4; Local 1010 4

These contentions attempt to bring TMI-related and other Class 9 accidents into this litigation. Petitioners have not demonstrated any nexus between those types of occurrences and the requested extension, or any special circumstances that would require considering those types of occurrences in this proceeding. The contentions *are denied.*

PCCP 10; Illinois 1

These contentions seek to compel the Staff to prepare an Environmental Impact Statement with regard to the construction permit extension. It was agreed by the parties (Tr. 302-305) that these contentions would be deferred until the Staff completes its evaluation and presents it in this proceeding in whatever manner it deems appropriate. At that point, Petitioners can raise whatever contentions are appropriate to that evaluation.

PCCP 11

This contention consists of Petitioners' statement on the scope of the proceeding. No specific issues are raised. The Board has ruled on the scope of the proceeding, above. This contention would serve no further purpose, and *is denied.*

PCCP 12

This contention incorporated by reference documents previously filed with the NRC discussed above. Specific contentions based upon these documents have now been received and will be ruled on after the parties have had their opportunity to comment, as provided above.

Unnumbered Contentions Raised in the PCCP Petition

1. Significant Hazards Consideration.

In their petition to intervene, the Porter County Chapter Petitioners questioned whether the Commission's finding in the Notice of Opportunity for Hearing that the proposed amendment does not involve a significant hazards consideration was justifiable, correct, or supportable. In view of the fact that the Commission has exercised its discretion to provide the opportunity for a hearing prior to the issuance of the proposed amendment, the determination of whether the action involves a significant hazards consideration is immaterial. Furthermore, since Petitioners' only concern was that the Staff might take action on the application before the Board decided whether it would initiate a hearing, and the Staff represented that it would not (Tr. 342), the issue has been satisfactorily resolved.

2. Timeliness and Sufficiency of the Amendment Applications.

Petitioners question whether the application for the extension dated February 7, 1979, and August 31, 1979, were "timely and sufficient" within the meaning of the Administrative Procedure Act, 5 USC 558(c).

The construction permit was due to expire on September 1, 1979, and Permittee filed an application on February 7, 1979, for an extension of the construction completion date to September 1, 1985. That application was docketed by the NRC Staff, pursuant to 10 CFR 2.109, which provides that, if an application for a renewal of a license is filed at least 30 days prior to the expiration of an existing license, the existing license will not be deemed to have expired until the application has been finally determined. Subsequently, on August 31, 1979, Permittee filed an amendment to its February 7, 1979 request for the purpose of extending that completion date until December 1, 1987. That amendment of application was duly docketed by the NRC Staff.

At the prehearing conference (Tr. 349-350), it was disclosed that Petitioner's basis for its contention was Permittee's filing of the amendment on August 31, 1979, only one day before the expiration of the construction permit, rather than at least 30 days before, as provided by 2.109. Petitioner construes the August 31, 1979 filing as having the twofold effect of making the February 7, 1979 filing incomplete and, then, completing it after the expiration of the time limit specified by 2.109.

We rule that contention out on the merits and because it misapplies the Administrative Procedure Act. The February 7, 1979 application for extension was sufficient by itself, and we do not understand Petitioner to contend to the contrary. We cannot accept the position that a later attempt to amend that sufficient application should have the effect of rendering that original application insufficient, unless the proposed amendment discloses an existing insufficiency - a situation not present here, nor even alleged.

Furthermore, we would rule out on the merits any attack on the August 31, 1979 application amendment, since it was filed at least 30 days before the expiration of the latest construction completion date requested in the February 7, 1979 application (to September 1, 1985), and, in any event, it appears unlikely that any action on the February 21, 1979 application could have resulted in the granting of an extension to a date before September 30, 1979.

As to the application of the Administrative Procedure Act, we agree with Permittee and the Staff (Tr. 346-349) that the Staff is charged with the responsibility for accepting the extension application for docketing, and that it is outside of the jurisdiction of the Board to review the correctness of the decision to docket the application as being timely and sufficient - at least in the absence of any allegation suggesting something in the nature of fraud in the filing or docketing. Petitioner misconstrues the purpose of 5 USC 558(c), as affording a basis to attack a renewal application on the ground of being untimely or insufficient. Rather, the thrust of the section is to protect applicants and licensees by requiring the agency to afford them the appropriate administrative procedures once the renewal application has been timely filed. See *County of Sullivan, N.Y.* vs. *CAB,* 436 F.2nd 1096, 1099 (2nd Cir. 1971); Attorney General's Manual on the Administrative Procedure Act, 91-92 (1947). It would be grossly unfair to adopt a system under which the applicant would be assured of the timeliness and sufficiency of its application by the agency's docketing the application and, after the time for filing has expired, be told that the timeliness and sufficiency are still open to question - unless there is an allegation of fraud involved in the filing or docketing.

The contention *is denied.*

Illinois 6; Local 1010 13

These contentions seek to bring the issue of site unsuitability into this proceeding. For the reasons stated above, with regard to the sole contentions of the Gary Petitioners and Dr. Schultz, the contentions *are denied.*

Illinois 7C; Local 1010 1

These contentions alleging the inadequacy of the Mark II containment, unlike the siting and short pilings issues which are matters preliminary to construction, appear to be construction design issues of the type that 10 CFR 50.35(a) envisions will be resolved during construction and reviewed at the operating licensing proceeding. The propriety of raising this issue before the operating license proceeding has already been litigated with regard to this facility in *Porter County Chapter* vs *NRC,* 606 F.2nd 1363

(D.C. Cir., 1979), in the context of the Staff's denial of petitions under 10 CFR 2.206 for the revocation of the construction permit. In upholding the Director's denial of the petitions, the Court of Appeals accepted his reliance upon the continuing generic efforts by the Staff to ensure the resolution of the problem as supporting his being reasonably assured of a satisfactory resolution of the safety issue during construction. Petitioners, here, have raised no matters that would constitute a *prima facie* showing that the generic efforts listed in the Circuit Court's opinion (at p. 1370, fn. 17) would not amount to the reasonable assurance required under 10 CFR 50.35(a).

These contentions *are denied.*

VI. WAIVER OF 10 CFR 50.55(b)

Together with their petitions for leave to intervene, the State of Illinois and Porter County Chapter Petitioners have filed petitions for waiver of, or exception to, 10 CFR 50.55(b) in the event that that regulation is interpreted as limiting a "good cause" proceeding to the reasons why construction was not completed by the latest completion date in the construction permit. They contend that the application of 50.55(b) in that manner would not serve the purpose for which the rule was adopted, to wit, implementing Section 185 of the Atomic Energy Act, 42 USC 2235.

To the extent that we have discerned the Commission's intent in promulgating the regulation, we have applied the regulation to this proceeding as broadly as that intent and can find no ground for certifying the petitions for waiver of the regulation to the Commission.

Stated another way, the Board does not find that petitioners have made a *prima facie* showing that any contention raised that is not related to the delay in construction should be heard in order to further the purpose for which 10 CFR 50.55(b) was adopted. Had petitioners made such a showing, the Board would have admitted that contention as falling within the scope of 50.55(b) (which the Board finds as broad as Section 185 of the Atomic Energy Act) without having to certify the matter to the Commission under 2.758(d).[4]

The petitions for waiver of, or exception to, 10 CFR 50.55(b) *are denied.*

VII. FURTHER SCHEDULING

A. Discovery shall commence forthwith on the admitted contentions.

[4]See, however, fn. 2, above.

B. Objections to this Order may be filed within the time limits prescribed by 10 CFR 2.751a(d): 5 days after service of this Order by the parties, 10 days after service by the Staff.

C. Appeals may be taken within the time limits prescribed by 10 CFR 2.714a(a): 10 days after service of this Order. Briefs in support of, or in opposition to, any appeal may then be filed within 10 days after service of the appeal.

D. Responses to the Board's questions on the short pilings issue shall be filed 10 days after service of this Order.

E. Local 1010 is given 10 days after service of this Order to indicate that it did not intend to transform Contention 10-B into a narrow contention limited to dewatering over a prolonged construction period, if that is the case.

F. Arguments in support of, or opposition to, the admissibility of the newly-filed contentions of Porter County Chapter Petitioners and the State of Illinois shall be filed within 15 days after the service of this Order. Replies may be filed within 10 days after service of the arguments.

Mr. Glenn O. Bright, member, and Dr. Richard F. Cole, member, join in this Order.

BY ORDER OF THE BOARD

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Herbert Grossman, Chairman

Dated at Bethesda, Maryland,
this 7th day of August, 1980.

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
(Three Mile Island Nuclear Station, Unit No. 1) **August 8, 1980**

The Licensing Board requests the Commission to extend its rule governing procedural assistance in adjudicatory licensing proceedings to this restart proceeding so as to allow the board to consider requests from intervenors for free transcripts.

CERTIFICATION TO THE COMMISSION

The immediately effective rule, Procedural Assistance in Adjudicatory Licensing Proceedings, 45 FR 49535, July 25, 1980, authorizes presiding officers to arrange for free transcripts upon the request by parties other than an applicant "...in any adjudicatory proceeding on an application for a license or an amendment thereto...." 45 FR 49537. One intervening party in this proceeding[1] has made a request under the rule and the board has learned informally that other parties intend also to request transcripts.

In anticipation of such requests, the board consulted with the Docketing and Service Section, Office of the Secretary and with Commission attorneys involved in drafting the Procedural Assistance Rule, who pointed out that the Three Mile Island Unit No. 1 restart proceeding is probably not covered by the rule because it is not a proceeding on an application for a license or license amendment. We agree with this interpretation and believe

[1]Sholly Motion to Board for Routine Free Distribution of Hearing Transcripts Pursuant to Notice, 45 FR 49535-49537, dated July 30, 1980.

that we are without authority to grant requests for free transcripts in this proceeding.

The purpose of this certification is to bring to the attention of the Commission the fact that the terms of the Procedural Assistance Rule exclude this proceeding, and to request that the provisions of the rule be extended to apply to this proceeding.

Neither the licensee nor the NRC staff has yet responded to the intervenor's request for free transcripts but neither objects to this certification. By this certification we request only the authority to consider requests for free transcripts, we do not certify the requests themselves.

In the board's Certification to the Commission on Psychological Distress Issues, February 22, 1980, LBP-80-8, 11 NRC 297, we reported to the Commission in connection with the Commission's stated interest in considering intervenor funding in this proceeding, that we had no recommendation to make on that issue. We stated that our views on intervenor's assistance are "...individual and philosophical, and not likely to be helpful to the Commission." 11 NRC at p. 309. This is still the case. In making this request, we are seeking only to be permitted to employ the means provided in the Procedural Assistance Rule to assist the board in producing a complete and reliable evidentiary record without undue delay.

The board requests the Commission to consider the following points:

1. Traditionally board members (and sometimes the staff) lend transcripts to intervenors during the hearings to avoid delays caused by confusion over earlier events in the hearing and to improve the quality of the record. This results in some inconvenience to the board whose efficiency is impaired by the need to share transcripts. In this proceeding there are many parties without resources to purchase transcripts and not enough transcripts to lend.

2. In its August 9, 1979 Order and Notice of Hearing, CLI-79-8, 10 NRC 141, the Commission directed the board to conduct the proceeding expeditiously and to avoid delay caused by unneeded cross-examination. *Id.* at p. 147. The board has issued specific instructions to intervenors to limit cross-examination to that necessary for a full and true disclosure of the facts, and we have outlined strict procedures intended to accomplish that result.[2] The intervenors themselves have, on at least seven occasions, met at their own expense to arrive at consolidation agreements, to designate lead intervenors, and to arrange for the efficient use of cross-examination.[3]

[2]Memorandum and Order on Prehearing Conference of May 13, 1980, dated May 22, 1980, at pp. 9-11, and Memorandum and Order, dated May 5, 1980, at pp. 5-7.
[3]Sholly Report to the Board on Consolidation Proposal, dated July 29, 1980.

Transcripts are fundamental tools used in effective cross-examination. They may be essential to efficient cross-examination. Transcripts can be effectively used by intervenors to assist each other to be efficient where they have consolidated contentions or have designated lead intervenors on particular issues. If they do not have transcripts, the board may be less able to limit cross-examination to efficient and productive non-repetitive questioning.

3. The quality of cross-examination, and for that matter, direct examination, is improved by informed examiners.

4. The board has already instructed the parties that it intends to apply the provisions of 10 CFR 2.754(a) to this proceeding, *i.e.,* the parties will be required to file proposed findings of fact, conclusions of law and proposed form of order or decision; that any failure to do so may be construed by the board to be a default according to Section 2.754(b). Tr. 1973-78. Access to transcripts is very important to the prompt filing of accurate proposed findings. If intervenors must share the few transcript copies presently made available in public document rooms, either proposed findings will be delayed, or if not delayed, they will be reduced in accuracy — probably both.

5. When we speak of transcripts being useful in developing a complete and reliable record without undue delay, we are not referring to contentions relating to the personal interests of individual intervenors in the proceeding. Many of the contentions are parallel to mandatory issues required to be considered in the notice of hearing and all are within the scope of the hearing. We cannot identify any contentions relating solely to an intervenor's private interest, all are related to a broader public interest. The board believes that it will be assisted in arriving at a more reliable initial decision in this proceeding by intervernors equipped with fundamental litigation tools, particularly transcripts.

6. Even from the point of view of those interested in an early restart of TMI-1, we cannot identify any disadvantage to providing transcripts to intervernors in this proceeding. The board has the authority to insist upon an efficient hearing and we have used this authority. We will not permit access to transcripts to become an implement for delay. To the contrary, we will regard transcripts as a reason for not accepting some traditional delays. With a shorter hearing and record, with greater efficiency in preparing findings and the initial decision, much if not all of the cost of providing transcripts will be recovered.

CONCLUSION

The board requests the Commission to extend the provisions of the Procedural Assistance Rule to this proceeding for the purpose of assisting the board in developing a complete and reliable record without undue delay.

THE ATOMIC SAFETY AND
LICENSING BOARD

Ivan W. Smith, Chairman

Bethesda, Maryland
August 8, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Frank F. Hooper
Glenn O. Bright

In the Matter of **Docket No. 50-358-OL**

CINCINNATI GAS AND ELECTRIC COMPANY, *et al.*
(William H. Zimmer Nuclear Station)

August 20, 1980

The Licensing Board denies an intervenor's untimely motion to admit additional contentions and sets forth the circumstances under which the intervenor may seek to become a co-sponsor of an existing contention.

NRC: CONSIDERATION OF ECONOMIC MATTERS

Once need for power has been established, the NRC has the authority to consider economic costs, aside from antitrust questions, only in terms of an applicant's financial qualifications and as an element in the evaluation of alternatives which must be undertaken during the environmentally review of the facility. In the latter regard, economic costs can only be considered if there exists an environmental superior alternative method of producing power. *Consumers Power Company* (Midland Plant, Units 1 and 2) ALAB-458, 7 NRC 155 (1978).

OPERATING LICENSE PROCEEDINGS: ENVIRONMENTAL ISSUES

In contrast to safety issues, environmental issues which have been considered during a construction permit proceeding are normally only reconsidered at the operating license stage upon a showing of significant changed circumstances. 10 CFR 51.21, 51.23(e).

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

The acceptance by a licensing board of a petitioner's submission of nontimely contentions is dependent upon a balancing of the following factors:

(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 represented by existing parties.

(v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

10 CFR 2.714(a)(1) and (b).

MEMORANDUM AND ORDER DENYING MOTION TO ADMIT ADDITIONAL CONTENTIONS

On July 16, 1980, Dr. David Fankhauser, an intervenor in this operating license proceeding, filed a motion to admit additional contentions. On July 31, 1980 and August 5, 1980, the Applicants and NRC Staff, respectively, filed responses in opposition to the motion. By a filing dated August 7, 1980, ZAC-ZACK, another intervenor, supported Dr. Fankhauser's motion.[1] For reasons set forth below, we deny the motion. This denial is without prejudice, however, to Dr. Fankhauser's seeking to become a co-sponsor with the Miami Valley Power Project (MVPP) of existing Contention 13, under certain circumstances which we hereafter spell out.

A. This proceeding commenced in 1975, and Dr. Fankhauser has been a party from its outset. In considering his newly proposed contentions, however, we must be guided by the Commission's rules governing late-filed contentions. 10 CFR 2.714(a)(1) and (b). Before turning to whether Dr. Fankhauser has furnished an adequate excuse for his tardy filing, however,

[1]In accordance with the NRC Rules of Practice, the ZAC-ZACK response should have been filed by July 31, 1980. See 10 CFR 2.730(c), 2.710. We thus could reject it as untimely. Because we are reluctant to take a position which may preclude litigation of safety or environmental issues relevant to this facility without giving every party an opportunity to be heard, we have considered the ZAC-ZACK filing in reaching our decision on Dr. Fankhauser's motion. We caution ZAC-ZACK, however, that it is expected to abide by applicable time limits. If it needs additional time, it can file a motion requesting an extension of time. See 10 CFR 2.711.

we will first discuss whether his contentions are acceptable as contentions. For if they are not, it matters not whether they were timely filed.

Dr. Fankhauser has advanced two contentions, the first of which is subdivided into three parts which, in effect, are separate claims. We set them forth in the margin.[2]

1. As can be seen, the first portion of proposed Contention 1(a) and proposed Contention 1(b) in its entirety relate solely to the reasonableness of the economic costs of the facility. They assert that these costs are "too high" and that consumers will be unable to afford electricity from the plant. Dr. Fankhauser points to recently increased plant cost estimates and asserts that the reasonableness of such costs should be analyzed by us during our consideration of whether to authorize an operating license.

We disagree. It is well settled that NRC's regulatory authority over purely economic matters of this sort is strictly limited. Once need for power has been established, economic cost may be considered, aside from antitrust questions, only in terms of the Applicants' financial qualifications and as an element in the evaluation of alternatives which must be undertaken during the environmental review of the facility. In that regard, as the Staff observes, unless some alternate way of producing needed power is environmentally superior, "there is no need to compare the cost of

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[2]*Proposed contentions:* 1. The economic costs of the Zimmer Power Station (hereinafter Zimmer) do not justify the granting of an operating license to Applicants because:

(a) the construction, operation, maintenance and decommissioning costs of Zimmer are too high and are beyond the financial capability of the Applicants;

(b) as a result of the excessive construction, operation, and decommissioning costs of Zimmer, a substantial percentage of the residential customers in the Applicants' service areas will be financially unable to afford to purchase necessary electric service from the Applicants as a result of the costs of Zimmer being passed to the Applicants' customers through Applicants' rate bases; and

(c) the need does not exist for the potential energy from Zimmer as originally projected through anticipated growth in the Applicants' peak demand in their respective service areas;

2. The data in the benefit-cost analysis of the Final Environmental Statement (NUREG-0265, 1977) related to the Operation of Zimmer is significantly incorrect and in need of revision which therefore undermines the entire benefit-cost anaylsis of Zimmer. Some of the incorrect data used in NUREG-0265 include: the estimated capital costs of Zimmer $470 million in 1977 (now estimated by the Applicants to be approximately one billion dollars); the 1977 expected plant capacity of 60%; the estimated $430 million fuel costs and the $130 million operation and maintenance costs; the decommissioning costs of $85 million at 1979 cost levels; the estimated 79 person operating force; and the analysis that no significant economic or social costs are expected from operation of Zimmer (the occurrence and anaylsis of the event at the power station at Three Mile Island suggest that both economic and social costs can be expected from operation of Zimmer). This Board should not issue an operating license until such time that a benefit-cost analysis is performed and reviewed using accurate data that is presently or will be available.

producing power from the proposed facility with the costs of otherwise producing the power." We regard the Appeal Board's ruling in *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155 (1978) (cited both by the Applicants and the Staff) as dispositive of the admissibility of Contention 1(b) and the portion of Contention 1(a) dealing with the reasonableness of costs, and we confine our discussion of why we cannot accept those contentions to a recitation of the relevant passage from that decision:

> In the Atomic Energy Act, Congress did not make this agency responsible for assessing whether a proposed nuclear plant would be the most financially advantageous way for a utility to satisfy its customers' need for power. Such matters remained the province of the utility and its supervising State regulatory commission. Antitrust issues to one side, our involvement in financial matters was limited to determining whether, if we license the plant, the company will be able to build and then to operate it without compromising safety because of pressing financial needs.
>
> The passage of the National Environmental Policy Act increased our concern with the economics of nuclear power plants, but only in a limited way. That Act requires us to consider whether there are *environmentally* preferable alternatives to the proposal before us. If there are, we must take the steps we can to see that they are implemented if that can be accomplished at a reasonable cost; *i.e.,* one not out of proportion to the environmental advantages to be gained. But if there are no preferable environmental alternatives, such cost-benefit balancing does not take place. Manifestly, nothing in NEPA calls upon us to sift through environmentally *inferior* alternatives to find a cheaper (but dirtier) way of handling the matter at hand. In the scheme of things, we leave such matters to the business judgment of the utility companies and to the wisdom of the State regulatory agencies responsible for scrutinizing the purely economic aspects of proposals to build new generating facilities. In short, as far as NEPA is concerned, cost is important only to the extent it results in an environmentally superior alternative. If the "cure" is worse than the disease, that it is cheap is hardly impressive.

7 NRC at pp. 162-63 (footnotes omitted). See also *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2, CLI-76-27, 4 NRC 610, 614 (1976); *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 AEC 857, 862 (1974); *Illinois Power Company* (Clinton Power Station, Units 1 and 2), ALAB-340, 4 NRC 27, 48 (1976).

2. Most of Contention 2 may be rejected on similar grounds. It seeks to have a new cost-benefit analysis performed for this plant because of "incorrect data" assertedly used in the original cost-benefit analysis (which

appears in the Final Environmental Statement, NUREG-0265, dated June, 1977).[3] The data in question, however, for the most part appear to be largely economic. Although economic data are an element in the cost-benefit balance, they relate to specific sites, facilities, or equipment, and their environmental advantages and disadvantages. Thus, environmental factors are the foundation of such an analysis. But those factors play little, if any, role in the request before us to admit the new Contention 2. For that reason, the contention raises matters which are inappropriate for us to adjudicate.[4]

3. Contention 1(c) is unacceptable for yet another reason. Need for power, the subject of this contention, was one of the environmental issues considered by the Licensing Board during the construction permit hearings. LBP-72-27, 5 AEC 133, 137, *affirmed,* ALAB-84, 5 AEC 372 (1972). In contrast to safety issues, environmental issues which have been considered during the construction permit proceeding are normally only reconsidered at the operating license stage upon a showing of significant changed circumstances. 10 CFR 51.21, 51.23(e). This is in recognition of the obvious fact that issues such as need for power are more appropriately considered before a plant has been built. Thus, before a need-for-power issue can be accepted at the operating license stage (assuming the question was previously considered during the construction permit review), there must be "a strong showing...that...[the issue] had not previously been adequately considered or [that there exists] significant new information which had developed after the construction permit review." *Pennsylvania Power and Light Company* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-6, 9 NRC 291, 303-04 (1979), quoting from *Detroit Edison Company* (Enrico Fermi Atomic Power Plant, Unit 2), LBP-79-1, 9 NRC 73, 86 (1979). The Commission itself has erected a high threshold for information which could serve to justify reconsideration of need for power. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1-4), CLI-79-5, 9 NRC 607 (1979). Dr. Fankhauser has not made the requisite showing for us to accept a new need-for-power contention—indeed, he provides no information at all why need for power should be relitigated at this time. His naked claim to that effect clearly is insufficient. For that

[3]None of the admitted contentions raises any question about this cost-benefit analysis. In these circumstances, the final balance would not normally be performed by this Board but would be left to the Staff. 10 CFR 2.760a, 51.26(a), 51,52(b)(2).

[4]To the extent the contention attempts to raise the issue of the social costs of the Three Mile Island accident, we would be authorized to entertain it. But as we shall see, the proposed contention fails to satisfy several of the lateness criteria of 10 CFR 2.714(a).

reason, proposed Contention 1(c) must be rejected without regard to its timeliness.[5]

B. As we have seen, proposed Contentions 1(a), 1(b) and 2, to the extent they seek to question the economic reasonableness of the Zimmer project, are before the wrong forum. Proposed Contention 1(c) does not include adequate facts to justify our acceptance of a contention of that type. We accordingly have rejected these contentions without regard to their timeliness.

On the other hand, Contention 1(a), to the extent it challenges the "financial capability" of the Applicants to operate, maintain and decommission the Zimmer facility, and Contention 2, to the extent it seeks to litigate the social costs of the Three Mile Island (TMI) accident as an element of the cost-benefit balance, raise questions which may properly be adjudicated in a proceeding of this type. As noted earlier, however, acceptance of these contentions is dependent upon a balancing of the factors set forth in 10 CFR 2.714(a)(1)(i)-(v). These factors are:

(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 represented by existing parties.

(v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

As the Staff points out, Dr. Fankhauser has made no effort to address the substance of these requirements. In this regard alone, his motion could be deemed fatally defective. *See Nuclear Fuel Services* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975). Nonetheless, interspersed throughout Dr. Fankhauser's motion are a number of statements which might be viewed as relevant to one or more of the five factors. We will address each factor with these statements in mind.

1. To excuse his lateness, Dr. Fankhauser cites newly developing information. As we acknowledged in our Memorandum and Order of April 22, 1980, LBP-80-14, 11 NRC 570, 574, the availability of new information appearing in previously unavailable documents has long been recognized as a valid excuse for late-filed contentions. Dr. Fankhauser alludes to

[5]Balancing the factors in 10 CFR 2.714(a)(1) would also require rejection of this contention. See, in particular, at pp.237-238, *infra*.

information on cost increases for the facility which became available in May, 1980, further operating cost increases (as yet unspecified) which could result from new regulatory requirements, and information concerning the social costs of the TMI accident, which presumably became available some time after the occurrence of that accident in March, 1979. We conclude that the economic costs revealed in May, 1980 constitute new information with respect to the financial-qualifications aspect of proposed Contention 1(a) and that Dr. Fankhauser has therefore demonstrated "good cause" for his failure to advance a financial-qualifications contention at an earlier date. We also conclude that he has provided no good excuse for his delay of some 16 months after the TMI accident in attempting to raise the social costs of the accident and, accordingly, that he has not shown "good cause" for the late submission of that part of Contention 2.

2. The presence or absence of "good cause" for delay is not conclusive with respect to the acceptability of a late-filed contention, but a party seeking to introduce such a contention without an adequate excuse for lateness bears a much heavier burden than a party with an adequate excuse. *West Valley,* CLI-75-4, *supra,* 1 NRC at p. 275. Dr. Fankhauser therefore bears a much heavier burden with respect to Contention 2 (social effects of the TMI accident) than with respect to Contention 1 (financial qualifications). Turning to the second factor, it is likely that this proceeding is the best (if not the only) forum for litigation of both of these issues. This factor would thus be balanced in Dr. Fankhauser's favor with respect to each of these contentions.

3. One of the most important factors, in our view, is Dr. Fankhauser's ability to contribute to the development of a sound record. He claims that his long involvement in this proceeding perforce will produce that result. We agree with the Applicants and Staff, however, that Dr. Fankhauser must show how his participation would assist in developing a sound record on the particular issues in question and that he has failed to do so. Absent his supplying further information of the type we later describe, we balance this factor against admission of any of the proposed contentions.

4. Dr. Fankhauser recognizes that Miami Valley Power Project's Contention 13 puts into issue the Applicants' financial qualifications (and, in addition, that MVPP's Contention 11 raised the need-for-power issue).[6] But he claims that it is "questionable whether MVPP will vigorously litigate these contentions" and that the scope of the proposed contentions is broader than that of MVPP's contentions. We have already held that the broader scope (which questions the ability of consumers to afford power

[6]He fails to mention that we have already granted summary disposition of Contention 11. See our Prehearing Conference Order dated June 4, 1979 (unpublished).

produced by the facility) is beyond the permissible scope of this hearing, and that Dr. Fankhauser has not advanced adequate information to justify a need-for-power contention. Moreover, as the Applicants correctly point out, the asserted lack of vigor of MVPP's advocacy of similar issues (without any further specification) constitutes neither an excuse for the tardy filing nor a showing that one's interest will not be adequately protected by existing parties. *Puget Sound Power and Light Company* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-559, 10 NRC 162, 173 (1979); *id.*, ALAB-552 10 NRC 1, 7-9 (1979); *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-583, 11 NRC 447, 448 (1980).[7] For these reasons, with respect to proposed Contention 1(a) (to the extent it involves financial qualifications), we find that Dr. Fankhauser has made no showing that his interests are not being (or have not been) adequately represented by MVPP.[8] Because there is no issue comparable to Contention 2, this factor would be balanced in Dr. Fankhauser's favor for that contention. But because the Staff is normally responsible for undertaking the cost-benefit balance in an operating license proceeding, and because we have no reason to question that the Staff will adequately perform this function (giving regard to new information where appropriate), we accord relatively little weight to this factor with regard to Contention 2.

5. As for the last factor, it is clear that admission of proposed Contention 2 would result in delay, since no comparable issue has been accepted in this proceeding. Contention 1(a) (to the extent it challenges the Applicants' financial qualifications) essentially duplicates existing Contention 13, which has not yet been heard by us. The Applicants claim that delay would nonetheless result, by virtue of additional pleadings, prehearing conferences, and evidentiary hearings. On the other hand, ZAC-ZACK suggests that we could consolidate Dr. Fankhauser's contentions with similar contentions of MVPP. In our view, any delay would be minimal, since, if Contention 1(a) were admitted (to the extent it deals with financial qualifications), it would be consolidated with Contention 13 and Dr. Fankhauser would be required "to take the proceeding as [he] finds it." *West Valley*, CLI-75-4, *supra*, 1 NRC at p. 276. Thus, we balance this factor

[7]We note that, with respect to the dismissed Contention 11, Dr. Fankhauser filed no response to the Applicants' motion for summary disposition of that contention.

[8]Were we balancing this factor with respect to proposed Contention 1(c), we would reach a similar conclusion.

in Dr. Fankhauser's favor only with respect to Contention 1(a) (to the extent it questions the Applicants' financial qualifications)[9]

6. In sum, factors i, ii and v would seem to balance in favor of accepting proposed Contention 1(a) (to the extent it raises a financial qualifications issue). Factors ii and iv (but only to a limited extent) balance in favor of accepting Contention 2 (insofar as it seeks to deal with the social costs of the TMI accident). Although the factors clearly balance against admission of Contention 2, we might be inclined to accept Contention 1(a) if we were convinced that doing so would make a significant contribution to the record on that issue. Dr. Fankhauser has made no showing to that effect. For that reason alone, we decline to accept the financial qualifications portion of Contention 1(a).

C. Notwithstanding the foregoing ruling on the financial qualifications portion of proposed Contention 1(a), we recognize the public interest in developing a sound record on issues admitted into controversy. Should MVPP's Contention 13 go to hearing,[10] we would be prepared to consider Dr. Fankhauser a co-sponsor of that contention, and to permit him to file evidence-in-chief, if he were to demonstrate that he has testimony to sponsor which could serve to create a more complete record.[11] If Dr. Fankhauser desires to present a witness or witnesses on Contention 13, he must advise the Board and parties of that fact and of the substance of the proposed testimony. He should do so within 15 days after service on him of the Staff's SER Supplement dealing with financial qualifications. If we determine (after ascertaining the views of other parties) to permit Dr. Fankhauser to become a co-sponsor of Contention 13, we will afford the Applicants and Staff sufficient time prior to hearing to conduct discovery of Dr. Fankhauser's proposed witness or witnesses (if they wish to do so).

For the foregoing reasons, Dr. Fankhauser's motion to admit additional contentions is *denied,* but without prejudice to Dr. Fankhauser's seeking to become a co-sponsor of MVPP's Contention 13, on the terms provided herein.

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[9]Were we required to consider these factors with respect to proposed Contention 1(c), we would balance this factor against accepting the contention. Acceptance of that contention would clearly result in delay, inasmuch we have already dismissed MVPP's similar Contention 11.

[10]The Applicants have moved for summary disposition of Contention 13, based on MVPP's default in responding to discovery. We do not intend to rule on that motion until we have received the Staff's SER Supplement dealing with the Applicants' financial qualifications.

[11]In any event, Dr. Fankhauser has the right to cross-examine witnesses presented by other parties on Contention 13, as well as other issues. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 AEC 857, 864-69 (1974); *reconsideration denied,* ALAB-252, 8 AEC 1175; *affirmed,* CLI-75-1, 1 NRC 1 (1975).

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland,
this 20th day of August 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Edson G. Case, Acting Director

In the Matter of **Docket No. 50-344-OL**

PORTLAND GENERAL ELECTRIC COMPANY
(Trojan Nuclear Plant) **August 13, 1980**

The Acting Director of Nuclear Reactor Regulation denies under 10 CFR 2.206 a petition that requested suspension of operation of the Trojan Nuclear Plant due to potential hazards posed by volcanic activity at Mount St. Helens.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By telegram dated May 29, 1980, the Trojan Decommissioning Alliance of Portland, Oregon, requested that the Commission suspend operation of the Trojan Nuclear Plant on the basis of potential dangers posed by recent volcanic activity at Mount St. Helens in Washington State. On June 3, 1980, the Commission referred this request for action to the NRC Staff for consideration under 10 CFR 2.206 of the Commission's regulations. For the reasons stated in this decision, the Alliance's request is denied.

The potential impact of volcanic activity on the safety of the Trojan facility was investigated thoroughly by government geologists (Atomic Energy Commission and the U.S. Geological Survey) before the plant was allowed to be constructed and again before the operating license was issued. This investigation and reassessment of volcanic-related hazards has continued as attested by the enclosed affidavit which was filed with the Atomic Safety and Licensing Board in the Trojan spent fuel pool expansion proceeding in April, 1978.

Although this report was filed prior to the recent volcanic activity, it is with few exceptions considered an accurate assessment today. Exceptions to the report include (1) the underestimation of the volume of debris associated with a potential mudflow, (2) exclusion of a discussion of volcano-induced earthquakes, and (3) the statement that historic data

indicates that the volcano has been substantially more active in the 19th century than the 20th century. Notwithstanding the above exceptions, the report's conclusion that the Trojan site is suitable from a volcanic hazards point of view remains accurate.

The recent massive eruption of May 18, 1980 exceeded that envisioned by the Nuclear Regulatory Commission and by our advisors, the U.S. Geological Survey. Nevertheless, the effects of the recent volcanism (mudflows, earthquakes and ashfall) at the Trojan site have been minimal. Mudflows in the Toutle, Kalama, and Lewis River valleys have not compromised the safety of the Trojan plant. Volcanic-induced earthquakes have been small and have neither been felt nor recorded instrumentally at the site. Ashfall at the Trojan plant resulting from the May 25, 1980 eruption has been slight (not exceeding 1/8 of an inch) and fell at the site in the form of a muddy rain or mist. The only indication of ash occurred on April 29, 1980 when a thin coating of the ash was noted at the Trojan site.

According to University of Washington seismologists, the volcanic-induced earthquakes mentioned previously have not exceeded Richter Magnitude 5.1 and have been concentrated in an area roughly coincidental with the volcano crater which is 35 miles northeast of the Trojan plant. None of the larger events (Magnitude 5.0 and above) have occurred closer than 35 miles to the plant. For the most part, the volcanic earthquakes have occurred at shallow depths and have consequently been felt only in the immediate vicinity of the seismic event. However, there have been unconfirmed reports of volcanic-related earthquakes (originating at Mount St. Helens) being felt in the Longview-Kelso, Washington area, roughly five miles north of the Trojan plant. Apparently, those feeling the tremors were located in areas where soil overlies bedrock. The plant is designed to safely withstand seismic levels of 0.25g peak ground acceleration. This corresponds to earthquake levels many times greater than those generated by the volcano-induced earthquakes.

We have been in constant contact with numerous state, governmental agency, and university scientists since initiation of earthquake activity and subsequent volcanic activity in the vicinity of Mount St. Helens on March 20, 1980. This surveillance, accumulation of information, and assessment will continue as long as the volcano remains active. In addition, representatives of the NRC staff visited the Trojan site and environs on June 18, 1980 for the specific purpose of assessing the safety of Trojan in light of the recent volcanic activity.

Our conclusion, based upon an evaluation of volcanic phenomena prior to construction, coupled with an assessment of the effects of the activity beginning March 20, 1980, is that the Trojan site remains suitable from a volcanic hazards viewpoint.

As to evacuation under severe ashfall conditions, this can cause transportation problems somewhat similar to those produced by road icing or heavy snowfall. The first protective action to be taken following a radiological emergency at a nuclear facility is to alert the public to take shelter and await further instructions. Seeking shelter in homes is an effective protective measure under most circumstances. A decision to evacuate is based on an assessment of the potential injury to the public from the accident and must be balanced against the risk to the public from the evacuation itself and against the conditions that prevail at the time. Seeking shelter would have to be given greater weight under ashfall conditions, depending on its severity.

Beyond about five miles, sheltering followed by relocation within several hours is essentially as effective as immediate evacuation. Within five miles, sheltering is still an effective protective measure. Under ashfall conditions, consideration would have to be given to limiting the evacuation area, depending on the exact circumstances. This would reduce the difficulty of evacuating those persons exposed to the greatest risk.

Therefore, if an accident occurred in combination with transportation difficulties due to severe volcanic ashfall, effective protecting measures can still be implemented, albeit with greater difficulty. The probability of these two events occurring simultaneously is, however, extremely low.

Based on the foregoing, your request on behalf of the Trojan Decommissioning Alliance that operation of the Trojan Nuclear Plant be suspended on the basis of the recent volcanic activity at Mount St. Helens is denied.

Edson G. Case, Acting Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 13th day of August, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ACTING EXECUTIVE DIRECTOR FOR OPERATIONS

William J. Dircks, Director

In the Matter of **Docket No. PRM-30-56**

GULF NUCLEAR, INC. **August 13, 1980**

The Commission's Acting Executive Director for Operations denies petition for rulemaking proposing that the Nuclear Regulatory Commission be divided into two separate entities.

ATOMIC ENERGY ACT: RESPONSIBILITIES

Nuclear weapons manufacturing is a responsibility of the Department of Energy rather than the Nuclear Regulatory Commission.

NRC REGULATIONS: APPLICATION OF REQUIREMENTS

Application of pertinent NRC regulatory requirements in a graded approach, i.e., applied to an extent consistent with their importance to safety, can reduce burdens and costs for persons complying with the requirements.

NRC: ASSIGNED FUNCTIONS

In assigning licensing and related functions within the NRC, the Congress not only distinguished between nuclear reactors and other licensed facilities and nuclear materials, but also gave due and proper emphasis to functions which are vital to the public health and safety and the safe and efficient operation of both nuclear reactors and other licensed activities.

ENERGY REORGANIZATION ACT: NRC AUTHORITY

Given the structure of the Energy Reorganization Act of 1974, as amended, it is clear that Congress intended the newly created Nuclear

Regulatory Commission to have licensing and related regulatory authority not only over nuclear reactors, uranium milling, nuclear fuel processing and reprocessing, and other areas dealing with fissile materials but also have this same authority over byproduct materials.

NRC: DIVISION INTO SEPARATE ENTITIES

The NRC itself cannot "...separate the United States Nuclear Commission into two separate entities...." Such a separation could only be accomplished in either of two ways: (1) enactment of legislation by the U.S. Congress, the method by which the existing NRC was created; or (2) through implementation of an Executive Reorganization Plant pursuant to 5 USC 901 *et seq.*

DENIAL OF PETITION FOR RULEMAKING

By letter dated April 12, 1979, Mr. Walter P. Peeples, Jr., on behalf of Gulf Nuclear, Inc., filed with the Nuclear Regulatory Commission a petition for rulemaking.

THE PETITION

The petitioner proposed that the Nuclear Regulatory Commission be divided into two separate entities - one area would cover power reactors, uranium mining, nuclear weapons manufacturing, nuclear fuel processors, and any area that deals with fissile materials; the second area would deal with byproduct materials. (Note: Nuclear weapons manufacturing is a responsibility of the Department of Energy rather than the Nuclear Regulatory Commission.)

BASIS FOR REQUEST

In support of his petition, Mr. Peeples stated five propositions that he felt were adequate justification for consideration of his proposal:

1. Fissile materials used in power production and the production of nuclear weapons require far more stringent rules than those required of byproduct material users and licensees. This includes regulations concerning shipment and use of these materials. Because the U.S. Nuclear Regulatory Commission is a single entity, all rules pertain to both types of licensees.
2. The majority of effort of the U.S. NRC is devoted to fissile materials creating enormous costs and efforts to control. The majority of the licensees

are byproduct materials users who are forced to share the cost burden exhibited in U.S. NRC fees.

3. The staff and leadership of the U.S. NRC devotes the majority of its time to expended energy related to power reactors which creates undue burdens on byproduct materials users.

4. A division of responsibility by NRC would create a positive effect on the general public by making them aware that there are different types of radioactive materials, easing some of the political pressure on the NRC.

5. Because of the present makeup of NRC controlling both areas, the public apprehension toward power reactors has a tendency to force over-regulation of byproduct materials because both are jointly referred to as simply "radioactive materials." This detracts from the ability to point out the positive nature of public benefits derived from both types of materials. Since NRC fails to distinguish between the two types of materials, undue burdens in transportation and publicity force byproduct materials users to defend a position they are not totally familiar with. Petitions and regulations, including regulatory guides, are frequently opposed or incorrectly interpreted because of lack of distinction between the two types of materials.

In summary, the NRC staff responses are based on published statements related to (1) legislative mandates, (2) judicial guidelines, and (3) statutory responsibilities for regulating civilian nuclear activities. Many parts of the NRC rules are devoted to regulating production and utilization facilities, including nuclear reactors and facilities for processing irradiated special nuclear material. Other parts are devoted to regulating byproduct materials, source materials, or special nuclear materials. Several parts cover both fissile materials and other nuclear materials.

An example of this last case is the NRC's regulation, "Fees for Facilities and Materials Licenses and Other Regulatory Services Under the Atomic Energy Act of 1954, as Amended," 10 CFR Part 170. The fees charged for licensing and inspection services by the NRC are based on guidelines that determine whether or not the NRC may charge a fee for a partiular service and what the maximum fee may be. The NRC is generally obliged to impose the fees allowed by the guidelines where it is fair and equitable to do so and is limited by the requirement that a consistent and fundamentally fair fee structure must accord equal treatment to similarly situated recipients of agency service for nuclear facilities, fissile materials, and other radioactive materials.

A copy of "NRC Staff Responses to Petitioner's Justification Statements - PRM 30-56," is available for public inspection at the Commission's Public Document Room at 1717 H Street NW., Washington, D.C. Single copies of the document may be obtained on request from the Office of Standards

Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

REQUEST FOR COMMENTS ON PETITION

A notice of filing of petition for rulemaking was published in the FEDERAL REGISTER on May 17, 1979 (44 FR 28896). The comment period expired July 16, 1979. Eleven letters of comment were received in response to the notice. Two of the letters opposed the proposal and nine letters supported the proposal.

Several persons commented generally that NRC regulations which cover both fissile materials and byproduct materials result in administrative burdens, confusion, and added costs for byproduct material users. Application of pertinent NRC regulatory requirements in a graded approach, i.e., applied to an extent consistent with their importance to safety, can reduce burdens and costs for persons complying with the requirements. In many instances, the NRC's regulations grant relief from safeguards reporting requirements for small quantities of byproduct material and grant relief from both safeguards and criticality safety controls for small quantities of fissile material.

Two persons commented on the costs of NRC licensing and inspection fees and the beneficiaries of NRC services. Fees associated with fissile material licensing and inspection activities (and all other fee categories) are based on the sum on the average of the direct and indirect costs that the NRC incurs in furnishing the services for a member of the class of identifiable recipients for which the fees are assessed. Excluded from consideration for recovery are budgeted regulatory costs that are part of a program conducted on behalf of the public.

One person expressed the opinion that the inclusion of 10 CFR Part 34, "Licenses for Radiography and Radiation Safety Requirements for Radiographic Operations," within the scope of 10 CFR Part 21, "Reporting of Defects and Noncompliance," is not necessary. The NRC's regulations in 10 CFR Part 21 implement section 206 of the Energy Reorganization Act of 1974, as amended. Part 21 requires, among other things, that information reasonably indicating that a licensed activity or basic component supplied to such activity fails to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order, or license of the NRC relating to substantial safety hazards, or contains a defect which could create a substantial safety hazard should be reported. Incident and overexposure reporting requirements had been in existence in Commission regulations for a number of years before enactment of the Energy Reorganization Act of 1974 (which contains section 206) in October 1974.

That person also expressed the opinion that the inclusion of industrial radiography licensees in 10 CFR 71.12, "General License for Shipment in DOT Specification Containers, in Packages Approved for Use by Another Person, and in Packages Approved by a Foreign National Competent Authority," is not necessary. It is the general licensees delivering licensed radioactive material to a carrier for transport under the authority of 10 CFR 71.12(b) who must assure themselves and the NRC that the subject packages are as described in the packages approvals and that they are used, tested, and maintained in accordance with both the general and specific portions of an approved quality assurance program. (The NRC must exercise its regulatory authority through its general licensees who use package approvals because the NRC has no general enforcement powers over package manufacturers or package owners unless they possess and use licensed radioactive material. They would, however, be subject to 10 CFR Part 21, "Reporting of Defects and Noncompliance.")

A copy of "Abstracts of Comments and Staff Responses: Proposal that Nuclear Regulatory Commission Be Divided into Two Separate Entities - Docket No. PRM 30-56," is available for public inspection at the Commission's Public Document Room at 1717 H Street NW., Washington, D.C. Single copies of the comment analysis may be obtained on request from the Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

ASSIGNED FUNCTIONS

The Energy Reorganization Act of 1974, as amended, was enacted by the Congress and approved as Public Law 93-438 on October 11, 1974.

Title II of that Act established the Nuclear Regulatory Commission and transferred to the Nuclear Regulatory Commission all the licensing and related regulatory functions of the Atomic Energy Commission.

In assigning those functions within the Nuclear Regulatory Commission, the Congress not only distinguish between nuclear reactors and other licensed facilities and nuclear materials, but also gave due and proper emphasis to functions which are vital to the public health and safety and the safe and efficient operation of both nuclear reactors and other licensed activities.

Sec. 203(b) of that Act provides that the Director of Nuclear Reactor Regulation shall perform such functions as the Commission shall delegate including principal licensing and regulation involving all facilities and materials licensed under the Atomic Energy Act of 1954, as amended, associated with the construction and operation of nuclear reactors licensed under the Atomic Energy Act of 1954, as amended.

Sec. 204(b) of the Energy Reorganization Act of 1974, as amended, provides that the Director of Nuclear Material Safety and Safeguards shall perform such functions as the Commission shall delegate including principal licensing and regulation involving facilities and materials licensed under the Atomic Energy Act of 1954, as amended, associated with the processing, transport, and handling of nuclear materials, including the provision and maintenance of safeguards against threats, theft, and sabotage of such licensed facilities and materials. The Nuclear Regulatory Commission has used the flexibility provided by Sec. 204(b) of the Energy Reorganization Act of 1974, as amended, to establish within the Office of Nuclear Material Safety and Safeguards the Division of Fuel Cycle and Material Safety to perform those licensing and regulatory activities which pertain to the processing, transport, and handling of nuclear materials off the nuclear reactor site.

The Energy Reorganization Act of 1974, as amended, provides no authority under which the Nuclear Regulatory Commission, on its own initiative, may transfer any licensing or related regulatory function to a new or established agency of the Federal Government.

ALTERNATIVE ORGANIZATION FORMS

Alternative organization forms for nuclear regulation have been considered in recent studies conducted on or for the Nuclear Regulatory Commission.

Sec. 306 of the Energy Reorganization Act of 1974, as amended, required the Comptroller General of the United States to audit, review, and evaluate the implementation of the provisions of Title II of that Act by the Nuclear Regulatory Commission no later than sixty months after the effective date of that Act and submit to the Congress a report on his audit.

In the Comptroller General's report to Congress, "The Nuclear Regulatory Commission: More Aggressive Leadership Needed," EMD-80-17, dated January 15, 1980, the General Accounting Office (GAO) identified an alternative (separating NRC into separate policymaking and regulatory agencies) similar to the petitioner's proposal.

GAO noted that separation of NRC into two agencies could build on the strengths of both the commission and the single administrator forms of nuclear regulation. Policymaking on critical unresolved nuclear regulation issues could continue under the commission form with the advantage of multimember deliberations. At the same time, day-to-day regulation of nuclear activities could proceed under an agency headed by a single administrator with prospects for better management of these day-to-day activities.

GAO discussed this alternative with a cross-section of people knowledgeable of nuclear regulation, including representatives of Government, the nuclear industry, public interest groups, and academia. Opinion on the alternative ranged from active interest to a belief that it represents an unnecessary proliferation of Federal regulatory agencies.

GAO chose not to recommend any alternative to strengthening the present commission because none of the alternative forms appeared to have a clear-cut advantage. In conclusion, GAO stated:

> Ultimately, the Congress must consider the advantages and disadvantages of various organizational forms and decide on the organizational structure which, on balance, best represents what the Congress wants for nuclear regulation.

GROUNDS FOR DENIAL

The Commission has given careful consideration to petition for rule making PRM 30-56 and the public comments received thereon and has decided to deny the petition on the grounds that, given the structure of the Energy Reorganization Act of 1974, as amended, it is clear that Congress intended the newly created Nuclear Regulatory Commission to have licensing and related regulatory authority not only over nuclear reactors, uranium milling, nuclear fuel processing and reprocessing, and other areas dealing with fissile materials but also have this same authority over byproduct materials. The NRC itself cannot "...separate the United States Nuclear Regulatory Commission into two separate entities...." Such a separation could only be accomplished in either of two ways: (1) enactment of legislation by the U.S. Congress, the method by which the existing NRC was created; or (2) through implementation of an Executive Reorganization Plan pursuant to 5 USC 901 *et seq.*

A copy of the petition for rulemaking 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.

For the Nuclear Regulatory Commission.

William J. Dircks
Acting Executive Director for Operations

Dated at Bethesda, Maryland this 25th day of July, 1980.

Cite as 12 NRC 253 (1980) **CLI-80-30**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. XR-133**
110-00435

WESTINGHOUSE ELECTRIC CORP.
(Export to South Korea) **September 22, 1980**

The Commission denies a petition to intervene and request for a hearing on a license application for the export of two nuclear reactors to South Korea, determines that the license application meets all applicable export licensing criteria, and directs that the license be issued.

MEMORANDUM AND ORDER

For the reasons set forth in the Opinion of Chairman Ahearne and Commissioner Hendrie, the Commission has denied the "Petition for Leave to Intervene and Request for a Hearing" filed by the Center for Development Policy and the Friends of the Korean People challenging the issuance of License Application XR-133. That application covers the export of two reactors to South Korea. The Commission has also determined that License Application XR-133 meets all the applicable export licensing criteria set forth in the Atomic Energy Act of 1954, as amended, and directs the Assistant Director for Export-Import and International Safeguards, Office of International Programs, to issue the license to the Westinghouse Electric Corporation. Commissioner Gilinsky concurs in the result. For the reasons set forth in his opinion Commissioner Bradford dissents; his comments are attached. The separate opinion of Chairman Ahearne and Commissioner Hendrie is also attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 22nd day of September 1980

OPINION OF CHAIRMAN AHEARNE AND COMMISSIONER HENDRIE

I. Background

On January 26, 1979, the Westinghouse Electric Corporation filed application No. XR-133 with the Commission seeking authorization to export two nuclear facilities (KNU-7 and KNU-8) to the Republic of South Korea. The Commission published a notice in the Federal Register of February 28, 1979, announcing receipt of this application and providing members of the public 30 days in which to file a petition seeking leave to intervene or requesting a public hearing. More than a year later on June 13, 1980, a "Petition for Leave to Intervene and Request for Hearing" was filed on behalf of the Center for Development Policy (CDP). On August 1, 1980 the Friends of the Korean People (FKP) filed a motion requesting that the CDP petition be amended to list it as a petitioner. Petitioners suggest that the Commission conduct public hearings, to be focused on eight issues: (1) the adequacy of the physical security measures applied in South Korea to withstand risks posed by civil war or open rebellion; (2) the nature and magnitude of risks and dangers posed by the population density around the reactor site; (3) the threat to U.S. non-proliferation objectives posed by any possible South Korea purchase of reprocessing technology; (4) the likely environmental impact of the proposed reactors and disposition of its spent fuel; (5) dangers to the health and safety of U.S. citizens stationed in South Korea; (6) dangers to the health and safety of South Korean citizens; (7) risks to the effective operation of U.S. military installations in South Korea; and (8) generic safety questions posed by all nuclear power plants and by Westinghouse reactors in particular.

The NRC staff, the State Department (speaking on behalf of the Executive Branch) and the applicant filed responses with the Commission recommending that the petition be denied. The petitioners filed a reply to those submissions.

The NRC staff[1] and the Executive Branch[2] have also submitted documents to the Commission in which they conclude that the South Korean license applications meet all the applicable export licensing criteria and recommending that the Commission order issuance of the licenses. The Executive Branch submission included a "Concise Environmental Review of Korean Nuclear Units 7 and 8" prepared pursuant to E.O. 12114; the

[1]Memorandum to the Commissioners from James R. Shea, Director, Office of International Programs dated July 21, 1980, SECY-80-336 (classified).

[2]Memorandum for James R. Shea from Louis V. Nosenzo, Deputy Assistant Secretary of State, dated May 6, 1980.

staff submission included an "Office of Nuclear Reactor Regulation Staff Evaluation of the Potential Radiological Impact on the Global Commons of the Export of Korean Nuclear Units 7 and 8."

II. The Hearing Request

(a) Timeliness

We would deny the hearing request in part because it is untimely. Under the Commission's regulation 10 CFR 110.82(c)(1), intervention petitions and requests for hearings must be filed within thirty days after the application is noticed in the Federal Register. Petitioners' request comes more than one year late. The regulations provide however that untimely motions may be granted for good cause. In passing upon at untimely hearing request the Commission also considers the availability of other means by which the petitioners interests will be protected or represented by other participants in the hearing, and the extent to which the issues will be broadened or action delayed on the application as a result of granting the hearing request. 10 CFR 110.84(c).

Petitioners argue that good cause exists for the late filing in view of the following alleged changes in the circumstances affecting the pending licenses: (a) the recent rebellion in the South Cholla Province raises issues regarding physical security measures to be applied at the facility; (b) recently released population statistics raise questions about site suitability; and (c) that there is press speculation that South Korea is considering the purchase of a reprocessing facility from France. We find these arguments unpersuasive. Before the South Cholla Province disturbances, the South Korean Government had assured the United States that it would provide adequate physical security at all of its nuclear facilities. Pursuant to 10 CFR 110.43 South Korea had informed the United States that its physical security measures at a minimum will be equivalent to those set forth in INFCIRC 225 Rev. 1.[3] The NRC staff has reviewed the physical security measures applied to South Korean nuclear facilities and has concluded that they meet the requirements set forth in the Atomic Energy Act and the Commission's implementing regulations.[4]

With respect to petitioners' allegations that South Korea may be considering purchasing a reprocessing plant, the Executive Branch has advised the NRC that it is unaware of any information supporting recent

[3]Letter from Kyung-Mok Cho, Scientific Attache, Embassy of the Republic of Korea, Washington, D.C., to Vance Hudgins, Assistant Director for Politico-Military Security Affairs, Division of International Security Affairs, U.S. Department of Energy, dated November 21, 1978.

[4]See Section 127(3) of the Atomic Energy Act and 10 CFR 110.43

press speculation that France has renewed its offer of a reprocessing plant to South Korea.

With respect to the third issue of population density, the Commission stated in its recently issued Philippine export licensing opinion, *Westinghouse Electric Corporation,* CLI-80-14 and CLI-80-15, 11 NRC 631, 11 NRC 672 (May 6, 1980) that the Commission does not evaluate site suitability issues in reaching its export licensing determinations. Consideration of this matter would broaden the issues to include those beyond the Commission's jurisdiction and could substantially delay action on the application.

In sum, we cannot find that good cause exists for granting the late intervention petition and hearing request. In addition, to grant the petition would broaden the issues and substantially delay action on the application. Therefore, we find the request to be untimely.

(b) Hearing as Matter of Right

CDP is a project of The International Center, a District of Columbia nonprofit corporation. The functions of CDP are to "[monitor] the flow of resources to developing nations," conduct research and analysis of development policies and their implementation, and disseminate the results to the public and public officials. "Petition for Leave to Intervene and Request for Hearing," at p. 2. FKP is a nonprofit charitable and educational corporation, headquartered in Geneva, New York, which publishes a newsletter, "Monthly Review of Korean Affairs," with a circulation of over 4000 throughout the United States. Since neither petitioner asserts it is a membership organization, it must be assumed that the interests petitioners represent are those of the institutions and not the interests of members.

Two basic interests appear to be asserted here by CDP: (1) preserving the common defense and security of the United States and South Korea by protecting the continued operation of U.S. military bases from the risks posed by the proposed nuclear reactors, and (2) assuring that the American public is informed regarding the proposed reactor export. FKP's interests are (1) to promote friendship between the Korean and American people, and (2) to inform the Korean government and its citizens of the attendant risks and hazards of the proposed project. The NRC Staff, Westinghouse Electric Corporation, and the Department of State have filed answers with the Commission stating that these interests are not sufficient to confer standing upon petitioners.

Any right the petitioners may have to intervene must be based on Section 189a. of the Atomic Energy Act of 1954, as amended, 42 USC 2239. That Section provides that the Commission must grant a hearing on 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 petitioners, to establish a right to intervene, must show they have standing, *i.e.* an "affected interest."

The Commission, in *Edlow International* [5] and later in *Exxon Nuclear Company,* [6] addressed extensively the issue of standing in export licensing matters. In *Edlow International,* the Commission stated that it would rely on judicial precedents in deciding issues of standing to intervene in export license proceedings and that more expansive rules of standing "would be undesirable." 3 NRC at pp. 569, 570. In its most recent important opinion on the subject, the Supreme Court set out its two part test for determining whether a person has standing to obtain judicial review: 1) an "injury in fact" must be alleged, and 2) the claimed injury must be fairly traceable to the challenged agency action. *Duke Power Company* v. *Carolina Environmental Study Group,* 438 US 59, 72.

In developing the "injury in fact" requirement, the Court has held that an organization's mere interest in a problem, "no matter how long-standing the interest and no matter how qualified the organization is in evaluating the problem," is not sufficient for standing to obtain judicial review. *Sierra Club* v. *Morton,* 405 US 727, 739 (1972). The organization seeking relief must allege that it will suffer some threatened or actual injury resulting from the agency action. *Linda R.S.* v. *Richard D.,* 410 US 614, 617 (1973); *Warth* v. *Seldin,* 422 US 490, 499 (1975). *Simon* v. *Eastern Kentucky Welfare Rights Organization,* 426 US 26, 40 (1976), made clear that "an organization's abstract concern with a subject that could be affected by an adjudication does not substitute for the concrete injury, required by article III."

In applying the "injury in fact" test, the Commission has recognized that:

> a claim will not normally be entertained if the "asserted harm is a 'generalized grievance' shared in substantially equal measure by all or a large class of citizens...." *Warth* v. *Seldin,* 422 US at 499. Thus, even if there is a generalized asserted harm, the Peitioners must still show a distinct and palpable harm to them. *Id.* at 501. *Exxon Nuclear Company, supra,* 6 NRC at 531.

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[5]On appeal, the court of appeals declined on the ground of mootness to review the Commission's treatment of intervenor standing. *Natural Resources Defense Council* v. *NRC,* 580 F.2d 698 (D.C. Cir. 1978).

[6]*Edlow International Company,* CLI-76-6, 3 NRC 563, *Exxon Nuclear Company, Inc. (Ten Applications for Low Enriched Uranium Exports to Euratom Member Nations),* CLI-77-24, 6 NRC 525.

The second element of the test for standing is the existence of a causal link between the challenged agency action and the alleged injury. *Duke Power Company,* 438 U.S. at 72, 74; *Exxon Nuclear Company,* 6 NRC at 531-532. It is a minimum requirement of Article III that the injury must be fairly traceable to the challenged action, "or put otherwise, that the exercise of the Court's remedial powers would redress the claimed injuries." *Duke Power Company,* 438 U.S. at 74, citing to *Simon,* 426 U.S. at 41, 43. The asserted injury must be shown to be "the consequence of the defendents' actions, or that the prospective relief will remove the harm." *Id.,* 426 U.S. at 45, citing *Warth,* 422 U.S. at 505. The Court's most recent cases have required no more than "a showing that there is a 'substantial likelihood' that the relief requested will redress the injury claimed to satisfy the second prong of the constitutional standing requirement." *Duke Power Company, 438 U.S. at 75, note 20.*

We find that the petitioners have not asserted the requisite "affected interest" or "injury in fact" which would entitle them to a hearing as a matter of right. As mentioned earlier, the petitioners have not alleged any injury to members or asserted any affected interest of individual members. As discussed above, the institutional interests of the petitioner organizations must extend beyond a mere generalized or abstract interest in the proceedings to confer standing. The interests asserted here by petitioners fall into three groups, none of which constitutes any threatened or actual injury to petitioners.

Both CDP and FKP assert interests in informing the American and Korean public of the dangers posed by the proposed reactor export. In *Edlow International,* 3 NRC at 572-574, the Commission found that the institutional interests in disseminating information and educating the public asserted by the petitioners there did not establish a claim of right under Section 189a. of the Atomic Energy Act because it did not constitute an "interest [which] may be affected by the proceeding." The Commission noted that there are many other means for the petitioners to obtain the desired information including examination of the files of NRC's Public Document Room and through requests under the Freedom of Information Act. There was found to be "no causal nexus...between failure to grant petitioner's request to participate...and any possible impairment of these organizations' ability to conduct an active and useful educational program for their members or the public." *Edlow,* 3 NRC at 573-574. The interests asserted by the petitioners here similarly do not constitute "injury in fact."

The second interest asserted by the petitioners is CDP's interest to protect the continued operation of U.S. military bases from the risks posed by the proposed reactors in order to preserve the common defense and security of the United States and South Korea. This interest in the safety of

U.S. military and civilian personnel stationed in South Korea does not constitute any "threatened or actual injury-in-fact" to CDP. Furthermore, a private organization's interest in the common defense and security of the U.S. and South Korea is a generalized grievance, based upon the remote threat of a unparticularized harm, and as such is insufficient to confer a right to intervene. Moreover, the Commission held in *Westinghouse Electric, supra,* that it would not consider impacts on U.S. military interests abroad in making its export licensing determinations. Intervention may not be based on claims pertaining to matters that are beyond the scope of this proceeding. *Babcock & Wilcox* (Export of a Facility to West Germany), CLI-77-18, 5 NRC 1332, 1348.

A final interest, asserted by petitioner FKP, is that of promoting friendship between the Korean and American people. With respect to this abstract concern or goal the present proceeding does not present the kind of concrete injury, actual or threatened to FKP which would confer standing to intervene in agency proceeding. In conclusion, the petitioners have failed to establish the requisite "interest [which] may be affected by the proceeding," and are not entitled to a hearing as a matter of right under Section 189(a) of the Atomic Energy Act.[7]

Because petitioners have not established the first element of the standing requirement, i.e. establishing injury in fact, the second prong as to whether the relief sought is likely to redress the injury need not be considered here.

(c) Discretionary Hearing

Even though petitioners are not entitled to a hearing as a matter of right the Commission can order a public hearing if it determines that a hearing would be in the public interest and would assist the Commission in making the statutory determinations required by the Atomic Energy Act, 10 CFR 110.84(a). We are unable to make such a determination in this case.

Four of the issues raised by petitioners pertain to matters which the Commission has stated it will not consider in making its export licensing determinations. These are: (1) risks posed by the population density around the reactor site; (2) dangers to U.S. citizens residing in Korea; (3) dangers to the health and safety of Korean citizens; and (4) impacts on U.S. military installations in Korea.[8] The export licensing process is also an inappropriate forum to consider generic safety questions posed by nuclear

[7]Petitioner CDP, in its Consolidated Reply, August 1, 1980, claims that Executive Order 12114 (January 9, 1979) confers CDP standing to intervene to protect its environmental interests (at p. 7 of Reply). However, Section 2-5(v) of the Order specifically exempts NRC export licensing decisions from its provisions. *See Westinghouse Electric Corporation* (Exports to the Philippines), CLI-80-14, 11 NRC 631, 643 (Opinion of Commissioners Kennedy and Hendrie).
[8]*Westinghouse Electric Corporation,* CLI-80-15, 11 NRC 672 (May 6, 1980).

power plants, including Westinghouse reactors. Under the Atomic Energy Act, a amended by the Nuclear Non-Proliferation Act of 1978, the Commission in making its export licensing determinations focuses on non-proliferation and safeguards concerns, and not on foreign health and safety matters.[9]

The other three issues raised by the petitioners — (1) the adequacy of the physical security measures to be implemented at the reactor site; (2) the threat to U.S. non-proliferation objectives if South Korea were to purchase reprocessing technology; and (3) the likely environmental impacts of the proposed reactors and disposition of its spent fuel upon the global commons and U.S. territory — pertain to matters which the Commission considers in making its export licensing determinations. However, on the basis of petitioners' submissions in this proceeding, we do not believe that if public hearings were held petitioners are likely to present significant new information or analysis to the Commission. There is no indication in their pleadings that petitioners possess special expertise in the matters they raise, or information not presently available to the Commission. In fact, petitioners request that the Commission make available to them information on the issues they raise and then afford them an opportunity to comment on that information. We have no basis for concluding that such an effort would result in development of significant new insights or a more comprehensive analysis of the issues than that already submitted to the Commission by the NRC staff and the Executive Branch.

In the absence of evidence that a hearing would generate significant new information or analyses, a public hearing would be inconsistent with one of the primary purposes of the Nuclear Non-Proliferation Act — that United States government agencies act in a manner which will enhance this nation's reputation as a reliable supplier of nuclear materials to nations which adhere to our non-proliferation standards by acting upon export license applications in a timely fashion.[10] A hearing would delay the Commission's decision by several months. Therefore, we conclude that a public hearing would not be in the public interest or assist the Commission in making its statutory determinations.

IV. The South Korean Export License Application

Section 127 of the Atomic Energy Act sets forth six specific criteria to be applied to proposed U.S. reactor exports. These criteria require certain nonproliferation and safeguards assurances from the recipient country. It is

[9] *Westinghouse Electric Corporation*, CLI-80-14, 11 NRC at p. 646 (Opinion of Commissioners Kennedy and Hendrie); *Id.* at pp. 663-664 (Opinion of Commissioner Gilinsky).
[10] See Section 2(b) of the Nuclear Non-Proliferation Act, 22 U.S.C. 3201(b).

our view that the South Korean Government has provided the United States adequate assurance that: (1) IAEA safeguards will be applied to the exported equipment;[11] (2) the reactor and special nuclear material produced through the use of the reactor will not be used for any nuclear explosive device;[12] (3) that adequate physical security measures will be maintained at the facility;[13] (4) that the reactor and any special nuclear material produced through the use of the reactor will not be transferred to the jurisdiction of any other nation or group of nations unless the prior approval of the United States has been obtained;[14] (5) no special nuclear material produced through the use of a U.S. supplied reactor shall be reprocessed or otherwise altered in form or content unless the prior approval of the United States has been obtained;[15] and (6) no sensitive technology shall be exported unless the foregoing five criteria are applied to the export.[16]

Section 128 of the Atomic Energy Act which became fully effective March 10, 1980, imposes the additional requirement that the United States has adequate assurance that IAEA safeguards are being maintained with respect to all nuclear installations in the recipient country.[17] South Korea, by ratifying the NPT, has agreed to place all nuclear installations in that country under IAEA safeguards, satisfying the Section 128 requirement.

The Commission before issuing the license must determine, pursuant to Section 103(d) of the Atomic Energy Act, that the reactor export is not inimical to the common defense and security of the United States or to the health and safety of the public. In the present case both the Executive Branch and NRC staff have expressed the view that this requirement is met. After reviewing those submissions we have concluded that the export would not be inimical to the common defense and security of the United States or to the public health and safety of the United States. In making our judgment we have taken into account recent events in South Korea,

[11]South Korea is a Party to the Treaty on the Nonprolifeation of Nuclear Weapons (NPT) depositing its instrument of ratification on April 23, 1975. Under Article III(1) of the NPT, all nuclear facilities in South Korea must be placed under IAEA safeguards.

[12]By ratifying the NPT, the Government of South Korea committed itself not to use or develop nuclear explosive devices for any purpose.

[13]As noted *supra* at p. 255, South Koreans have given the United States the physical security assurances required by 10 CFR 110.43.

[14]This requirement is satisfied by Articles X(3) and VIII(E) of the Agreement for Cooperation between the Government of the United States of America and the Government of Korea Concerning Civil Uses of Atomic Energy which entered into force on March 19, 1973, TIAS 7583 and controls the United States has over reprocessing of U.S. supplied material.

[15]Article VIII(C) of the Agreement for Cooperation satisfies this requirement.

[16]The proposed export does not involve the transfer of sensitive nuclear technology. Therefore, criterion 6 is not applicable here.

[17]This requirement applies only to non-nuclear weapons states as defined in the NPT.

including the change of gorvernmental leadership. The effect of a change in a recipient nation's government on the continued effectiveness of non-proliferation assurance required for approval of nuclear export licenses is the kind of foreign policy issue on which the Commission has consistently deferred to the judgment of Executive Branch agencies.[18] We find no reason to differ with the view expressed in this proceeding by the Department of State that South Korea's non-proliferation policies have not changed as a result of recent internal political developments.

DISSENTING OPINION OF COMMISSIONER BRADFORD

For reasons set forth in my Philippine opinion,[1] I think that a more extensive review is needed to support this result. This conclusion would be true of any reactor export and reflects no special concern with these reactors or this country.

[18] *Westinghouse Electric Corporation* (Export of a Reactor to Spain), CLI-76-9, 3 NRC 739, 755, 756 (1976); *Babcock and Wilcox* (Export of a Reactor to West Germany), CLI-77-18, 5 NRC 1332, 1349 (1977).

[1] *Westinghouse Electric Corporation,* CLI-80-14, 11 NRC 631, 666 (1980).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-556**
50-557

PUBLIC SERVICE COMPANY OF OKLAHOMA
(Black Fox Station, Units 1 and 2)

September 22, 1980

Upon consideration of a certified question raised in ALAB-573, 10 NRC 775, 790 (1979), the Commission holds that the health effects associated with routine radioactive emissions from a nuclear power plant in compliance with the design objectives of 10 CFR Part 50, Appendix I may be litigated in individual licensing proceedings.

NEPA: AGENCY RESPONSIBILITIES

The National Environmental Policy Act, which mandates that federal agencies study the environmental consequences of major federal actions to the fullest extent possible, is an essential element of an agency's decision-making process. It "places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action." *Vermont Yankee Nuclear Power Corp.* v. *NRDC,* 435 U.S. 519, 553 (1978).

NEPA: ENVIRONMENTAL IMPACT STATEMENT

The environmental impact statement required by Section 102(2)(C) of NEPA does not simply accompany an agency recommendation for action in the sense of having some independent significance in isolation from the deliberative process; rather, it is an integral part of the Commission's

decision and forms a vital part of the decisional record, such that in a licensing proceeding, the agency's decision would be fundamentally flawed without it. *Calvert Cliffs' Coordinating Committee, Inc.* v. *AEC,* 449 F.2d 1109 (D.C. Cir. 1971).

RULES OF PRACTICE: OFFICIAL NOTICE (RECORD OF RULEMAKING)

Licensing Boards may take official notice of the environmental record compiled in the 10 CFR Part 50, Appendix I rulemaking in reaching conclusions as to the health effects from releases within Appendix I, but compliance with that Appendix does not conclusively establish the insignificance of the associated health effects.

TECHNICAL ISSUES DISCUSSED:

Radioactivity releases; as low as reasonably achievable (ALARA); 10 CFR Part 50, Appendix I.

MEMORANDUM ON CERTIFIED QUESTION

The Atomic Safety and Licensing Appeal Board in ALAB-573 certified to the Commission for its consideration the question:

> Where routine radioactive emissions from a nuclear power plant will be kept "as low as is reasonably achievable" in accordance with 10 CFR Part 50, App. 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? *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-575, 10 NRC 775, 790 (1979).

On February 21, 1980, the Commission accepted the certified question because it raised important legal and policy considerations with respect to every NRC adjudication. The parties to the proceeding were directed to file written views on the question. The Commission has before it the views of the NRC staff, the Public Service Company of Oklahoma, the Intervenors, and the Texas Utilities Generating Company, which was permitted to file a brief *amicus curiae.* [1] The matter before the Commission essentially involves

[1]The views of the participants are contained in the following documents:
NRC Staff Brief on Certified Appendix I Issue (Apr. 7, 1980) [hereinafter Staff Brief]; Memorandum Setting Forth the Views of Public Service Company of Oklahoma, et al., on the Question Certified in ALAB-573 (Apr. 7, 1980) [hereinafter Public Service Company Memorandum];

FOOTNOTE CONTINUED ON NEXT PAGE

a determination whether, in promulgating 10 CFR Part 50, Appendix I, the Commission intended that if a utility complies with the design objectives for effluent systems as described by that rule, the health effects of emissions from plants in compliance should be deemed insignificant for purposes of striking the environmental cost-benefit analysis. If the Commission did so intend, then it now must determine whether such compliance may nevertheless be subject to adjudication or whether adjudication should be barred as an impermissible attack on the rule under 10 CFR 2.758.

Resolution of this question, thus, requires identification of the Commission's intent regarding the promulgation of Appendix I and a policy judgment about the continuing validity of an environmental record compiled seven years ago. As described more fully below, the Commission holds that the environmental health effects associated with compliance with Appendix I design objectives for effluent releases may be litigated in licensing proceedings.

I. Background

In 1975, the Commission concluded a rulemaking proceeding intended to quantify design objectives and limiting conditions for operation for the release of radioactive material in light-water-cooled nuclear power reactor effluents.[2] In this proceeding (hereinafter referred to as the Appendix I rulemaking proceeding), the Commission adopted quantitative guidelines to assure compliance with the "as low as practicable" (ALAP) requirements of 10 CFR. 50.34a and 50.36a "by (1) defining design objectives for, and establishing limiting conditions for operation of, light-water-cooled power reactors to limit radiation doses or dose commitments to individuals in unrestricted areas from (a) liquid effluents, (b) gaseous effluents, and (c) radioactive iodine and particulate emissions, and by (2) imposing a requirement that radwaste systems include all items of reasonably demonstrated technology that, with a favorable cost-benefit ratio, can effect a

FOOTNOTE CONTINUED FROM PREVIOUS PAGE

Statement of Intervenors Concerning Certified Issue Relating to Appendix I, 10 CFR 50 (Apr. 1, 1980) [hereinafter Intervenors' Statement]. Intervenors include Ilene Younghein, Lawrence Burrell, and Citizens' Action for Safe Energy (CASE);

Brief *Amicus Curiae* of Texas Utilities Generating Company on Certified Issue (Apr. 7, 1980) [hereinafter Brief *Amicus Curiae*].The Commission invited participation *amicus curiae* in this review; only Texas Utilities responded.

[2]*See In re Rulemaking Hearing,* Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low As Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents, CLI-75-5, 1 NRC 277, 278 (1975). In its decision, the Commission reported that in the future it intended to substitute "as low as is reasonably achievable" (ALARA) for "as low as practicable" (ALAP). The Commission noted that this change in terminology would not affect the numerical values established for 10 CFR 50, Appendix I. *Id.* at 280-81.

reduction in the radiation dose to the general population." *In re Rulemaking Hearing,* Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low As Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents, CLI-75-5, 1 NRC 277 (1975). At that time the Commission also proposed "to conduct a rulemaking hearing to establish appropriate monetary values for the worth of reduction of radiation doses to the population." *Id.* [3] These determinations concluded almost five years of consideration of these issues by the Commission.

On December 3, 1970, the Commission published 10 CFR 50.34a and 50.36a, which specified design and operating requirements for nuclear power reactors to keep levels of radioactivity in effluents "as low as practicable." *See* 35 FR 18385. Although these new sections provided "qualitative guidance," they did not establish numerical criteria for ascertaining when design objectives and operations met the Commission's requirements. At that time, the Commission noted the desirability of developing more specific guidelines. With the promulgation of the Appendix I guidelines, the Commission set forth criteria which, if met, provided an acceptable method of meeting the ALAP requirement.

The proposed amendment to consider whether to add Appendix I to the Commission's regulations was published by the Commission for public comment on June 9, 1971. 36 FR 11113. A public rulemaking hearing on the proposed amendment began on January 20, 1972 before a three-member Hearing Board. *See* 36 FR 22775 (November 30, 1971). The major participants included the Commission's regulatory staff, a consolidated utility group, the Consolidated National Intervenors, the General Electric Corporation, and the State of Minnesota. In addition, 18 persons or organizations, including the U.S. Environmental Protection Agency, made limited appearances during the rulemaking hearing.

The hearing was suspended in May 1972 pending the preparation of an Environmental Impact Statement concerning the proposed guidelines. After a Draft Statement was circulated for comment to various federal agencies and members of the public, including the hearing participants, and after agency and public comments had been reviewed, a Final Environmental Statement was issued on July 26, 1973. The hearing was reconvened in November 1973 to review the Statement. The rulemaking hearing concluded on December 6, 1973 after 25 days of hearings had occurred, 4172 pages of hearing transcript had been recorded, and the thousands of pages of

[3] As an interim measure, the Commission accepted $1000 per total-body man-rem for making the necessary cost-benefit analysis pursuant to 10 CFR 50.34a. At the time the Commission indicated that this figure represented a "conservative value" subject to modification at a later date. *Id.* at 284. The adequacy of that particular figure is not at issue in this proceeding.

prepared written direct testimony and exhibits had been received. The Commission heard oral arguments on the major issue raised in the proceeding — the feasibility and cost of compliance compared to the proposed benefits — on June 6, 1974. The record clearly demonstrated the need to define the ALAP requirement with numerical criteria. After weighing the feasibility of achieving the proposed numerical criteria against the cost of compliance with and the perceived benefits of the criteria, the Commission adopted the Appendix I guidelines.

In adopting Appendix I, the Commission stated that the new criteria, "if met, provide one acceptable method of establishing compliance with the 'as low as practicable' requirements of section 50.34a and 50.36a." CLI-75-5, *supra,* 1 NRC at p. 278. The Commission emphasized that the Appendix I guidelines were not "radiation protection standards," but rather represented a "quantitative expression" of ALAP. *Id.* at 279.[4] The radiation protection standards, contained in 10 CFR Part 20, were based on the recommendations of the Federal Radiation Council. In its Appendix I decision, the Commission expressed its belief that "the record clearly indicates that any biological effects that might occur at the low levels of these [Part 20] standards have such a low probability of occurrence that they would escape detection by present-day methods of observation and measurement." *Id.* at 280. The Appendix I guidelines established design objectives and limiting conditions for operation based on the "principle that, within established radiation protection guides [Part 20], radiation exposures to the public should be kept 'as low as practicable.' This precept has been a central one in the field of radiation protection for many years." *Id.* The Appendix I guidelines were selected because the record before the Commission demonstrated that the limits would be "practicably achievable for almost all cases" in which the Commission considered them applicable. Furthermore, in recognizing the conservative nature of the figures, the Commission felt that no additional expense could be justified in attempting to reduce further the exposure of an individual to radioactive material in effluents released to unrestricted areas from light-water-cooled reactors. Thus, in describing the actual implementation of the numerical Appendix I guidelines, the Commission stated that, with respect to section 50.34a, any facility conforming to the criteria would be "acceptable without further question." *Id.* at 333.

[4]The Commission's radiation protection standards, which remained unaffected by the Commission's decision, are contained in 10 CFR Part 20, "Standards for Protection Against Radiation."

II. Decision Below

The two-member Appeal Board, in affirming the application below, presented two different rationales about the effect of Appendix I compliance. *See Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 787-90, 808-20 (1979), *vacated on other issue,* CLI-80-8, 11 NRC 433 (1980).[5] Because this difference of opinion forms the basis of the matter certified, a review of the Appeal Board members' positions below would be useful here.

Generally agreeing with the position set forth by the NRC staff, Chairman Salzman indicated that "Appendix I guidelines should not be understood to bar the litigation in individual licensing cases of the anticipated health effects of routine emissions." ALAB-573, 10 NRC at 790. The staff's arguments have been repeated in its brief before the Commission and will be outlined below.

For the reasons he set forth in his concurring opinion, Member Johnson "would hold that in individual licensing cases, Appendix I precludes litigation of the health effects or radioactive emissions from a nuclear plant whose liquid and gaseous effluents are in compliance with the Appendix I guidelines." *Id.* at 820. In explaining his position, Member Johnson indicated that he found precedential support in the Appeal Board's decision in *Potomac Electric Power Company* (Douglas Point Nuclear Generating

[5]The Appeal Board in *Black Fox* also ordered the NRC staff to inform the Commission *in every case* whether or not the staff believed further consideration of Class 9 accidents was appropriate. *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 790-92 (1979). The Commission did not believe that generic policy on consideration of Class 9 accidents should be developed by ruling on a case-by-case basis and vacated the Appeal Board order on that point. CLI-80-8, 11 NRC 433 (1980). In so doing, the Commission, pending the adoption of a new generic policy (*see* 45 FR 40101 (June 13, 1980)), intended that it would address only those cases in which the staff believed that special circumstances were present.

Station, Units 1 and 2), ALAB-218, 8 AEC 79 (1974) [hereinafter *Douglas Point*].[6]

In *Douglas Point* the Appeal Board concluded that the environmental consequences of the uranium fuel cycle had to be considered in the construction permit proceeding to the extent contemplated by 10 CFR Part 50, Appendix D, A 15. ALAB-218, 8 AEC at 88. Because an individual demanding intervention in the proceeding sought to challenge the validity of the environmental costs quantified by the Commission in subsection 15, the Board denied his request to intervene. *Id.* Noting that the challenged figures formed "an integral part of the new regulation," the Board held that "[t]o go behind them and challenge the basis on which they rest is in effect a challenge to the regulation itself." *Id.* at 89.[7] Member Johnson believes that the situation here is analogous to that which formed the basis for the *Douglas Point* holding. In his view, the Commission must have promulgated Appendix I to minimize the radiation-induced health effects from exposure, based on a set of findings that necessarily were incorporated into Appendix I. ALAB-573, 10 NRC at 814-16.

In the case at bar, the staff argued to the Appeal Board that whereas the underlying raw data used to quantify the environmental costs of the uranium fuel cycle attributable to each nuclear power plant ultimately became a part of Table S-3, the Final Environmental Statement setting forth the health effects for Appendix I (WASH-1258) was not so integrated; thus, *Douglas Point* was inapposite. Member Johnson rejected that

[6]In the *Douglas Point* case, an individual appealed an order that denied him leave to intervene in a construction permit proceeding because his "generic" contentions regarding the adverse effects of the uranium fuel cycle could not be entertained in such a licensing proceeding. *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 79 (1974). The petitioner asserted that he had no desire to participate in the fuel cycle aspects of the proceeding unless he would be free to challenge the validity of certain substantive provisions of the regulation. *Id.* at pp. 79-80. Had he not made such an assertion, the Appeal Board noted that it would have allowed him to intervene. *Id.*

Prior to the Board's decision, the Commission had completed a rulemaking proceeding for evaluating the consequences of the use of uranium as fuel. The results of that proceeding included the publishing of a detailed report on the Commission's findings. *See Environmental Survey of the Uranium Fuel Cycle* (WASH 1248) (Apr. 1974). The findings also were included in one of the Commission's regulations (10 CFR Part 50, Appendix D, A 15(a)) implementing the National Environmental Policy Act of 1969. The Appeal Board stated that "[s]ubsection 15(a) requires the introduction into the cost-benefit analysis prepared for each proposed nuclear facility quantified environmental effects of the uranium fuel cycle developed in the Commission's rulemaking procedure and states that '[n]o further discussion of such environmental effects shall be required.' " 8 AEC at p. 82. In 1974, 10 CFR Part 50, Appendix D was recodified as Part 51. 39 FR 26279 (July 18, 1974).

[7]As the Board recognized, Commission rules or regulations are not subject to attack in an adjudicatory proceeding involving initial licensing under 10 CFR 2.758 except under special circumstances.

argument and concluded that the differences between Table S-3 and Appendix I tended to support, not detract from, the relevance of *Douglas Point* to this case. ALAB-573, 10 NRC at 815. For example, he noted that Appendix I — promulgated only after a lengthy rulemaking hearing — explicity was defined "in terms of a balance that involves, *inter alia,* 'the public health and safety.' " *Id.* Because the Appendix I guidelines were designed specifically to limit the maximu. exposure of radiation a person might receive, Member Johnson stated he could "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." *Id.* at 816.[8]

Finally, Member Johnson indicated that the Commission's characterization of these radiation effects as being very low should apply in NEPA deliberations. *Id.* at 819. Recognizing that these health effects should be considered on the cost side, he concluded that when a nuclear plant meets the ALARA standard 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' before the impact of releases of radioactive effluents would be sufficient to require abandonment of the plant." *Id.* at 820 [footnote omitted].

III. Positions of the Parties

A. NRC Staff.

The NRC staff argues that neither Appendix I nor its administrative history supports the Applicant's position that Appendix I established generically the quantity of the health effects impacts resulting from release at Appendix I levels to be used in cost-benefit assessments for individual facilities under the National Environmental Policy Act of 1969 (NEPA), 42 USC 4321-4361 (1976). Staff Brief at 9. Thus, the staff concludes that litigating the health effects of radiation emissions in an adjudicatory proceeding involving initial licensing is *not* barred by 10 CFR 2.758 as an impermissible attack on a Commission regulation. Staff Brief at 29. The staff marshalls six arguments to support its conclusion.

[8]Member Johnson also stated that the Commission, in establishing a means for evaluating these health effects, must have adopted the BEIR Committee's recommendations on reducing the effects of ionizing radiation. As he noted, the Commission specifically had referred to the BEIR Report in its Appendix I decision. As a result, Member Johnson indicated that "there remains little doubt that the Commission intended to adopt the BEIR Committee's recommendations as a means of evaluating health effects." *Id.* at 818.

First, the staff asserts that Appendix I is not challenged directly by litigation of health effects. Staff Brief at 10. Because the staff does not believe that the Commission established by rule the quantity of health effects from releases at Appendix I levels, it argues that the Applicant's position can only be accepted if evidence of health effects "in effect" constitutes an attack on Appendix I. Staff Brief at 13.[9]

Second, the staff contends that the health effects data described in the Black Fox Final Environmental Impact Statement (FES) were not incorporated by either reference or implication into Appendix I. The staff contends that, under the Applicat's rationale, health effects data discussed in the Black Fox FES is not easily distinguished from the remainder of the information gathered in connection with the rulemaking and the decisional record would include a great mass of information. Staff Brief at 16. The staff concludes that acceptance of the Applicant's position not only would treat the data contained in the Appendix I FES (WASH-1258) as "frozen in time," but also would require importing that data into each FES in every licensing proceeding when no such incorporation was intended. Staff Brief at 17.

Third, the staff argues that litigating the health effects data would not contravene the *Douglas Point* decision. The staff does not believe that the health effects data forms such an "integral part" of Appendix I that litigation should be precluded. In the staff's view, the present situation is unlike the factual situation underlying *Douglas Point* because the health effects data were not explicity incorporated into Appendix I, but rather merely were contained in an FES, which, in turn, contained data adopted from the BEIR Report. *Id.* at 19-21.

Fourth, the staff does not consider litigating the health effects to be a direct challenge to the $1000 per person-rem value contained in Appendix I. Again, the staff returns to its argument that although the health effects considerations in connection with the Appendix I rulemaking were based on information from the BEIR Report, the Commission did not "adopt" these data as part and parcel of Appendix I, so as to render them unassailable in licensing proceedings. *Id.* at 21-23.

[9]The staff notes that to promulgate binding rules, the Commission must comply with the Administrative Procedure Act. The staff argues that because the Commission did not publish a notice in the *Federal Register* about establishing by rule quantified values for health effects, the Commission could not have established such values by rule. Staff Brief at 15. The Applicant, however, contends that the staff is wrong in asserting that the notice requirements of the APA were not met. *See* Public Service Company Memorandum at 19. Because it is not germane to the resolution of the certified question posed by the Appeal Board, we need not address this issue.

Fifth, the staff rejects the Applicant's claim that the present situation is "analogous to reprinting Table S-3 from 10 CFR Part 51 in each FES."[10] The staff argues that unlike Table S-3, which is based on data having a direct asssociation with the value fixed for use in NEPA cost-benefit assessments, the health effects data were not promulgated for use in a NEPA cost-benefit analysis. Rather, the staff contends, the health effects data were derived specifically for the development of Appendix I, a rule not being challenged in this proceeding. Staff Brief at 23.

Finally, the staff believes that the resources saved by not litigating the health effects in each case are offset by policy considerations. In the staff's view, the possibility that low-level radiation might have an adverse impact on humans outweighs the financial costs and Commission resources involved in litigating health effects. The staff argues that parties should be allowed to litigate in individual licensing proceedings as a means for presenting theories and testimony concerning "present thinking" about radiological health effects. Staff Brief at 27-28.

B. Public Service Company of Oklahoma.

The Applicant concludes that both the Commission's regulations and policy considerations require that relitigation of the substantive basis for Commission regulations be prohibited in initial licensing proceedings. Public Service Company Memorandum at 8. The Applicant first asserts that when the Commission established the Appendix I limitations, the risk of health effects from the routine release of radioactive materials in effluents to unrestricted areas was a controlling consideration in the Commission's decision. *Id.* The Applicant contends that the Commission, in setting these guidelines, complied with its duties under both the Atomic Energy Act of 1954 (AEA), 42 USC 2011-2296 (1976) and NEPA. The Applicant states that the Commission, in concluding that routine releases of radioactive materials in effluents which do not exceed the Appendix I guidelines are not inimical to the public health and safety, had weighed the costs and benefits of such releases pursuant to the AEA and had evaluated the health effects of routine releases of radioactive materials in effluents and balanced these effects with environmental and other considerations under NEPA. Public Service Company Memorandum at pp. 12 and 14-15. Thus, these judgments formed an integral part of the Commission's decision.

In addition, the Applicant argues that the Commission prohibits attacks on its own regulations in individual licensing proceedings. In stating that

[10]Table S-3, contained in 10 CFR 51.20, codifies the environmental costs of the uranium fuel cycle attributable to each nuclear power plant.

the *Douglas Point* factual situation is "virtually indistinguishable" from the present proceeding, the Applicant indicates that an attack on the "basis for a regulation" is an attack on the regulation. Application of that principle here would preclude litigation of the basis for the Appendix I decision in individual proceedings.[11]

C. Other Positions.

The Intervenors argue that Appendix I represents "[a] callous disregard for life which has been justified in the name of money." Intervenors' Statement at 3. Intervenors urge that the Commission answer the certified question in the negative and permit litigation of the environmental effects of compliance with Appendix I.[12] *Id.* at 5.

Texas Utilities contends that any attempt to litigate the health effects of radioactive effluent releases in individual licensing cases, in the absence of a showing of special circumstances under 10 CFR 2.758, constitutes an impermissible attack on the Appendix I guidelines. Brief *Amicus Curiae* at 4. Texas Utilities argues that when the Commission promulgated Appendix I, it expressly concluded that releases complying with the guidelines are so low that no adverse health effects will threaten the public. *Id.* at 9. Furthermore, Texas Utilities argues, the *Douglas Point* decision holds that litigation is barred by 2.758 in individual licensing proceedings. *Id.* at 13.

IV. Decision

Resolution of the certified question requires the Commission to decide whether the environmental data compiled for the Appendix I rulemaking was intended to be incorporated into the rulemaking such that the data are shielded from litigation, under 10 CFR 2.758. The proper use of this record is basic to the Commission's discharge of its environmental duties.

It is well-settled that NEPA, which mandates that federal agencies study the environmental consequences of major federal actions "to the fullest extent possible," 42 USC 4332, is an essential element of an agency's decisionmaking process. "NEPA places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed

[11]The Applicant further argues that NEPA permits the consideration in one proceeding of environmental impacts established in a different proceeding. Public Service Company Memorandum at 15-17.

[12]Arguing that the Applicant lacks standing because it has shown no prejudice as a result of the decision of the Appeal Board, Intervenors urge that the Commission "dismiss this inquiry as improvidently started." Intervenors' Statement at 2. As was explained at the outset, the Commission accepted the certified question from the Appeal Board (not the Applicant), because it raised important generic concerns. Intervenors' argument is, therefore, irrelevent to this proceeding.

action...." *Vermont Yankee Nuclear Power Corp.* v. *Natural Resources Defense Council, Inc.*, 435 U.S. 519, 553 (1978). An agency discharges that obligation principally by filing an environmental impact statement. 42 USC 4322(c). The impact statement does not simply "accompany" an agency recommendation for action in the sense of having some independent significance in isolation from the deliberative process. Rather, the impact statement is an integral part of the Commission's decision. It forms as much a vital part of the NRC's decisional record as anything else, such that for reactor licensing, for example, the agency's decision would be fundamentally flawed without it. *Calvert Cliffs' Coordinating Committees, Inc.* v. *AEC*, 449 F.2d 1109 (D.C. Cir. 1971).

In developing the Appendix I guidelines, the Commission fully complied with NEPA as it applied to that rulemaking action by compiling WASH-1258, the three-volume "Final Environmental Statement Concerning Proposed Rule Making Action: Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low As Practicable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents" (July 1973).[13] In promulgating the Appendix I guidelines, the Commission intended that the radiation exposures that might result from routine releases of radioactive materials to unrestricted areas be reduced equivalent to small fractions of doses from natural background radiation. CLI-75-5, *supra,* 1 NRC at 291. However, there is no specification of health effects in the Appendix I rule itself. There is some discussion of health effects in WASH-1258 and the Commission opinion accompanying the rule. The actual guidelines adopted were quite similar to those suggested by the staff in WASH-1258[14] and it is stated in that document that "[t]he levels of radiation doses resulting from releases of radioactivity in effluents from nuclear power stations discussed in this

[13]The purpose of the statement was two-fold. First, it was prepared so that the Commission could "evaluate the practicability and environmental impact of releasing radioactive material in effluents from light-water-cooled nuclear power stations within the levels set forth in the proposed Appendix I guides...." *Id.* § 1.2. Second, it also would help the Commission "evaluate alternatives for providing guidance on limiting levels of radioactive material in effluents from light-water-cooled nuclear power stations to as low as practicable levels." *Id.* Public comments on the Commission's draft environmental impact statement and the staff response to those comments are collected in Volume 3 of the document. As noted above, this Final Environmental Statement was the subject of a public rulemaking hearing that was reopened in November 1973. After the hearing was concluded and the Commission heard oral arguments on June 6, 1974, the Commission adopted specific criteria with the promulgation of the Appendix I guidelines. In developing these guidelines, the Commission took into consideration the comments and suggestions of numerous groups, including representatives of power reactor suppliers, electrical utilities, architect-engineering firms, environmental and conservation groups, and State governments.

[14]*Compare* 1 NRC 281-82 (setting forth numerical design-objective guides) *with* WASH-1258, at 1.4.1 (doses to humans if proposed Appendix I guidelines met).

Statement are substantially below the levels where biological damage has been observed in humans." WASH-1258 at 1.4.2. The Commission also stated in its opinion that the November 1972 BEIR Report represented a "generally accepted evaluation of the effects of ionizing radiation." CLI-75-5, *supra,* 1 NRC at 311. Moreover, in discharging the NEPA duty in the Appendix I rulemaking proceeding, the Commission studied the environmental cost and benefit requirements that would result from the proposed decision. However, the Commission finds no evidence that health effects determinations were ever intended to be incorporated into the rule. The rule had a less ambitious goal — that of setting design objectives for effluent systems. This is made clear in the opening paragraph of the Commission's opinion where it is stated that the proceeding concerns "numerical guides for design objectives and limiting conditions for operation to meet the criterion 'as low as practicable.' " CLI-75-5, *supra,* 1 NRC 278. This is in marked contrast to the Table S-3 and S-4 rulemakings where it was manifest from the outset that the proceedings were intended to lead to generic specifications of environmental impacts. Since the Appendix I rule itself does not specify health effects, and there is no evidence that the purpose of the Appendix I rulemaking was to determine generally health effects from Appendix I releases, it follows that health effects of Appendix I releases must be litigable in individual licensing proceedings.

In so concluding, the Commission notes that this decision is not controlled by *Douglas Point,* given a crucial role by the parties.[15] In *Douglas Point* the Appeal Board was confronted with an attempt by an individual to challenge in a construction permit proceeding the validity of the environmental costs quantified by the Commission in 10 CFR Part 50, Appendix D, A 15. Prior to the Board's decision, the Commission had codified environmental data into Table S-3 to quantify the environmental impacts of the uranium fuel cycle attributable to each nuclear power plant. Thus, the *environmental* data ultimately incorporated into Table S-3, itself included in 10 CFR Part 50, Appendix D, became part of the rule on the *environmental* aspects of the uranium fuel cycle.

The issue before the Commission differs: whereas *Douglas Point* involved environmental data actually contained in the rule itself, the instant proceeding involves environmental data merely used in support of a rule.[16]

[15]In interpreting our promulgation of the Appendix I guidelines, Member Johnson, the staff, the Public Service Company of Oklahoma, and Texas Utilities looked to the Appeal Board's decision in *Douglas Point* for support in resolving this issue below. The issue before us, however, is not controlled by *Douglas Point.*

[16]It would seem reasonable to hold that conclusions not contained in a rule but nevertheless used in support of a rule could operate to resolve issues generally if those conclusions were *essential* to the validity of the rule. However, the validity of the Appendix I rule is premised on

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Even though the Commission did not expressly use the Appendix I FES to quantify generally the significance of the health effects, and, thus, they may be adjudicated, as a matter of policy, the Commission believes that unnecessary adjudication should be avoided. It serves no useful purpose to litigate this issue when there is no serious contest as to the result. The Commission also recognizes that it should be able to make use of a NEPA record already compiled in discharging its duties. *Cf. Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257 (1979). Accordingly, it strikes as reasonable that a Licensing Board take official notice of the environmental record compiled in the Appendix I rulemaking in reaching conclusions as to the health effects from releases within Appendix I. In particular, we believe that a Licensing Board could take official notice that releases within Appendix I levels result in radiation exposures that are small fractions of doses from natural background radiation and that the 1972 BEIR Report contains a "generally accepted evaluation of the effects of ionizing radiation." This does not mean of course that health effects of Appendix I releases cannot be contested.[17] It only means that litigation regarding these issues need not begin on a clean slate, and that, for example, the BEIR estimates can be relied on in the absence of a contest and may be used, along with any other evidence, in ruling on summary disposition motions and rendering initial decisions.

The Appendix I environmental record is over five years old and the Commission believes, as does the staff, that it might be crucial that "present thinking" be brought to bear in determining whether radioactive emissions to unrestricted areas from light-water nuclear power plant pose an unacceptable environmental risk. *Allied-General Nuclear Services* (Barnwell Nuclear Fuel Plant Separations Facility), ALAB-296, 2 NRC 671, 680 (1975), *see* Staff Brief at p. 17. By holding that official notice can be taken of conclusions in the Appendix I rulemaking but that compliance with Appendix I does not conclusively establish the insignificance of the associated health effects, the Commission permits other interested parties to present the best available evidence on health effects where this would seem important to the decision. Of course, in this case, the Commission need not decide what weight to accord the conclusions in the Appendix I rulemaking in the face of contradictory evidence since a hearing has already been held on the health effects matter. In a future case we may be able to offer additional guidance.

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a weighing of costs and benefits of reductions in radiation exposure, and is not necessarily premised on any conclusion that health effects are "insignificant" or "small."

[17]See 10 CFR 2.743(i).

V. Conclusion

For the above reasons, the Commission concludes that the certified question must be answered in the negative, as explained in this opinion.

Chairman Ahearne dissented from this Opinion. His comments are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 22nd day of September 1980.

CHAIRMAN AHEARNE'S DISSENTING VIEWS:

I believe we should have responded to the certified question by deciding that health effects from normal operation of plants, meeting Appendix I, should not be litigated in individual proceedings.

Basically, I can see no reason to litigate the health effects under these circumstances, and I object to what would be allowing litigation simply for the sake of litigation. NEPA requires us to take into account environmental impacts in making decisions. Potential health effects of radioactive effluents are an impact which we have recognized an obligation to consider. There are two ways in which these impacts could influence our decision: we could require additional measures to reduce the effluent, and we could consider any unavoidable impacts in deciding whether or not to reject an application. With respect to effluents which meet the objectives of Appendix I, these decisions have already been made.

The Commission put a considerable amount of time and effort into developing the numerical limits found in Appendix I. Its decision was based on an EIS and an extensive hearing record. The objective of the entire exercise was to define levels at which no further measures would be justified. The Commission explicitly stated:

> "The numerical guidelines were chosen on the basis that the record shows these limits to be practicably achievable for almost all cases to which we consider them applicable. Furthermore, in view of the elements of conservatism and realism inherent in the evaluations presented in the hearing, we believe the record supports the conclusion that the maximum individual exposure likely to ensue from operation of nuclear power reactors in conformance with Appendix I is sufficiently small that no additional expense could be justified for reducing the exposure of an individual further than required by Appendix I.
>
> It must be understood in discussing the matters of calculational conservatism and realism that Appendix I means, implicity, that any facility that conforms to the numerical and other conditions thereof is acceptable without further question with respect to Section 50.34a. It is just as essential that Appendix I be understood as not implying, conversely, that any facility not conforming is necessarily unacceptable. The numerical guidelines are, in this sense, a conservative set of requirements and are indeed based upon conservative evaluations."

Rulemaking Hearing: Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low as Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents, 1 NRC 277, 333 (1975). Thus clearly a Board should not require additional measures to reduce the effluent.

If there is no justification for imposing additional measures to reduce the effluent, then there will be no detectable impact on the overall cost/benefit balance. Theoretical arguments that this might be that final minute cost which tips the balance are just that—totally theoretical. Given the imprecision of the judgments being made, this cost is clearly not going to be determinative.

Finally, the most recent BEIR report has reduced the estimate of health impacts from those of the 1972 BEIR study, which was part of the basis for Appendix I. Thus, to the extent that new information would require a change in Appendix I objectives, a reexamination should produce higher rather than lower acceptance levels.

We should focus staff resources on some of the real problems facing this agency, rather than devote resources to an issue whose resolution is obvious.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS
John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-498**
50-499

HOUSTON LIGHTING AND POWER COMPANY
(South Texas Project, Units 1 and 2)

September 22, 1980

The Commission denies a request for a hearing on a show-cause order issued by the Director of Inspection and Enforcement on the grounds that petitioners are not entitled to a hearing as of right and that a discretionary hearing on the show-cause order is not the appropriate forum for trial of the allegations. However, the Commission directs that the charges be examined in a pending operating license proceeding, and that the Licensing Board issue an expedited, partial initial decision on those charges.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (HEARING AS OF RIGHT)

A petitioner for a hearing in a show-cause proceeding who alleges that its interests are adversely affected by the failure of the Director of Inspection and Enforcement to take stronger action than that proposed in his show-cause order is not entitled to a hearing as of right.

ENFORCEMENT ACTIONS: EFFECT ON LICENSING ACTIONS

A decision by the Director of Inspection and Enforcement in an enforcement action does not bind a licensing board in an operating license adjudication from making a decision which would further restrict, or even deny a license for, the operation of a facility.

ATOMIC ENERGY ACT: LICENSING STANDARDS

Either abdication of responsibility or abdication of knowledge on the part of a licensee or prospective licensee, whether during the construction or operation phase, can form an independent and sufficient basis for revoking a license or denying a license application on grounds of lack of competence (*i.e.,* technical) or character qualification. 42 USC 2232a.

ATOMIC ENERGY ACT: LICENSING STANDARDS

False statements in documents submitted to the NRC may be grounds for denial of a license application or revocation of an existing license.

MEMORANDUM AND ORDER

Citizens Concerned About Nuclear Power, Inc. and Citizens for Equitable Utilities (hereafter collectively referred to as "Citizens") have requested a hearing on an order issued by the Director of the Office of Inspection and Enforcement on April 30, 1980 which requires Houston Lighting and Power Company (hereafter, "Houston"), holder of a construction permit for the South Texas Project, Units 1 and 2, to show cause why safety-related construction activities at that site should not be stopped in 90 days and remain stopped until such time as the permitee completes a number of changes in its operations and procedures. 45 FR 30753 (May 9, 1980). This request will be denied, though alternative relief will be accorded to Citizens in the context of a pending operating license proceeding for these facilities.

Background

The history of much of the controversy surrounding the South Texas Project is catalogued in some detail in the Director's Order to Show Cause, as well as in a Notice of Violation and a Notice of Proposed Imposition of Civil Penalties for $100,000, issued on April 30, 1980. In short, the Notice of Violation refers to 28 items of noncompliance by Houston, illustrated by approximately 50 incidents. These help to substantiate a critical conclusion reached in the Order to Show Cause — i.e., the "lack of detailed knowledge and involvement [in the construction of the South Texas Project] has hindered Houston Lighting and Power Company's ability to maintain adequate control" over Brown and Root, Inc., its contractor. 45 FR at 30755. As a result, Brown and Root was alleged to allow conditions at the site to deteriorate to such a level that an immediately effective suspension order was issued by the staff. That order and the grounds for its termination

focus on correction of the particular problems through the imposition of alternative management schemes relating to implementation of an effective quality assurance/quality control program. These changes were proposed by the staff only after 12 separate NRC investigations over a 2-1/2 year period, during which there were conferences with Houston, several prior items of non-compliance, a deviation, five immediate action letters and presently numerous substantiated allegations of harassment, intimidation and threats directed to quality assurance/quality control personnel and false statemets in the Final Safety Analysis Report ("FSAR"). As the Director of the Office of Inspection and Enforcement concluded, "[t]he facts...reflect widespread noncompliance by the licensee and its principal contractor, Brown and Root, with 10 CFR Part 50, Appendix B of the Commission's regulations." 45 FR at 30755.

Houston was given the opportunity to file a written answer to the Order to Show Cause, with the requirement that such answer "specifically admit or deny each allegation." 45 FR at 30756. Furthermore, Houston "or any other person whose interest may be affected by this Order" was permitted to request a hearing. *Id.* The Director stated that if a hearing is held, the issue to be considered would be "whether the licensee shall be required to take the actions specified in Section V(A)" of the Order to Show Cause. 45 FR at 30756-30757. Houston responded on May 23, 1980 to the Order to Show Cause, the Notice of Violation and the Notice of Proposed Imposition of Civil Penalties. Most of the allegations in the Notice of

Violation were substantiated by Houston.[1] But in failing to specifically affirm or deny charges of harassment, intimidation and lack of support of quality control inspectors by quality control management, Houston alleged that "the absence of information which would identify persons, places and dates" has made its task "impossible." However, it did state that "our review indicates that such instances probably did occur" and in Houston's reply to the Order to Show Cause, discussed in more detail later, it responded that "the substance of the allegation (with respect to certain incidents of harassment and intimidation) is conceded in response to the first item of noncompliance." Houston contended that it had taken "important steps...to assure that QA/QC personnel have the requisite freedom and authority to identify problems and determine that they are adequately resolved, free from production pressures" and that "this concern has been brought under control." It promised further steps and vigilance to assure that these problems do not recur. It also identified six "root causes" for the items of noncompliance which it promised to attack.[2] Finally, it

[1]In response to the following items, Houston replied that each item of non-compliance was "substantiated": failure to complete backfill compaction in accordance with a qualified procedure; failure to take prompt corrective action when test apparatus failed, halting testing; failure to establish procedures for systematic sampling as part of soil testing program; failure to document soil lift thickness and number of passes of equipment as part of QA records; non-conformance reports, examination checks/inspection books and field requests for engineering action-trend analysis are inadequate; concrete placement activities problems not corrected in accordance with prior commitments; failure to follow procedures with regard to qualification of civil and concrete QC inspectors; failure to control documents in that contractor's QA Manual copies are out of date; failure to control welding as a process with regard to cleanliness; failure to control radiography, a special process, leading to poor radiographic quality; failure to record weld-related linear indications on accompanying interpretation sheet; failure to control liquid penetrant examinations; failure to follow procedures in that a procedure was used after an expiration date; failure to take corrective action when cadwelders need requalification; failure to take corrective action in a reasonable time and management did not get the problems resolved with regard to nonconformance situations identified through the Brown and Root Site Internal Surveillance activity; failure to follow procedures to document and correct unsatisfactory surveillance conditions; failure to control the use of a nonconforming hammer for penetration; failure to control the dimensions of the split spoon in soils test control; failure to provide for, and conduct, supplemental audits as part of the Houston QA plan and audit system; failure of Houston to perform adequate audits in that unsatisfactory conditions were not observed; failure to perform audits on the prescribed frequency; failure of Brown and Root to perform in-depth audits of site activities; failure to inspect reinforcing steel for loose rebar prior to concrete placement; failure to control design changes in root openings and weld dimensions; and failure to follow ASME R&VP Code per 10 CFR 50.55a for radiography qualification technique.

[2]These six "root causes" were said to be:

1. Translating specifications and requirements into clear and simplified procedures down to the job level.
2. Improvement of systems for documenting nonconforming conditions and systematic trend analyses to identify programmatic weaknesses.
3. Upgraded training and indoctrination of personnel at all levels in quality-related tasks with

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recognized that "[u]pper management has the responsibility to assure that quality functions have a high degree of visibility to enhance quality awareness throughout the project."

In responding to the Order to Show Cause, Houston incorporated the text of its response to the Notice of Violation. It admitted that "clearly lack of detailed involvement by management was a contributor to the problems noted" in part of the Order to Show Cause, but it reiterated its view that other "root causes" were also involved. It promised to respond to the specific inquiries put to it by the Order to Show Cause within 90 days, at which time it would also address the allegation that "two apparent false statements in the FSAR were identified regarding test and observation [work] actually performed. In reply to the Notice of Proposed Implementation of Civil Penalties, it also incorporated its response to the Notice of Violation and forwarded a check for $100,000 in payment.

On May 28, 1980, Citizens requested a hearing on the Order to Show Cause. It argued that the "violations found in the [NRC] investigations of November 1979 through February 1980 are not isolated events but rather part of a consistent and disturbing pattern." It cited a July 1977 Brown and Root inter-office memo as some evidence that quality assurance/quality control personnel were intimidated as early as three years ago. Citizens argued that charges of intimidation "over a three year period during which more than fifty percent of this plant was constructed is enough." Even after the latest NRC investigation, alleged Citizens, harassment intimidation and firings on "trumped up charges" of quality control inspectors had occurred. Referring to inadequacies in the backfill work, voids in the concrete, defective welding, failure to follow proper procedures, and "the constant repetition of the same problems," Citizens claimed that these are "clear indicators that quality has not been assured since major project work began."

Citizens noted that the above charges, substantiated by the Commission's own investigation, directly support Citizens' contention before the Licensing Board in the operating license proceeding for the South Texas

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special emphasis on the project goals of reliability and safety.

4. Stronger system controls, reflected in procedures which assure that quality-related activities are initiated, controlled and properly documented.
5. Improvement of the system of audits to verify adherence to procedures and identify deficiencies for resolution at the appropriate level of management.
6. Increased visibility of, and active participation by, upper management in QA/QC activities.

While identification of these "root causes" may be helpful to an analysis of the problems at the South Texas Project, they might also be said to raise a question of overriding significance: are these problems themselves symptoms of some other and more basic deficiencies?

Project, Units 1 and 2. It claimed that "[n]ot having the public hearing [on the enforcement order] will adversely affect the ability of the [Licensing Board] to evaluate this project and the ability of Intervenors to support their contentions before the [Licensing Board]." As Citizens sees it, a hearing would lead the NRC staff to call as witnesses presently unidentified persons whose investigative interviews support the enforcement order, and this in turn would allow Citizens to gather additional testimony from these witnesses. Citizens is concerned that with rapid turnover at Houston's facility, these witnesses will be unavailable for future discovery and that only the intervenors will be denied their identities. Furthermore, Citizens expressed its apprehension that "the basic approach of the NRC Order to Show Cause is that problems to date will be corrected by future reform and the project will then go forward." In Citizens' view, this "would be a de facto resolution of the very contention [Citizens is] arguing before the [Licensing Board]." Even if the issue raised by Citizens were left open for adjudication in the licensing proceeding, in its opinion the failure to have a hearing on the enforcement order would be tantamount to denying to it "the evidentiary basis for the NRC actions in the Order to Show Cause."

Citizens argued that other, practical reasons support its hearing request. For example, taking issue with the statement in the Notice of Violation that "no items of major safety significance were found which related to the staff charges," Citizens has expressed a desire to develop more facts on this issue by further probing of quality control employees. In addition, it stated an intention to tie into the NRC staff allegations which supply the basis for the Notice of Violation the "prior history of similar problems." Through this analysis — what might be called an effort to look at the whole forest instead of individual trees — Citizens would attempt to convince the Commission, through the adjudication of the enforcement order, that the "only appropriate action responsive to the long history of abuse is revocation of the construction license" held by Houston.

Citizens recognized that its contention about plant construction, raised in the operating license proceeding, might lead the Licensing Board to conclude that Houston's operating license application should be denied. However, Citizens noted that in the interim "the project will have gone forward and more millions of dollars will have been spent.... The evidence is already available to take conclusive action now." Citizens also argued that the public is entitled to a "full airing of all relevant information regarding the safety of the nuclear plant" so that future plans can be made.

Finally, Citizens sees the petition process under 10 CFR 2.206 as unlikely to yield the results it seeks. "[I]f the Commission does not see fit to revoke the construction license based on what is already known, a denial of 2.206 request seems likely."

On June 13, 1980, Houston responded to Citizens' request for a hearing. It argued that Citizens is not entitled to a hearing as a matter of right because, by its desire to address the issue of whether the Order to Show Cause contains a complete factual analysis of the problems at the South Texas Project site and contains an adequate enforcement remedy — i.e., suspension until certain conditions are met, instead of revocation — Citizens has raised an issue that goes beyond the scope of the Order to Show Cause. Houston relied upon *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980) and *Wisconsin Electric Power Company* (Point Beach, Unit 1), (Unpublished Commission Order of May 12, 1980). Furthermore, Houston argued that Citizens would not be prejudiced by failure to hold a hearing on the enforcement order; to the contrary, alleged Houston, Citizens can use its discovery rights in the operating license proceeding and the Freedom of Information Act, 5 USC 522 and 10 CFR 9.3 *et seq.*, to determine the identity of quality control employees who provided the allegations in the Order to Show Cause. Finally, Houston contended that Citizens has not made a case for the Commission to exercise its discretion to convene a hearing on the enforcement order. In Houston's view, "[t]here is no issue of fact upon which to join issue in a discretionary hearing at this time — except the unsupported, but implicit, suggestion of [Citizens] that the Director [of Inspection and Enforcement] erred in charting the course set forth in the Order." If this is Citizens' complaint, stated Houston, it may file a 2.206 request immediately or subsequent to the Director's evaluation of Houston's response to the actions required by the Order to Show Cause. Houston is candid, however, in stating its view that Citizens' request for a hearing, if construed as a 2.206 petition, should be rejected.

The NRC staff filed its response to Citizens' request on June 24, 1980. The staff argued that Citizens was not in any way injured by the Order to Show Cause, and, hence, that Citizens had no standing to request a hearing as a matter of right. Citing *Public Service Company of Indiana, supra,* the staff stated that to allow Citizens to have a hearing on the issue of whether a stricter enforcement action should have been taken would be contrary to the Commission's "policy that encourages licensees to consent to, rather than contest, enforcement actions." Furthermore, the staff noted that the Director held out the possibility of further enforcement action, depending upon Houston's actions in response to the Order to Show Cause, and that Citizens is always free to submit a 2.206 petition. As to the question of a discretionary hearing, the staff claimed that "such a hearing is neither necessary nor appropriate." As the staff sees it, "the issue which the Petitioners really desire litigated is the issue which goes to the heart of the operating license proceeding, *i.e.,* whether there is reasonable assurance that

the facility has been constructed soundly and therefore can be operated safely." It is precisely this issue, contended the staff, that is outside the scope of the enforcement action. Responding to Citizens' allegations of prejudice if a hearing is not held, the staff stated that Citizens has full discovery rights in the operating license proceeding and that, in fact, the Licensing Board in that case has expedited a hearing on the very issues sought to be raised by Citizens. See *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2) ASLB Memorandum (March 10, 1980). In the staff's view, "should there be any matter which the Board believes justifies additional enforcement action, *e.g.,* suspension, then such matters would be promptly referred to the Director for his consideration." Furthermore, the staff stated that "the fact that the Licensee has consented to the Order [to Show Cause] and the imposition of a civil penalty should be of some support to the Petitioners in the operating license proceeding."

On July 28, 1980, Houston filed a detailed response to Section V of the Order to Show Cause. It stated that it has undertaken major changes in its organization, personnel and procedures since the NRC investigation. For example, its Executive Vice-President has been assigned responsibility for the South Texas Project, virtually on a full-time basis, and the QA Department Manager reports directly to him. Additional quality assurance specialists have been hired, and there has been retraining of key Houston personnel. The system of audits has been upgraded. Houston also noted that Brown and Root has taken several steps, including attitude improvement, revision of procedures and personnel changes and additions. All of these changes by Houston and Brown and Root are to assure the adequacy of ongoing work, develop a program for commencing previously suspended activities on an orderly basis, and verify the adequacy of work previously completed. Houston concluded:

> These commitments, faithfully executed, provide assurance that the construction activities at STP are, and will be, conducted in accordance with applicable requirements, and consistent with the public health and safety, and therefore should not be stopped.[3]

Legal Discussion Concerning a Hearing on the Enforcement Order

We agree with Houston and the staff that under the holdings in *Public Service Company of Indiana, supra* and *Wisconsin Electric Power Company,*

[3]Houston's July 28 document is quite lengthy. Because the adequacy of its technical contents can better be judged by the Director of the Office of Inspection and Enforcement, we have not endeavored to quote extensively from it, although we have examined the entire document insofar as it is relevant to our ruling on Citizens' request for a hearing on the order to show cause.

supra, Citizens is not entitled to a hearing on the enforcement order as a matter of right. Like the complainants in those two cases, Citizens is arguing that the remedy proposed by the Director is insufficient to protect the public health and safety. Thus, it is not adversely affected by the Director's action imposing increased regulation on Houston, but is rather aggrieved by the Director's failure to take stronger action. Furthermore, by its very terms, the Order to Show Cause states that if a hearing is held, the issue to be considered would be "whether the licensee shall be required to take the actions specified in Section V(A) of that order," and not whether other, more stringent actions should also be required. The cited cases have rejected a right to a hearing in these circumstances.

Citizens has offered a number of reasons why a hearing should be granted as a matter of discretion. It claims that a hearing would require the NRC staff to call as witnesses several persons who have not yet been identified, but whose interviews support the Director's order. This, in turn, would allow Citizens to learn the identities of those persons and to further question them. However, as Houston suggests, Citizens can file either interrogatories with the staff or a Freedom of Information request with the Commission in order to learn the identities of persons with knowledge about the incidents covered by the Director's order. These possibilities are a far cry from Citizens' fears that failure to have a hearing on the enforcement order would be tantamount to denying to it the "evidentiary basis for the NRC actions in the Order to Show Cause."

We also find no support for Citizens' proposition that if Houston undertakes the reforms suggested by the Order to Show Cause, this would be a "de facto resolution of the very contention" that Citizens is presenting to the Licensing Board in the operating license proceeding. A decision by the Director of Inspection and Enforcement in an enforcement action does not bind a Licensing board in an operating license adjudication from making a decision which would further restrict, or even deny a license for, the operation of a facility. The Board must make its decision based upon the record in the case before it. Similarly, we do not believe that a hearing on the enforcement order is necessary on the ground that it could result in a relatively early revocation of a construction permit, while the Licensing Board in an operating license proceeding will be swayed by the fact that the project has further progressed and millions of dollars more have been spent. As the D.C. Circuit said in *Porter County Chapter of Izaak Walton League of America* v. *NRC,* 606 F.2d 1363, 1370 (D.C. Cir. 1979) one should:

> not transform a projected tendency to inertia into a presumption of infidelity to duty. (cite omitted). 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.

Thus, it is not true, as Citizens alleges, that a "full airing of all relevant information regarding the safety of the nuclear plant" can come about only in a hearing on the enforcement order. To the contrary, the operating license proceeding can very well serve this goal. Moreover, as Houston and the staff noted, an informal public hearing was scheduled (and has now been held) in Bay City, Texas to address the issues covered by the Director's action.

Thus far, we have indicated why we believe that a discretionary hearing on the enforcement order is not the appropriate forum for the trial of Citizens' allegations. The staff, however, has suggested the possibility of a 2.206 petition. We must candidly state, as Houston has done, that the filing of such a petition is likely to be an exercise in futility in this instance. The Director has reached a conclusion as to the appropriate remedy and Citizens has been unable to provide new evidence which could be expected to cause the Director to reconsider; in fact, it is precisely because Citizens is lacking such evidence that it has called for a full hearing on the enforcement order where it can develop that evidence. If Citizens' charges are to be given appropriate consideration, they will have to be addressed in some other way.

Legal Discussion Concerning the Operating License Proceeding

The Licensing Board in the operating license proceeding recognized the seriousness of the charges by Citizens, and it proposed to expedite a hearing on those charges "so that, if corrective action is required, it may be undertaken as early as possible in the construction schedule." ASLB Memorandum at p. 2 (March 10, 1980). Even more recently the Board stated:

> [Citizens]...recognize[s] that it would not be appropriate for a hearing on [the quality assurance-related contentions] to begin prior to the Commission's action on the show-cause hearing request. The staff has also taken that position before us. We agree. The matters raised by the show-cause order appear to include the substance of [these] Contentions 1 and 2 (although the relief which we could grant might well be broader than the relief sought under the show-cause order)....
>
> We reiterate, however, that, whether the hearing is held under the aegis of the show-cause proceeding or this proceeding, the prompt resolution of the QA/QC issue is, in our view, in the public interest. To the extent that the Commission were to determine that hearing of the issues in this proceeding is preferable to hearing them in a show-cause proceeding, we would, of course, be prepared to admit into controversy any issues comprehended by the show-cause order but not presently included in Contentions 1 and 2. ASLB Memorandum at p. 3 (August 1, 1980).

We agree with the Board that expedition is necessary, but for an additional and important reason that goes to the core of Citizens' complaint that Houston should not be operating a nuclear facility.

The history of the South Texas Project — at least 12 separate NRC investigations over a 2-1/2 year period, resulting in conferences with the licensee, several prior items of non-compliance, a deviation, five immediate action letters, and how substantiated allegations of harassment, intimidation and threats directed to QA/QC personnel and apparent false statements in the FSAR — is relevant to the issue of the basic competence and character of Houston. Central to that issue are two questions: whether the facts demonstrate that the licensee has abdicated too much responsibility for construction to its contractor, Brown and Root, Inc., and whether the facts demonstrate an unacceptable failure on the part of Houston to keep itself knowledgeable about necessary construction activities. Either abdication of responsibility or abdication of knowledge, whether at the construction or operating phase, could form an independent and sufficient basis for revoking a license or denying a license application on grounds of lack of competence (i.e., technical) or character qualification on the part of the licensee or license applicant. 42 USC 2232a. In large part, decisions about licenses are predictive in nature, and the Commission cannot ignore abdication of responsibility or abdication of knowledge by a license applicant when it is called upon to decide if a license for a nuclear facility should be granted.[4]

We believe that the above issues relating to technical competence and to character permeate the pleadings filed by Citizens. They do deserve a full adjudicatory hearing, as they will no doubt get in the operating license proceeding, and they do deserve expeditious treatment because they could prove disqualifying.[5] Accordingly, we agree that the Licensing Board in the operating license proceeding should proceed with its expedited hearing on the quality control-related issues (including the allegations of false statements in the FSAR). As the Board has already determined to proceed in this manner, no formal order is necessary. However, we expect the Board to look at the broader ramifications of these charges in order to determine

[4]Equally, and perhaps of more concern, the Commission cannot ignore false statements in documents submitted to it. Congress has specifically provided that licenses may be revoked for "material false statements," see section 186a of the Atomic Energy Act, and we have no doubt that initial license applications or renewal applications may also be denied on this ground, certainly if the falsehoods were intentional, *FCC* v. *WOKO*, 329 U.S. 223 (1946), and perhaps even if they were made only with disregard for the truth. *Leflore Broadcasting Company* v. *FCC*, ___ F.2d ___ (D.C. Cir. No. 78-1677, June 5, 1980); *Virginia Electric and Power Company* v. *NRC*, 571 F.2d 1289 (4th Cir. 1978).

[5]We include, of course, the false statements charge in this category.

whether, if proved, they should result in denial of the operating license application. For this reason, we are ordering the Board to issue an early and separate decision on this aspect of the operating license proceeding. No prejudice should result from this approach and no additional time or resources should be necessary than if the matter had proceeded to a final, but integrated, decision at a later date by the Licensing Board.

Separate views of Chairman Ahearne and Commissioner Hendrie are attached, as well as the additional views of Commissioners Gilinsky and Bradford.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 22nd day of September, 1980.

CHAIRMAN AHEARNE'S SEPARATE VIEWS:

I concur in the result but do not join in the opinion. The opinion contains a large number of extraneous comments which I cannot fully support. In addition, in light of the recent Appeal Board opinion in *Atlantic Research*,* I find it necessary to state that I do not concur in the additional views of Commissioners Gilinsky and Bradford.

COMMISSIONER HENDRIE'S SEPARATE VIEWS:

Although Commissioner Hendrie concurs in the majority opinion, he does not concur in the additional views of Commissioners Gilinsky and Bradford.

ADDITIONAL VIEWS OF COMMISSIONERS GILINSKY AND BRADFORD

As we stated in our dissenting opinion in *Wisconsin Electric Power Company, supra,* we believe that the results in that case and in *Public Service Company of Indiana, supra,* are wrong. We would have preferred to re-examine those holdings here. However, the denial of a discretionary hearing on the enforcement order is not contrary to the public interest in safety and health in this case. The party requesting that hearing, Citizens, is already a party to the pending operating license proceeding involving the same issues raised in the enforcement action and, as a result of our action today, those issues will be resolved on an expedited basis in the form of a partial initial decision. There are a few other points, however, that we feel should be mentioned in connection with that operating license proceeding and the guidance given the Licensing Board.

First, as the order states, through the use of interrogatories or a Freedom of Information Act request, Citizens can seek to learn the identities of persons with knowledge about the matters covered by the Order to Show Cause. Thereafter, Citizens could attempt to contact these persons informally or take prehearing depositions of them to obtain more information, and could attempt to call them as witnesses in the operating license proceeding.

Second, the Commission has indicated that abdication of responsibility or abdication of knowledge could form an independent and sufficient basis for denying or revoking a license. This view has been accepted by the Courts in their reviews of license-related actions of the Federal Communi-

**Atlantic Research Corporation* (Alexandria, Virginia), ALAB-594, 11 NRC 841, 846 (1980).

cations Commission. Operating under a statute which formed part of the model for the licensing scheme in the Atomic Energy Act,[1] that agency has viewed both abdication of licensee responsibility and abdication of licensee familiarity with or knowledge about its operations as grounds for license revocation or non-renewal. See, e.g., *Cosmopolitan Broadcasting Company* v. *FCC,* 581 F.2d 917 (D.C. Cir. 1978) and *United Broadcasting Company* v. *FCC,* 565 F.2d 699 (D.C. Cir. 1977).

Finally, as in *Public Service Company of Indiana, supra,* 11 NRC at p. 443, we would have requested the Director to brief the Commission prior to lifting the suspension order. If further action is necessary at that time to protect the public health and safety, this would enable the Commission to order that such action be taken, should it choose to do so. However, given the obvious Commission interest in this proceeding, we believe that the Director is likely to inform the Commission of any significant steps that he is about to take.

[1]Like Section 182a of the Atomic Energy Act, Section 309 of the Communications Act, 47 USC Section 309, conditions the granting of licenses on technical, financial, character, citizenship and any other qualification deemed appropriate by the agency. See G. Trowbridge, Licensing and Regulation of Private Atomic Energy Activities, 34 Tex. L. Rev. 842, 848 (1956).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Peter A. Bradford

In the Matter of **Docket No. 50-443**
50-444

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, ***et al.***
(Seabrook Station, Units 1 and 2)

September 25, 1980

The Commission (1) grants an intervenor's petition for review of certain aspects of the Appeal Board's decisions regarding the seismic design of the Seabrook plant, and (2) reverses and remands the proceeding to the Appeal Board for the taking of further evidence on two issues and reconsideration of its opinion.

REGULATIONS: INTERPRETATION (10 CFR Part 100, APPENDIX A)

Appendix A to 10 CFR Part 100 does not explicitly address the conditions under which seismic data from several tectonic provinces can be used to establish a relation for predicting earthquakes in the tectonic province containing the proposed site. Accordingly, in determining the probability of occurrence of earthquakes in one area based on data from another area, the Appendix does not limit the use of a probabilistic approach to those cases in which the probabilistic methodology compared geographic areas which are geographically or seismically similar.

TECHNICAL ISSUES DISCUSSED:

Seismic design criteria; 10 CFR Part 100, Appendix A; safe shutdown earthquake (maximum ground acceleration).

ORDER

The New England Coalition on Nuclear Pollution (NECNP) has petitioned the Commission to review certain aspects of the Atomic Safety and Licensing Appeal Board's decisions regarding the seismic design of the Seabrook nuclear power plant.[1] NECNP contended that the Appeal Board erred in finding Dr. Chinnery's probabilistic analysis of earthquake recurrence times technically deficient and inconsistent with 10 CFR Part 100, Appendix A (Appendix). In addition, NECNP argued that staff's correlation of the maximum vibratory ground acceleration to the Safe Shutdown Earthquake (SSE) is inconsistent with Appendix A because staff calculated this acceleration by taking the average of maximum ground accelerations for several earthquakes having the same intensity as the SSE. NECNP believes that Appendix A requires the use of the maximum vibratory acceleration that might result from the SSE.

Applicant Public Service Company of New Hampshire (PSCNH) and the NRC staff opposed Commission review contending that the seismic issues are matters of fact on which the Licensing and Appeal Boards have come to the same conclusion. 10 CFR 2.786(b)(4)(iii).

After considering the petition for review and responses to it, the Commission decided that an oral presentation on some of the issues in this proceeding would materially aid the Commission's decision on whether to take review. On May 29, 1980, the Commission received an oral presentation on the issues of staff's methodology for establishing the design ground acceleration associated with a Safe Shutdown Earthquake and Dr. Chinnery's methodology for calculating recurrence times of larger than historical earthquakes in a tectonic province. NECNP, PSCNH, and the NRC staff made oral presentations. Subsequently, NECNP moved to include in the record the transcript of the presentation and two technical papers proffered by Dr. Chinnery. PSCNH and staff opposed that motion. That motion is denied, because, for the reasons stated below, we today take review and remand to the Appeal Board to take further evidence on the two issues identified above.[2]

At the outset, we find that the Appeal Board erred in holding that Dr. Chinnery's methodology is inconsistent with Appendix A. In ALAB-422, the Appeal Board held that Appendix A would permit use of a probabilistic approach to determine the probability of occurrence of earthquakes in one

[1]These decisions are ALAB-422, 6 NRC 33 (1972) and the relevant portions of ALAB-561, 10 NRC 410 (1979).

[2]*Cf. Cincinnati Gas and Electric Company,* (William H. Zimmer Nuclear Station), ALAB-79 5 AEC 342 (1972).

area based on data from another area only if the probabilistic methodology compared geographic areas which are geologically or seismically similar.[3] Appendix A does not explicitly address the conditions under which seismic data from several tectonic provinces can be used to establish a relation for predicting earthquakes in the tectonic province containing the proposed site. Thus, we find nothing in Appendix A which compels the Appeal Board's conditions. Moreover, we find these conditions inconsistent with the intent of Appendix A to provide a conservative approach to determining the SSE in light of the absence of a theoretical basis for such a determination. At this yet early stage in earthquake science we are not prepared to dismiss an empirical relation on the basis of failure to satisfy criteria, which although they may appear reasonable, imply a greater understanding of the relation between geology, seismology, and earthquakes than is actually available. Finally, we note that the comparison of seismic data in different tectonic provinces is not essential to Dr. Chinnery's methodology. That comparison serves to support his contention that earthquake recurrence time as a function of intensity is a straight line of certain slope. However, in calculating the recurrence time of a greater than historical earthquake in the tectonic province containing the Seabrook site, only data from that province are used. While the asserted discovery of an empirical relation between earthquake intensity and recurrence time might not be persuasive evidence, we do not believe it should be ruled inadmissible because geology cannot yet provide a theoretical basis to support such a phenomenological relation. Accordingly, in view of the need for conservatism in this area, we find Dr. Chinnery's methodology is not inconsistent with Appendix A.

Regarding the factual validity of Dr. Chinnery's hypothesis, we find that greater exploration on the record is required. Moreover, we note that substantial time has passed since Dr. Chinnery testified before the Licensing Board. While in most cases the mere passage of time would not provide an adequate basis for reopening the record,[4] the subsequent publication of Dr. Chinnery's works and general increase in seismic knowledge suggest to us, that as a matter of prudence, the record should be reopened.[5] Accordingly, the Appeal Board shall reopen the record to take additional evidence on Dr. Chinnery's methodolgy and reconsider its opinion on this matter.

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[3]*Public Service Company of New Hampshire,* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 60 (1977).

[4]*Cf. United States* v. *ICC,* 396 U.S. 491, 521 (1970).

[5]*Vermont Yankee Nuclear Power Corporation,* (Vermont Yankee Nuclear Power Station), ALAB-126, 6 AEC 393 (1973).

The Appeal Board shall also reopen the record to take more evidence on the consistency of Appendix A and staff's methodology for correlating vibratory motion with the SSE. In particular, the parties should provide a discussion of the relation between the mean of the maximum ground accelerations and the maximum effective ground acceleration. The Appeal Board should also reconsider its opinion on this matter.

The dissenting opinion of Chairman Ahearne is attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 25th day of September, 1980.

DISSENTING OPINION OF CHAIRMAN AHEARNE

The Commission should have determined not to exercise its discretion to review two decisions of the Atomic Safety and Licensing Appeal Board (ALAB-422, 6 NRC 33 (1977) and ALAB-561, 10 NRC 410 (1979)) relative to the seismic design of the Seabrook nuclear power plant. The petition of the New England Coalition on Nuclear Pollution (NECNP) which requested review of those decisions should have been denied.

Dr. Chinnery's papers were proffered to the Commission once before as attachments to NECNP's Supplemental Memorandum in Support of Petition for Review. NECNP contends that this material was not available at the time proceedings involving the Seabrook facility were conducted before the Atomic Safety and Licensing Board and the Atomic Safety and Licensing Appeal Board and that consideration of this material would have changed the outcome of the proceedings below. NECNP suggests that the Commission offer all parties the opportunity to file written comments on any extra-record material which other parties may request to be included in the record.

The Commission's standards for reopening a record require that proffered information be timely presented, addressed to a significant safety or environmental issue and demonstrate that the material, when considered in light of responses to it, might alter the result in some material respect if the record were reopened.[1] Dr. Chinnery's papers and oral presentation do not support NECNP's motion to reopen the record. That material generally reiterates the essential elements of Dr. Chinnery's testimony before the Licensing Board. Because that material is cumulative, it is not new evidence which might have altered the result in some material respect. Therefore I would deny the motion filed by NECNP to add to the record in this proceeding two scientific papers by Dr. Chinnery and the verbatim transcript of the oral presentation regarding Seabrook seismic issues made to the Commission on May 29, 1980.

I do agree with Mr. Farrar and the majority opinion here that Dr. Chinnery's proposed methodology itself is *not* inconsistent with Appendix A of 10 CFR Part 100.

I would have taken official notice of the Canadian finding regarding the 1732 earthquake.

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[1] *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 2) ALAB-486, 8 NRC 9, 21-22 (1978).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of **Docket No. 50-263**

NORTHERN STATES POWER COMPANY
(Monticello Nuclear Generating Plant, Unit 1) **September 3, 1980**

Upon *sua sponte* review of the Licensing Board's dismissal (subsequent to the withdrawal of all intervenors) of this proceeding to convert a provisional operating license to a full-term operating license for the Monticello facility, the Appeal Board rules that (1) the record supports the Licensing Board's ultimate conclusion that the facility can continue to operate safely even though the ATWS problem remains an unresolved generic safety issue; and (2) jurisdiction over this case must be retained to receive additional evidence regarding certain other unresolved generic safety issues which may affect the facility's safe operation.

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. *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687 (1979).

APPEAL BOARD: STANDARD OF REVIEW

The standard for an appeal board's *sua sponte* review of a licensing board's substantive determinations of significant safety or environmental issues in an uncontested proceeding is similar to that required in a contested proceeding: An appeal board may reject or modify a licensing

board's findings if, after giving that board's decision the probative force it intrinsically commands, the appeal board is convinced that the record compels a different result.

APPEAL BOARD: SCOPE OF REVIEW

Appeal Board review of a case properly before it is not necessarily confined to those issues on which a licensing board may have made substantive findings.

RULES OF PRACTICE: CONSIDERATION OF ISSUES

In operating license proceedings, adjudicatory boards may examine and decide issues not put into controversy by the parties only when a serious safety, environmental, or common defense and security matter exists. 10 CFR 2.760a and 2.785(b)(2).

RULES OF PRACTICE: CONSIDERATION OF ISSUES

In operating license proceedings, Section 2.785(b)(2) places upon the appeal boards the burden of sufficiently scrutinizing the record to satisfy themselves that no serious safety or environmental questions have been overlooked, regardless of what matters the parties may or may not have placed in controversy. To enable the appeal boards to fulfill that responsibility, the record should contain adequate information on which an informed judgment may be made.

OPERATING LICENSE PROCEDURES: SAFETY EVALUATION REPORT

Explanations of why an operating license should issue in spite of unresolved generic safety issues should appear in the Safety Evaluation Report.

TECHNICAL ISSUE DISCUSSED:

Anticipated transients without scram.

MEMORANDUM AND ORDER

On October 25, 1979, subsequent to the withdrawal of all intervenors, the Licensing Board dismissed this proceeding involving Northern States Power

Company's application to convert its provisional operating license for the Monticello Nuclear Generating Plant to a full-term operating license.[1] Thus, after almost nine years of authorized full-power operation of the Monticello facility under a provisional license, the Licensing Board's final order paves the way for the issuance of a full-term operating license.[2]

The procedural history of the Monticello operating license proceeding was set forth in detail in *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687, 689-690 (1979) (although in a somewhat different setting). Accordingly, we need not repeat it here. Suffice it to note that all of the intervenors either withdrew from the *Monticello* proceeding or withdrew their contentions. Once that occurred, the proceeding was in the posture of an uncontested case and, under Commission regulations, the Licensing Board was free to dismiss it. After reviewing the record, however, the Board declined to do so. It was concerned about the continued safe operation of the Monticello facility pending resolution of the problem of anticipated transients without scram (ATWS). The ATWS problem — one of a number of so-called unresolved generic safety issues involving nuclear power facilities — prompted the Licensing Board to pose several questions to the NRC staff and applicant. After considering the evidentiary responses to its questions, the Board made several substantive determinations on the ATWS issue and terminated the proceeding. We then issued an order announcing that we would review the case on our own initiative.

I.

The fact that the Licensing Board made substantive findings on the ATWS safety issue undergirds our own review. Even though the proceeding was uncontested at the time it was dismissed, those ATWS determinations require that we review the Licensing Board's decision. As we stated in *WPPSS,* ALAB-571, *supra,* 10 NRC at p. 692, in annunciating the rationale for *sua sponte* review in the *Monticello* proceeding: "Appeal board review

[1]The Monticello facility, located in Wright County, Minnesota, is a boiling water reactor with a rated power output of 545 MWe.

[2]In 1971 the *Monticello* facility received authorization for a provisional license for full power operation (see 4 AEC 496) which, under then-applicable Commission regulations, was effective for 18 months. Thereafter, in 1972, the present proceeding was begun to convert the provisional license to a full-term operating license. See 4 AEC 830 (1972); 5 AEC 25 (1972). That proceeding dragged on until October 25, 1979 when the Licensing Board issued its order dismissing the proceeding, thus authorizing the issuance of a full-term operating license. The normally short-lived provisional license remained in effect throughout this entire period, however, because the Commission's regulations provide that a timely license application for a previously authorized activity "will not be deemed to have expired until the application has been finally determined." 10 CFR 2.109.

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." And, in such a case, the standard for review of a licensing board's substantive determination is similar to that required in a contested proceeding. We may "reject or modify findings of the Licensing Board if, after giving its decision the probative force it intrinsically commands, we are convinced that the record compels a different result." *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). See also *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear 1), ALAB-303, 2 NRC 858, 867 (1975). In applying that standard to the case before us, however, we are mindful that we do not have the benefit of briefs from interested parties, as would be the situation in a contested proceeding.

We have reviewed the Licensing Board's findings on the ATWS issue and have found no error requiring corrective action. As we explain in Part II, we are satisfied that the record supports the Licensing Board's ultimate conclusion that the Monticello facility can continue to operate safely even though the ATWS question remains an unresolved generic safety issue. As will be seen in Part III, however, we shall retain jurisdiction over this case to receive additional evidence regarding certain other unresolved generic safety issues which may significantly affect safe operation of the Monticello facility.

II.

The ATWS issue is complex, its history long and the controversy surrounding it intense. In order to put into context the Licensing Board's concern about whether the Monticello facility could continue to operate safely while the ATWS issue remained an unresolved generic safety question, a brief description of the problem is helpful.

1. As previously mentioned, ATWS is an acronym for "anticipated transients without scram." Anticipated transients are expected deviations from normal operating conditions which can be foreseen as probable occurrences during the service life of a nuclear plant. Such transients, however, are to be distinguished from accidents, which (although always possible) are unexpected and have a much lower likelihood of occurrence. The second two letters of the ATWS acronym involve the reactor protection shutdown system. The planned response to certain occurrences is an automatic shutdown or "scram" of the reactor by rapid insertion of the control rods into the reactor core, which stops the nuclear reaction. Should one of those expected events requiring reactor shutdown occur but

no shutdown take place, the result would be an "anticipated transient without scram" or an ATWS event.

The history of ATWS as an unresolved generic safety issue dates back to 1969. At that time, an Advisory Committee on Reactor Safeguards (ACRS) consultant expressed concern that common mode failures in scram systems (*i.e.,* deficiencies in the design, manufacture, installation or maintenance of a component that affect all such components equally) could so reduce the reliability of protection systems that they might not function properly when called upon. For certain types of transients, scram failure could result in serious safety problems. Thus, the ATWS issue generally involves two questions: first, whether the probability of common mode failures in reactor scram systems is sufficiently great to warrant consideration; and second, if so, what type of protection is required for boiling water and pressurized water reactors to mitigate the consequences of scram failure.

The difficulty of assessing the probability of common mode failures lies at the root of the ATWS issue. The techniques for analyzing a system for common mode failures have not been as well developed — or at least not as universally accepted — as those for random failures.[3] As a result, the NRC staff and the nuclear industry have taken markedly different, and indeed almost opposite, positions on the reliability of existing scram systems. Similarly, the staff and the industry disagree on both the need for additional protection against the consequences of scram failures and the type of protection required.

Over the years, the perceived potential for serious harm resulting from ATWS events has led to a number of studies and documents by the various vendors, utility groups, and the AEC and NRC regulatory staffs to assess

[3]Scram failures occurring on a random basis caused by worn out equipment or malfunctions in shutdown protection systems have not been perceived as causing any appreciable deterioration of scram system reliability. This is because of the redundancy of shutdown protection systems. In recent years, techniques for analyzing common mode failures have received considerable attention, with consequent improvement.

the probabilities and consequences of such occurrences.[4] These same materials set forth in detail the positions of the staff and the nuclear industry on the ATWS issue.

It would serve no purpose to attempt to detail the evolution of the staff's position set out in the documents produced to date. Indeed, the staff has yet to announce its final position and recommendations to the Commission on the ATWS issue.[5] At the risk of oversimplification, the staff's position appears to be that present reactor operating experience is not adequate to determine conclusively on a statistical basis whether reactor scram systems are reliable enough to make the probability of unacceptable consequences from ATWS events sufficiently small. Based on its best engineering judgment (using risk assessment as a tool), the staff has concluded that corrective measures involving both procedural and hardware modifications for all boiling water and certain pressurized water reactors are necessary to reduce the risk of severe consequences from possible ATWS events in the future. Stated otherwise, the staff sees an inadequate statistical base for assessing the reliability of present scram systems and, in light of the potential severity of ATWS events and the fact that more reactors are scheduled for operation in the future, believes it prudent to improve safety margins even further to protect the public. The staff has not determined that there is a present risk to public safety from an ATWS event; rather, its position is that no unacceptable risk currently exists.[6]

The nuclear industry, on the other hand, has consistently and unanimously disagreed over the years with the staff's evaluation of ATWS. Simply stated, the industry's position is that the probability of ATWS

[4]See, *e.g.*, U.S. Atomic Energy Commission, "Technical Report on Anticipated Transients Without Scram for Water-Cooled Power Reactors," WASH-1270 (September 1973); Electric Power Research Institute, "ATWS: A Reappraisal, Part I: An Examination and Analysis of WASH-1270," EPRI NP-251 (August 1976); Electric Power Research Institute, "ATWS: A Reappraisal, Part II: Evaluation of Societal Risks Due to Reactor Protection System Failure, Vols. I and II: BWR Risk Analysis," EPRI NP-265 (August 1976); Electric Power Research Institute, "ATWS: A Reappraisal, Part II: Evaluation of Societal Risks Due to Reactor Protection System Failure, Vol. III: PWR Risk Analysis," EPRI NP-265 (August 1976); Electric Power Research Institute, "ATWS: A Reappraisal, Part II, Vol. IV: The Probability of Exceeding 10 CFR 100 Guidelines From ATWS Events in Light Water Reactors," EPRI NP-265 (January 1977); U.S. Nuclear Regulatory Commission, "Anticipated Transients Without Scram for Light Water Reactors," Vols. I and II, NUREG-0460 (April 1978); Electric Power Research Institute, "ATWS: A Reappraisal, Part III: Frequency of Anticipated Transients," EPRI NP-801 (July 1978); U.S. Nuclear Regulatory Commission, "Anticipated Transients Without Scram for Light Water Reactors," Vol. III (December 1978); U.S. Nuclear Regulatory Commission, "Anticipated Transients Without Scram for Light Water Reactors, Vol. IV: Resolution of Unresolved Safety Issue TAP A-9," NUREG-0460 (March 1980).

[5]At the Commission's open meeting on July 15, 1980, the staff announced its intent to submit to the Commission in the near future a staff paper containing its final recommendations.

[6]See NUREG-0460, *supra* fn. 4, Vol. 3 at pp. 1-8, 42-44, and Vol. 4 at pp. 3-6, 63-65.

events in present reactor designs is sufficiently small that there is no need for plant modifications to mitigate the consequences of such events. The industry also insists that, if plant modifications are made in spite of this fact, many of the staff's recommendations for hardware changes will not be cost-effective.[7]

At this writing, the ATWS issue remains an unresolved generic safety issue — although its resolution may be soon achieved.[8] The snail's pace at which work on the ATWS issue has proceeded over the past eleven years, however, must remain a matter of serious concern pending final Commission action on this question. In any event, it is readily apparent why, in the circumstances presented, the Licensing Board raised the ATWS issue on its own motion as a "serious safety matter" pursuant to 10 CFR 2.760a and required the applicant and the staff to respond to its questions on that issue. In light of the controversy surrounding ATWS and the divergent views of the staff and the nuclear industry on this subject, the Licensing Board was "not merely authorized, but obligated, to pursue the course which its did"[9] in considering whether the Monticello facility could continue to operate safely while the staff was studying the problem.

2. In response to the Licensing Board's questions concerning the status of the generic ATWS issue and whether the Monticello facility could continue to operate safely pending its resolution, the staff and the applicant each submitted affidavits. The staff's affidavit (dated January 18, 1979) was executed by the Task Manager of the NRC ATWS Task Action Plan. He first described the various published staff reports on the ATWS issue. He next summarized (as more fully developed in those reports) the staff's position on ATWS, its then current recommendations for mitigating the consequences of ATWS events, and its projected schedule for ultimately resolving the issue. Addressing the staff's views on continued operation of the Monticello facility, he then stated (at pp. 12-13):

> We recognize that the Monticello design incorporates an acceptable recirculation pump trip feature which reduces the risk from ATWS events. As a prudent course, in order to further reduce the risk from ATWS events during the interim period while this matter is under review by the Commission, the staff believes that the following steps should be taken.
>
> 1. Emergency procedures [should] be developed to train operators to recognize an ATWS event, including consideration of scram indicators, rod position indicators, flux monitors, vessel level and pressure indicators, relief valve and isolation valve indicators, and containment temperature, pressure, and radiation indicators.

[7]See NUREG-0460, *supra* fn. 4, Vol. 1 at pp. 5-6 and Vol. 4 at pp. 5-6.
[8]See fn. 5, *supra*.
[9]*WPPSS*, ALAB-571, *supra*, 10 NRC at 691 (footnote omitted).

2. Operators [should] be trained to take actions in the event of an ATWS including but not limited to consideration of manually scramming the reactor by using the manual scram buttons, changing rod scram switches to the scram position, stripping the feeder breakers on the reactor protection system power distribution buses, opening the scram discharge volume drain valve, prompt actuation of the standby liquid control system, and prompt placement of the RHR in the pool cooling mode to reduce the severity of the containment conditions.

Early operator action as described above, in conjunction with a recirculation pump trip, significantly improves the capability of the facility to withstand a range of ATWS events, namely those which occur (1) as a result of common mode failure in the electrical portion of the scram system and some portions of the drive system, and (2) at low power levels where the existing standby liquid control system capability is sufficient to limit the pool temperature rise to acceptable levels.

Since the Monticello Nuclear Generating Plant has an automatic ATWS-related recirculation pump trip and since the above actions would further reduce the likelihood of severe ATWS events, we believe that continued operation of this facility presents no undue risk to the health and safety of the public while this matter is under review by the Commission.

The applicant submitted the affidavit of its General Manager of Power Production (dated January 25, 1979). He stated that the Monticello facility had used a recirculation pump trip system of a design approved by the staff since late 1978 and that the emergency procedures recommended by the staff had already been instituted (with one exception to be accomplished by April 1979). With respect to the staff's recommendations concerning operator training, he explained that such training had been undertaken and would be completed by April 1979.

Based upon these affidavits, the Licensing Board found, *inter alia,* that the Monticello design had incorporated a recirculation pump trip system and that the applicant had agreed to implement the staff's recommendations regarding emergency procedures and operator training — all with the consequence that the risks from ATWS events would be further reduced. The Board noted that it would rely on the staff to insure that the staff's recommendations had been implemented. It then concluded (at p. 5) 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."

Our review of the record, including many of the underlying staff and industry reports on the ATWS issue referenced therein, does not compel us to a different result from that reached by the Licensing Board. The record demonstrates that, by allowing ample time for insertion of borated water through the standby liquid control system, the recirculating pump trip system already installed at the Monticello boiling water reactor eliminates

the concern that an ATWS event might lead to failure of the reactor vessel caused by overpressurization. This being so, we find no basis on this record to disagree with the Board's conclusion that the Monticello facility may continue to operate safely pending resolution of the generic ATWS issue. We thus concur in the disposition below of the ATWS matter.

III.

Our scrutiny of this proceeding does not end with review of the Licensing Board's substantive determinations on the ATWS issue. To be sure, ATWS is the vehicle by which the proceeding was brought to this Board for *sua sponte* review. But once a case is properly before us, our review need not be confined to those issues on which a licensing board may have made substantive findings. Rather, the Commission's regulations empower us, on our own motion, to consider matters not raised by the parties or the licensing board. In an operating license proceeding, we may do so, however, only when "a serious safety, environmental, or common defense and security matter exists." 10 CFR 2.785(b)(2). See also 10 CFR 2.760a. This limitation restricts our review to a much narrower path than we would follow in a proceeding where matters are contested by the parties; nevertheless, Section 2.785(b)(2) necessarily places upon us the burden of sufficiently scrutinizing the record to satisfy ourselves that no serious safety or environmental matters have been overlooked.[10]

To enable us to fulfill that responsibility, the record must contain adequate information on which an informed judgment may be made, because the question of whether an environmental or "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." *WPPSS,* ALAB-571, *supra,* 10 NRC p. 691, fn. 13. But here, the record — primarily because of its age[11] — is insufficient to permit us to determine whether the Monticello facility can continue to operate safely pending resolution of other unresolved generic issues identified by the staff over the years. Accordingly, we shall retain jurisdiction over the case to enable the staff to supplement the record. With an adequate record before

[10]Prior to their recent amendment, Sections 2.760a and 2.785(b)(2) provided that, in an operating license proceeding, adjudicatory boards could examine and decide serious safety, environmental, or common defense and security matters not put into controversy by the parties "only in extraordinary circumstances," and that such authority was to be used "sparingly." 10 CFR 2.760a and 2.785(b)(2) (1979 rev.). The Commission deleted this restrictive language to ensure that adjudicatory boards would not be deterred from "examining issues that, although not presented by 'extraordinary circumstances,' could still pose important health and safety questions." 44 FR 67088 (November 23, 1979).

[11]See fn. 2, *supra.*

us, we shall then determine whether the Monticello nuclear plant can continue to operate safely pending resolution of any unresolved generic safety issues previously identified by the staff which affect this particular facility.

Our decisions teach that the record must contain sufficient information concerning each generic unresolved safety issue affecting operation of the facility under consideration to enable adjudicatory boards to fulfill their respective responsibilities under the Commission's regulations. In *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977), we pointed out, albeit in the context of a construction permit proceeding, that a licensing board must make a finding that there is a reasonable assurance that the facility can be operated safely irrespective of what matters may or may not have been placed in controversy. We held that, in order to make such a finding in the absence of a contest on a particular safety matter, the licensing board is not authorized to duplicate the staff's review; rather, the board must determine whether the staff's review of that issue was adequate. *Id.* at 774. We then stated:

> Of necessity, this determination will entail an inquiry into whether the staff review satisfactorily has come to grips with any unresolved generic safety problems which might have an impact upon operation of the nuclear facility under consideration.
>
> The SER is, of course, the principal document before the licensing board which reflects the content and outcome of the staff's review. The board should therefore be able to look to that document to ascertain the extent to which generic unresolved safety problems which have been previously identified in a TSAR item, a Task Action Plan, an ACRS report or elsewhere have been factored into the staff's analysis for the particular reactor — and with what result. To this end, in our view, each SER should contain a summary description of those generic problems under continuing study which have both relevance to facilities of the type under review and potentially significant public safety implications.
>
> • • • •
>
> In short, the board (and the public as well) should be in a position to ascertain from the SER itself — without the need to resort to extrinsic documents — the staff's perception of the nature and extent of the relationship between each significant unresolved generic safety question and the eventual operation of the reactor under scrutiny.

Id. at 774-75.

A year later, in a case closely parallel to the one now before us, this Board again dealt with unresolved generic safety issues, this time in the context of a *sua sponte* review of a licensing board's grant of authority for

an operating license. *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978). After canvassing the entire record to satisfy ourselves that the North Anna facility could operate safely pending resolution of all outstanding unresolved generic safety issues, we required that the record be supplemented on the issue of turbine missiles. In reaching that result, however, we commented on the difficulty of ferreting out satisfactory answers concerning many such generic issues and strongly suggested that in the future, the staff's Safety Evaluation Report be supplemented to include an adequate explanation of each generic safety issue affecting the facility under review and why that particular facility could nevertheless safely operate pending resolution of those issues. *Id.* at 249 and fn. 9.

In *North Anna,* we also articulated the minimum level of record evidence which, in light of the Commission's regulations, would permit a board to determine that no serious safety or environmental matters exist:

> In view of the limitations imposed by regulation, and the fact that our review was necessarily unaided by any of the parties, we have not probed deeply into the substance of the reasons put forth by the staff for allowing operation to go forward. Rather, we have only looked to see whether the generic safety issues have been taken into account in a manner that is at least plausible and that, if proven to be of substance, would be adequate to justify operation. Scrutiny of the substance of particular explanations will have to await a contested proceeding.

Id. at 248, fn. 7.

That same principle must guide our review of the present proceeding. Unlike that in *North Anna,* however, the record before us is extremely stale because of the extended time interval between the grant of the provisional license and the Licensing Board's final action, which had the effect of authorizing the grant of a full-term operating license. Indeed, the staff's Safety Evaluation Report is dated February 5, 1973 and, with respect to providing useful information concerning many unresolved generic safety issues, it is manifestly insufficient. This being so, we are unable to determine whether any other unresolved safety issues previously identified by the staff stand as impediments to the continued safe operation of the Monticello facility.

To remedy this deficiency, the staff should supplement the record with an appropriate identification of those unresolved generic safety issues[12] it

[12]We are fully cognizant of the history of the unresolved-safety-issue question and the difficulties experienced over the years in defining what matters should or should not be so considered. Likewise, we are conversant with the various staff efforts to categorize unresolved safety issues and to establish programs to resolve them. See U.S. Nuclear Regulatory Commission, "NRC Program for the Resolution of Generic Issues Related to Nuclear Power

FOOTNOTE CONTINUED ON NEXT PAGE

has brought to light over the years which might affect safe operation of the Monticello facility. For this, purpose, the staff is to focus its attention on those Category A Tasks identified in NUREG-0510 as unresolved safety issues which could affect the Monticello facility. In addition, however, the staff should include in its submission any issues from Category B Tasks listed in NUREG-0510 which may have an impact on the Monticello facility and which, if left unresolved, could present potentially serious safety or environmental concerns.

Such identification should be accompanied by a brief description of the dimensions of each generic issue. As part of its submission, the staff should provide a succinct explanation of why the Monticello plant can continue to operate safely pending resolution of each generic safety issue.[13] We once again suggest, as we did in *River Bend* and *North Anna,* that the staff consider filing this additional material as an amendment or supplement to its SER. Placing such information in the SER will permit "the board (and the public as well)...to ascertain from the SER itself — without the need to resort to extrinsic documents — the staff's perception of the nature and extent of the relationship between each significant unresolved generic safety question and...operation of the reactor under scrutiny." *River Bend,* ALAB-444, *supra,* 6 NRC at 775. It also will facilitate in any other parallel proceedings an evaluation of those questions at the licensing board level, where it is more appropriately undertaken in the first instance.[14]

FOOTNOTE CONTINUED FROM PREVIOUS PAGE

Plants," NUREG-0410 (January 1978); U.S. Nuclear Regulatory Commission, "Generic Task Problem Descriptions," NUREG-0471 (June 1978); U.S. Nuclear Regulatory Commission, "Identification of Unresolved Safety Issues Relating to Nuclear Power Plants," NUREG-0510 (January 1979); U.S. Nuclear Regulatory Commission, "Task Action Plans for Unresolved Safety Issues Related to Nuclear Power Plants," NUREG-0649 (February 1980).

[13]The information we seek should not place an unreasonable burden on the staff. Detailed statements concerning each unresolved safety issue affecting the Monticello facility are not necessary. Rather, a short one or two paragraph description should be adequate. Similarly, the staff's explanation of why the facility can continue to operate safely pending resolution of each generic issue also need not be excessively detailed.

[14]In such proceedings, licensing boards should make sure that the record before them reflects the staff's *current* views on any unresolved generic safety issues that might be of significance for the particular facility involved, whether or not those issues have been placed in controversy by the parties. Those issues need not be pursued further unless the Board determines that the information submitted raises serious safety, environmental, or common defense and security matters.

The staff shall file the requested supplemental material *by October 15, 1980.*

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
Thomas S. Moore

In the Matter of **Docket No. 50-219**

JERSEY CENTRAL POWER AND LIGHT COMPANY
(Oyster Creek Nuclear Generating Station) **September 5, 1980**

Upon *sua sponte* review of the Licensing Board's dismissal of this proceeding to convert the facility's provisional license to a full-term operating license, the Appeal Board remands the proceeding to the Licensing Board for consideration of any unresolved generic safety issues that might significantly affect the facility's operation.

MEMORANDUM AND ORDER

1. This proceeding involves the conversion to a full-term operating license of the provisional license which was issued for the Oyster Creek nuclear facility in 1969.[1] On May 31, 1979, the Licensing Board entered an order in which it (1) approved certain environmental technical specifications which the NRC staff proposed (with the applicant's acquiescence) to attach to both the provisional and full-term licenses; (2) determined that all issues in controversy had been resolved by the parties themselves; but (3) called upon the staff to supply its evaluation of the significance of a then-recent coolant flow reduction incident at the Oyster Creek facility.

On June 8, 1979, the staff complied with the Licensing Board's request by furnishing it with copies of (1) the May 30, 1979 letter from the Director of the Division of Operating Reactors, Office of Nuclear Reactor

[1]The Oyster Creek facility, located in Ocean County, New Jersey, is a boiling water reactor with a rated power output of 650 MWe.

Regulation (NRR), to the applicant; and (2) the NRR Safety Evaluation Report dealing with the incident (which document had accompanied the letter). On September 25, 1979, the staff filed a motion seeking, "[i]n the event that the [Licensing] Board has no further questions to be addressed in this matter," an order terminating the proceeding.

By order of February 22, 1980, the Licensing Board granted the motion and dismissed the proceeding. In so doing, it endorsed (at least implicitly) the staff's analysis of the coolant flow reduction incident. That analysis had produced the conclusions that the Oyster Creek core had not been damaged and that, with certain added technical specifications designed to obviate a repetition of the incident, the facility could safely resume operation.

In an unpublished March 20, 1980 memorandum, the Appeal Panel Chairman announced that the dismissal order would be reviewed *sua sponte* by an appeal board under the standard laid down in *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687 (1979). This Board was thereafter established for that purpose.

2. We have examined both the environmental technical specifications (NUREG-0488) approved in the Licensing Board's May 1979 order and the Safety Evaluation Report pertaining to the coolant flow reduction incident. That examination has given rise to no concern requiring our further inquiry. The environmental technical specifications appear to come to grips satisfactorily with the special environmental problems attendant upon Oyster Creek operation — including the shipworm (marine borer) infestation matter of which we took note several years ago. See *Jersey Central Power and Light Company* (Forked River Nuclear Generating Station, Unit 1), ALAB-139, 6 AEC 535, 537 fn. 7 (1973). For its part, the analysis contained in the Safety Evaluation Report seems to be sufficiently complete and to provide an adequate foundation for the staff's conclusions derived therefrom.

3. Nonetheless, we cannot now affirm the dismissal of the proceeding. To the contrary, for the reasons set forth in Part III of our very recent decision in the parallel *Monticello* proceeding,[2] before the final curtain can be brought down the staff must furnish certain additional information respecting those unresolved generic safety issues as might be applicable to Oyster Creek operation.

In *Monticello,* that information is being supplied directly to us. We there indicated, however, that in proceedings such as this the licensing boards henceforth would be called upon to undertake *ab initio* the task of appraising "the nature and extent of the relatonship between each

[2]*Northern States Power Company* (Monticello Nuclear Generating Plant, Unit 1), ALAB-611, 12 NRC 301, 309 (September 3, 1980).

significant unresolved generic safety question and...operation of the reactor under scrutiny."[3] Accordingly, in this instance the staff is to submit the required information to the Licensing Board by whatever date that Board may prescribe. Following its evaluation of the submittal, the Board may reinstate the dismissal of the proceeding or take such other action (after giving the parties an opportunity to be heard) as should appear appropriate to it in the circumstances.

Remanded for further proceedings in accordance with this opinion and Part III of *Monticello,* ALAB-611, *supra.*

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

[3] *Id.* at p. 312. As explained (*id.* at p. 310, that appraisal is mandated by *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977) and *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. John H. Buck
Thomas S. Moore

In the Matter of **Docket No. 50-387**
50-388

PENNSYLVANIA POWER AND LIGHT COMPANY AND ALLEGHENY ELECTRIC COOPERATIVE, INC.
(Susquehanna Steam Electric Station, Units 1 and 2)

September 23, 1980

Acting on the Commission's referral of an intervenor's request for relief related to the conduct of discovery in this proceeding before the Licensing Board, the Appeal Board accepts review of the matters raised but denies the relief sought on the ground that the record does not substantiate the intervenor's complaints.

RULES OF PRACTICE: DISCRETIONARY INTERLOCUTORY REVIEW

The Commission's Rules of Practice give an appeal board discretionary authority to review a licensing board's "interlocutory" rulings, *i.e.*, those disposing of less than an entire cause. 10 CFR 2.718(i), 2.730(f) and 2.785(b)(1). That authority, however, is reserved for exceptional and important issues.

RULES OF PRACTICE: APPELLATE REVIEW

Questions about the proper scope of discovery are matters particularly within a trial board's competence and appellate review of such rulings is usually best conducted at the end of the case.

RULES OF PRACTICE: DISCOVERY

In modern administrative and legal practice, pretrial discovery is liberally granted to enable the parties to ascertain the facts in complex litigation, refine the issues, and prepare adequately for a more expeditious hearing or trial. *Pacific Gas and Electric Company* (Stanislaus Project), LBP-78-20, 7 NRC 1038, 1040 (1978).

RULES OF PRACTICE: DISCOVERY

Discovery requests must be relevant to the subject matter of the proceeding; that is, they may relate only to those matters in controversy which have been identified by the licensing board following a special prehearing conference. 10 CFR 2.740(b)(1).

RULES OF PRACTICE: DISCOVERY

The NRC rules governing discovery from parties other than the staff attempt to minimize involvement by the trial board. Once the time for discovery begins, the trial board's leave is not needed to proceed; it is only in the event of an objection to a discovery request or a failure of proper compliance that a "motion to compel discovery" is necessary. 10 CFR 2.740(f).

RULES OF PRACTICE: DISCOVERY (INTERROGATORIES)

It is not proper for a party to ignore a discovery request. Interrogatories must be either answered or objected to in the time allowed. 10 CFR 2.740b(b).

RULES OF PRACTICE: DISCOVERY

Objections to discovery may be accompanied by a motion for a "protective order" to modify or eliminate the obligation to respond, but the movant must establish "good cause" for issuing such an order. 10 CFR 2.740(c). General objections do not provide that cause.

RULES OF PRACTICE: DISCOVERY (AGAINST NRC STAFF)

With limited exceptions, Commission regulations make staff documents that are relevant to licensing proceedings routinely available in the NRC Public Docket Room, thereby reducing any need for formal discovery. 10 CFR 2.790(a). Accordingly, the Rules of Practice (1) limit documentary discovery against the staff to items not reasonably obtainable from other sources, 10 CFR 2.744; (2) require a showing of "exceptional circumstances" to depose staff personnel, 10 CFR 2.720(h) and 2.740a(j); (3) allow interrogatories addressed to the staff only where the information is necessary to a proper decision in the case and not obtainable elsewhere, 10 CFR 2.720(h)(2)(ii); and (4) require the licensing board's advance permission to depose staff members or to require the staff to answer written interrogatories, *ibid.*

RULES OR PRACTICE: DISCOVERY

Parties are entitled to discover all matters not privileged that tend to support or negate the allegations in the pleadings, or which are reasonably calculated to reveal such matters. It is therefore against the number and nature of the issues actually raised that the reasonableness of a party's discovery requests must be balanced.

RULES OF PRACTICE: DISCOVERY

In responding to discovery requests, a party is not required to engage in extensive independent research. It need only reveal information in its possession or control, although it may be required to perform some investigation to determine what information it actually possesses. Assuming truthfulness of the statement, lack of knowledge is always an adequate response.

RULES OF PRACTICE: DISCOVERY

A demand for documents is satisfied before the Commission by producing them for inspection and copying. 10 CFR 2.741, 2.744 and 2.790.

RULES OF PRACTICE: BURDEN OF GOING FORWARD

The license applicant carries the ultimate burden of proof in Commission licensing proceedings. But an intervenor also bears evidentiary responsibilities and must come forward with evidence sufficient to require reasonable

minds to inquire further to insure that its contentions are explored at the hearing.

APPEARANCES

Dr. Judith H. Johnsrud and **Dr. Chauncey Kepford,** State College Pennsylvania, for Environmental Coalition on Nuclear Power, **intervenor.**

Messrs. Jay E. Silberg and **Matias F. Travieso-Diaz,** Washington, D.C., for Pennsylvania Power and Light Company and Allegheny Electric Cooperative, Inc., **applicants.**

Mr. James M. Cutchin, IV, for the Nuclear Regulatory Commission staff.

DECISION

1. **Background.** This matter is before us on referral by the Commission. The Licensing Board is considering applications for licenses to operate the nuclear-powered Susquehanna electric generating plants. The Environmental Coalition on Nuclear Power (the "Coalition") has intervened in the proceeding and opposes granting the licenses to the Pennsylvania Power and Light Company and the Allegheny Electric Cooperative, the applicants. The Coalition is represented by two of its officers, Drs. Chauncey Kepford and Judith H. Johnsrud. One or both of those individuals are also participants in other Commission evidentiary proceedings now in progress.[1]

On March 15, 1980 the Coalition petitioned the Commission directly. It alleged that the Licensing Board had refused to stop the applicants from using the discovery process as a means of harrassment. The petition asked in essence that the Commission (a) halt the proceeding pending review of the discovery abuses; (b) clarify aspects of the discovery rules and decide issues under them; (c) replace the present Licensing Board with one including a Commissioner; and (d) stay the proceeding until the staff completes its Final Safety Evaluation Report and the Coalition has had sufficient time to review it. On May 16th the Commission referred the petition to us for appropriate action. CLI-80-17, 11 NRC 678.

[1]See, *e.g., Metropolitan Edison Company* (Three Mile Island, Unit No. 1), LBP-80-17, 11 NRC 893 (1980) (restart proceeding); *Three Mile Island, Unit No. 2,* ALAB-525, 9 NRC 111 (1979) (aircraft crash probability); *Philadelphia Electric Company* (Peach Bottom Station, Units 2 and 3), *et al.,* ALAB-562, 10 NRC 437 (1979) (radon proceeding).

The Licensing Board had continued to rule on discovery matters in the interim and some of its rulings modified the Coalition's discovery obligations. We accordingly inquired on May 23rd whether the Coalition's complaints had now been alleviated. ALAB-593, 11 NRC 761. The applicants and the staff replied affirmatively but the petitioner disagreed. It insists that (except for one matter rendered moot by the passage of time) it still needs the relief it requested, including "six months of additional time for unimpeded preparation." We therefore turn to the petition.

2. **Grounds for review.** The Rules of Practice give us discretionary authority to review a licensing board's "interlocutory" rulings, *i.e.,* those disposing of less than an entire cause. 10 CFR 2.718(i), 2.730(f) and 2.785(b)(1). That authority, however, is reserved for exceptional and important issues. Questions about the proper scope of discovery are normally not of that genre. These matters are particularly within a trial board's competence and appellate review of such rulings is usually best conducted at the end of the case.[2]

The Coalition's petition, however, alleges matters more serious than run-of-the-mill discovery disputes. Petitioner claims that the applicants and staff have abused the discovery procedures in order to block its effective participation if not to drive it from the litigation. That charge is coupled with an allegation that the Licensing Board has abetted the scheme. The Coalition's allegations, if substantiated, would call into question the integrity of Commission licensing proceedings. These circumstances give us cause to look more fully into the situation. We do so in the exercise of our certification jurisdiction.[3]

II.

1. **Introduction.** Even a brief review of the papers makes it apparent that an understanding—or misunderstanding—of NRC discovery practice lies at the heart of this controversy. Discovery is the descriptive term for procedures available to help litigants learn the nature of an adversary's case in advance of trial. Without recounting the development of the process chapter and verse, it is sufficient for this case to note that an important reason for allowing discovery is to eliminate, insofar as possible, the

[2]*See, The Toledo Edison Company* (Davis-Besse and Perry), ALAB-560, 10 NRC 265, 286-87, fn. 59 (1979); *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-438, 6 NRC 638 (1977); *Long Island Lighting Company* (Jamesport Station, Units 1 and 2), ALAB-318, 3 NRC 186 (1976); *The Toledo Edison Company* (Davis-Besse Station, Unit 1), ALAB-314, 3 NRC 98 (1976).

[3]See, *Public Service Electric and Gas Company* (Salem Station, Unit 1), ALAB-588, 11 NRC 533, 536 (1980); *Puget Sound Power and Light Company* (Skagit Project , Units 1 and 2), ALAB-572, 10 NRC 693, 695 fn. 5 (1979), and cases there cited.

element of surprise in modern litigation. The underlying concept is to shorten the actual trial, with its attendant expense and inconvenience for all concerned, while increasing the parties' ability to develop a complete record for decisional purposes. The Supreme Court explained in *Hickman* v. *Taylor* that

> [t]he various instruments of discovery now serve (1) as a device, along with the pretrial hearing under Rule 16, to narrow and clarify the basic issues between the parties, and (2) as a device for ascertaining the facts, or information as to the existence or whereabouts of facts, relative to those issues. Thus civil trials in the federal courts no longer need be carried on in the dark. The way is now clear, consistent with recognized privileges, for the parties to obtain the fullest possible knowledge of the issues and facts before trial.[4]

Stated another way, "[i]n modern administrative and legal practice, pretrial discovery is liberally granted to enable the parties to ascertain the facts in complex litigation, refine the issues, and prepare adequately for a more expeditious hearing or trial."[5]

The various instruments of discovery include requests for admissions of fact; demands that documents be produced for inspection and copying; depositions on oral examination; and "interrogatories." 10 CFR 2.740(a). The last are simply written questions calling for sworn written answers. 10 CFR 2.740b. All discovery requests must be relevant to the subject matter of the proceeding; that is, they may "relate only to those matters in controversy which have been identified by the [Licensing Board following a special] prehearing conference." 10 CFR 2.740(b)(1).

The NRC rules governing discovery from parties *other than the staff* are modelled on the Federal Rules of Civil Procedure.[6] Like their judicial counterparts, they attempt to minimize involvement by the trial board; once the time for discovery begins the board's leave is not needed to proceed. It is only in the event of an objection to a discovery request or a failure of proper compliance that a "motion to compel discovery" is necessary. 10 CFR 2.740(f).

It is not proper for a party to ignore a discovery request. Interrogatories, for example, must either be answered or objected to in the time allowed. 10 CFR 2.740b(b). Objections may be accompanied by a motion for a

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[4]329 U.S. 495, 501 (1947); *accord, United States* v. *Procter and Gamble Company,* 356 U.S. 677 (1958); *Miner* v. *Atlas,* 363 U.S. 641 (1960).

[5]*Pacific Gas and Electric Company* (Stanislaus Project), LBP- 78-20, 7 NRC 1038, 1040 (1978).

[6]10 CFR Part 2, App. A., IV(c) (1980 Ed. at p. 105); *Commonwealth Edison Company* (Zion Station, Units 1 and 2), ALAB-196, 7 AEC 457, 460 (1974); *Boston Edison Company* (Pilgrim Station, Unit 2), LBP-75-30, 1 NRC 579, 581 (1975); *Allied General Nuclear Services* (Barnwell Station), LBP-77-13, 5 NRC 489 (1977).

"protective order" to modify or eliminate the obligation to respond, but the movant must establish "good cause" for issuing such an order. 10 CFR 2.740(c). And as in judicial practice, general objections do not provide that cause. Challenges to interrogatories must be

> specific enough so that the [tribunal] can understand in what way the interrogatories are claimed to be objectionable. General objections, such as the objection that the interrogatories will require the party to conduct research and compile data, or that they are unreasonably burdensome, oppressive, or vexatious, or that they seek information that is as easily available to the interrogating as to the interrogated party, or that they would cause annoyance, expense, and oppression to the objecting party without serving any purpose relevant to the action, or that they are duplicative of material already discovered through depositions, or that they are irrelevant and immaterial, or that they call for opinions and conclusions, are insufficient.[7]

Discovery against the staff is on a different footing. With limited exceptions, Commission regulations make staff documents that are relevant to licensing proceedings routinely available in the NRC Public Document Room. 10 CFR 2.790(a). The contemplation is that these "should reasonably disclose the basis for the staff's position,"[8] thereby reducing any need for formal discovery. Reflective of that policy, the Rules of Practice limit documentary discovery against the staff to items not reasonably obtainable from other sources, 10 CFR 2.744; require a showing of "exceptional circumstances" to depose staff personnel, 10 CFR 2.720(h) and 2.740a(j); and allow interrogatories addressed to the staff only "where the information is necessary to a proper decision in the case and not obtainable elsewhere."[9] See 10 CFR 2.720(h)(2)(ii). In addition, the licensing board's advance permission is needed to depose staff members or to require the staff to answer written interrogatories. *Ibid.*

2. **The proceeding below.** Notice of opportunity for a public hearing on the applicants' request for an operating license was published on August 9, 1978. 43 FR 35406. The Coalition and others petitioned for such a hearing and sought leave to intervene.[10] On January 15, 1979 the Coalition amended its petition to clarify its assertions of interest and standing. That amendment also set forth twelve contentions the Coalition sought to have

[7]4A *Moore's Federal Practice* (1980 ed). ¶ 33.27 (at pp. 33-151 and 33-152) (citations omitted); *and see* 10 CFR 2.740b(b); *Pilgrim, supra,* LBP-75-30, 1 NRC at p. 583 *ff.*

[8]NRC "Statement of General Policy and Procedure: Conduct of Proceedings for the Issuance of Construction Permits and Operating Licenses...," 10 CFR Part 2, App. A, IV(d).

[9]*Ibid.*

[10]The other petitioners were Colleen Marsh *et al.* Susquehanna Environmental Advocates (SEA); and Citizens Against Nuclear Danger (CAND). In addition, the Radiation protection Bureau of the Pennsylvania Environmental Resources Department sought intervention under 10 CFR 2.715(c) as the representative of an "interested state."

litigated. These ranged in subject matter from the health effects of the uranium fuel cycle to design deficiencies in the facility's nuclear steam supply system and are reprinted in full in Appendix A, *infra,* at 341.

As 10 CFR 2.751a requires, the Licensing Board held a prehearing conference to consider the intervention petitions and the contentions. The Board's March 6, 1979, "Special Prehearing Conference Order" reflects its determinations: The Coalition and three other petitioners were admitted as parties, certain contentions were rejected as beyond the Board's jurisdiction, duplicative contentions were combined, and others were rephrased for the sake of clarity. The Board accepted in all some eighteen contentions (not counting subparts) — including ten of the Coalition's twelve[11] — and ordered a public hearing held to consider them. LBP-79-6, 9 NRC 291 (1979).

3. **The contentions.** Of the contentions admitted, eight involved environmental issues, eight raised safety questions, and two were mixed. As the Licensing Board characterized and numbered them (Coalition-sponsored contentions are italicized), the environmental contentions related to (1) *effects of the uranium fuel cycle;* (2) *effects of low-level radiation and other discharges from the facility;* (3) *adequacy of uranium supply;* (4) *need for power;* [12] (14) generating capacity of the facility; (16) cooling tower discharges; (17) transmission lines; and (18) *herbicides.*

The safety contentions concerned (5) *the models used to calculate low-level radiation doses;* (6) *evacuation;* (7) and (8) *unresolved generic safety issues;* [13]. (10) transportation of spent fuel; (11) storage of radioactive wastes; (12) and (13) other safety contentions raised by another intervenor.

Contentions raising both environmental and safety issues were (9) *decommissioning;* and (15) occupational exposures to radiation. The contentions that the Board accepted appear in Appendix B.

Two other rulings in that March 6th order are important here. First, the Licensing Board denied as beyond its authority the Coalition's request to have a Commissioner serve as a Board member. Second, the Board set a schedule for conducting the hearing. This authorized (among other things) the immediate commencement of discovery and fixed May 25th as the "last day for submission of first-round discovery request," with responses due June 29, 1979. 9 NRC at 327-29.

[11]The two Coalition contentions not accepted involved halting construction pending archeological investigations (rejected for being submitted too late as a practical matter) and a general objection to the use of the "single failure" criterion in the plant's design (rejected under 10 CFR 2.758 as an impermissible challenge to Commission regulations). See 9 NRC at 323.

[12]As accepted by the Board, this included two of the Coalition's contentions.

[13]As accepted by the Board, these encompassed issues raised in one of the Coalition's contentions.

4. **The first round of discovery.**

(a) **Requests.** The staff, the applicants and the Coalition all made timely requests for discovery.[14] The staff sought the Coalition's answers to a number of interrogatories directed to the ten contentions the Coalition had sponsored, together with two "general interrogatories" asking for the identity of its proposed expert witnesses and for information about their expertise, planned testimony, and supporting documentary evidence. The staff's "First Round" of interrogatories to the Coalition appears in Appendix C.

The applicants also served interrogatories on the Coalition. These were similar in form to the staff's. They consisted of about 150 specific questions directed to admitted contentions and "general interrogatories" seeking the evidentiary basis for the Coalition's answers, together with a "followup" interrogatory about expert witnesses. The applicants' interrogatories, unlike the staff's, covered all the admitted contentions and identical sets were served on all intervenors. The applicants' "First Set" of interrogatories appears in Appendix D.

The Coalition's discovery demands of the staff and of the applicants included not only interrogatories but also requests for large numbers of documents, including transcripts of Commission meetings, "all correspondence" on certain topics, and reports on the accident at Three Mile Island. The Coalition's "First Round Discovery Requests" appear in Appendix E.

(b) **Responses.** On June 29th, the Coalition provided eight pages of responses to the staff's first round of interrogatories but answered none of the applicants'. Instead, calling them "extraordinarily burdensome, oppressive and utterly pointless," it sought a protective order. As grounds for that relief, the Coalition pointed to the number of interrogatories applicants had served and calculated that it had been asked to supply "up to a total of 2700 separate answers." Stating that it had neither the time or the resources to respond, the Coalition contended that applicants' interrogatories amounted to deliberate and unnecessary harrassment and asked to be excused from responding to any of them.

On the other hand, the applicants responded to most of the Coalition's discovery demands by mailing it some of the requested documents and by making others available for inspection and copying at their counsel's office in Allentown, Pennsylvania. The applicants objected to two of the Coalition's discovery requests as seeking information irrelevant to the matters in controversy or unrelated to the Coalition's contentions.

[14]Requests by or to other parties are not relevant to the matter now before us.

The staff answered the Coalition's discovery demands with a letter dated June 27, 1979. In it, the staff asserted that the Coalition had not complied with the rules governing discovery from the staff (see at 323, *supra*) and therefore that it need not respond to those demands. The staff letter went on, however, to inform the Coalition that the documents and information sought were available for inspection and copying in the NRC Public Document Room (PDR) in Washington (or in Harrisburg, Pennsylvania, for information involving the Three Mile Island facility). Any NRC documents not there, the letter represented, would be made available at staff counsel's office in Bethesda, together with any relevant non-NRC documents that the Commission possessed, provided that the Coalition specified the ones it could not locate in the public document rooms. The letter also told the Coalition that many of the reports it had requested were contained in published documents and explained where these could be purchased. Finally, the staff objected specifically to a few of the Coalition's discovery demands.

(c) **Motions to compel discovery.** The staff complained that the Coalition's answers were evasive, incomplete, dilatory and unresponsive, and moved on July 13th for an order directing that intervenor to supplement its interrogatory responses and putting it on notice of the consequences of not doing so. Three days later the applicants moved to compel answers to their interrogatories on the ground that the Coalition's blanket objection to them was unjustified. The applicants denied that their interrogatories were unduly numerous and insisted that they sought relevant and necessary information. Their motion papers acknowledged instances where Coalition answers to staff interrogatories had furnished some of the information applicants also sought and withdrew four interrogatories for that reason.

(d) **The Licensing Board's rulings.** In an August 24th order explaining its actions, the Board ruled on the various discovery motions. It denied the Coalition's motion for a protective order, on the ground that a general objection to all applicants' interrogatories was legally insufficient basis for such relief, and granted the other parties' motions to compel discovery. The Board gave the Coalition two more weeks either (1) to answer the applicants' interrogatories and supplement its earlier responses to the staff or (2) to file specific "reasons why each discovery request [was] objectionable to it."

(5) **Further proceedings.** As we detail in the margin below,[15] despite the

[15]Following the Licensing Board's order of August 24, 1979, the Coalition on September 10th served a "Second Round" of discovery requests on the staff. Although this sought an additional document and more transcripts, it was largely a belated objection to the staff's "first round" responses. The Coalition complained about the staff's making documents available for inspection and copying in the NRC Public Document Rooms rather than mailing them to it without charge. The Coalition stressed that it was participating in the proceeding "as a public service." Because its representatives lived more than 125 miles from either PDR, they could neither afford to travel to Washington nor to purchase the documents, all of which were asserted to be necessary to the Coalition's participation.

Staff counsel responded with a second letter (dated September 13, 1979) reiterating its position (see at p. 325, *supra*) and adding that furnishing the materials without charge was against Commission policy. The Coalition moved on September 24th to compel the staff to do so. The staff responded on October 15th stating that the Coalition had not complied with the rules of discovery against the staff and, in any event, that those rules only called for making the documents available for inspection and copying, as had been done.

The Coalition responded on September 17th to the Licensing Board's August 24th order compelling it to make discovery. Protesting that order as requiring "detailed and repetitive responses to unreasonable, burdensome, and unduly oppressive numbers of interrogatories from the [applicant and staff]," it renewed its request for a protective order. It contended that lack of counsel, funds and access to documents and transcripts hindered its ability to provide answers within the established deadlines. (Response, at pp. 1-3). It also sought to excuse its lack of responses to the applicants' and staff's filings with the explanation that "personal responsibilities" and "prior commitments" had caused its representatives to be absent from Pennsylvania for most of July and August. In support of its request for a protective order, the Coalition set forth specific objections to the staff's interrogatories and supplemented one of its earlier responses. However, it continued to decline either to answer or to object specifically to the applicants' interrogatories, once again characterizing them as "extraordinarily burdensome," and asking the Board either to reduce them to a "rational and defensible number" or to allow a full year — until September 15, 1980 — for the Coalition to answer. (*Id.* at p. 325).

Both the staff (on October 9, 1979) and the applicants (on October 12, 1979) moved to dismiss the Coalition from the proceeding for failure to make discovery as ordered. The staff, however, favored giving the Coalition an additional fourteen days to respond properly. The applicants did not oppose that idea, but doubted that a third opportunity was warranted. Both movants also asked the Board to dismiss contentions raised solely by the Coalition. Intervenor responded by accusing the staff of "relentless burdensome harrassment" and objecting to "the enormity and viciousness of the Applicants' demands." ECNP Response to Staff Motions, filed October 13, 1979, at p. 4; ECNP Response to Applicants' Motion, filed October 22, 1979, at pp. 1-2.

The Licensing Board ruled on October 30th. LBP-79-31, 10 NRC 597. After detailing the numerous additional filings made in the course of what it terms the parties' "procedural skirmishing," the Board observed that the discovery process was not working in this proceeding. Despite its conclusion that there might be grounds to dismiss the Coalition, the Board decided that strict construction of discovery rules was inappropriate and that "dismissal of any of the intervenors or their contentions...would not be warranted." 10 NRC at p. 602. The Board instead lightened the Coalition's obligations by postponing discovery on health and safety issues until the end of the environmental phase of the hearing and by excusing all intervenors from answering interrogatories except on their own contentions. These measures left the Coalition obligated to make discovery on only five contentions.

The Board acknowledged that by making documents available in the public document rooms, the staff had responded to the Coalition's discovery requests "in accord with NRC rules." 10 NRC at p. 605. Nevertheless, in an effort to assist the Coalition, the Board urged the staff to give that intervenor documents where possible and to take other steps to make them available locally; for example, at the Pennsylvania State University Library in the town of State College, where both the Coalition's representatives reside. (The Reactor site is some one hundred miles to the east in Salem Township, Luzerne County, Pennsylvania; the local PDR is in Wilkes-Barre). Acting on the Board's suggestion, staff counsel forwarded extra copies of sixteen documents to the Coalition on November 15, 1979 and of five additional documents on November 26, 1979. Finally, the Board granted all parties an extension until December 14, 1979 to respond to outstanding discovery requests.

On November 19, 1979 the Coalition protested the Board's latest discovery order, again complaining that the outstanding discovery requests were unreasonable and alleging that the Board had demonstrated an "unswerving bias and total inability to conduct a fair hearing." Contending that the Board's order forced it to choose between (1) dropping out of all other NRC proceedings in order to answer interrogatories in this one or (2) ignoring the Board's order in this case in order to keep up with the others, the Coalition once more moved for a protective order and for reconsideration of the Board's decision. It also asked the Board to certify the Coalition's discovery complaints to the Commission, including a request that the Licensing Board be disbanded for "gross incompetence" and reconstituted with a Commissioner as a member.

Both the applicants and staff opposed the Coalition's motion for the reasons given in the Licensing Board's October 30th decision (LBP-79-31, 10 NRC 597); the staff also opposed the request for certification.

The Licensing Board denied all of the Coalition's requests on December 6, 1979. It found them to be "disrespectful in tone, inaccurate and misleading in content, and frivolous in all respects." However, because the staff's Final Environmental Statement had been delayed, the Board extended the period for discovery responses, this time until January 18, 1980. Noting that the October 30th order had granted the Coalition "considerable relief" from outstanding discovery obligations, the Board questioned the intervenor's "ability to contribute to the substantive resolution of the issues it [had] raised" and suggested that "perhaps the organization [had] spread itself too thin and should not be attempting to participate in [so many] proceedings at once." (Order, at pp. 5-6).

On January 18th, "with strong protest," the Coalition answered applicants' interrogatories on the five contentions specified in the Board's order, which it termed "unjust in the extreme." The applicants, countering that the Coalition had either not answered or inadequately answered many interrogatories, moved on February 4th to compel further answers and to prohibit the Coalition from litigating three of its contentions. The Coalition then requested a protective order on February 19, 1980 to guard against "further requirements to reanswer," contending that it had responded adequately and in good faith.

The staff also believed that the Coalition's discovery responses were deficient and on February 25, 1980 supported the applicants' motion to exclude it from introducing direct testimony, but opposed the effort to prohibit the intervenor from cross-examining.

In view of the severity of the proposed sanctions, the Licensing Board scheduled a prehearing conference on March 20, 1980 to consider them. Order Setting Prehearing Conference, dated February 22, 1980 (published at 45 FR 13239 (February 28, 1980)). Before that argument was held, the Coalition filed its March 15th request to the Commission. It is this request that was referred to us for resolution and with which this opinion deals (see at p. 320, *supra*).

Board's orders the Coalition persisted in its refusal to answer the applicants' interrogatories, reiterating that their large number made responding unduly burdensome. The Coalition, on the other hand, asked the Board to order the staff to mail free copies of all the documents it had demanded to its representatives, asserting that it could afford neither to purchase those documents nor to send its representatives to the Public Document Rooms to inspect and copy them.

The applicants and staff then moved to dismiss the Coalition from the proceeding and to strike its contentions for failure to make discovery. In a series of rulings explaining its actions, the Licensing Board denied that relief. Instead, the Board allowed the Coalition to limit its responses to those discovery demands related to its own environmental contentions and deferred the Coalition's obligation to answer interrogatories on its health and safety contentions (including those involving combined environmental and safety issues) until after the environmental hearings. LBP-79-31, 10 NRC 597 (1979); Order of December 6, 1979 (unpublished); Order Setting Prehearing Conference (published at 45 FR 13239 (February 28, 1980)). As a result, the Coalition was left to answer interrogatories on five (rather than eighteen) contentions[16] and its time for doing so was in effect extended at this point from early September 1979 to mid-January 1980.

In passing on the Coalition's requests, the Licensing Board acknowledged that by making documents available in the PDR's the staff had complied with Commission rules. Nevertheless, the Board encouraged the staff to send the Coalition free copies if possible. The Board also asked the staff to make other materials available to intervenor's representatives in State College, Pennsylvania — where they reside — rather than in the local PDR that had been established in Wilkes-Barre, near the facility site, some 100 miles to the east. (The staff complied with the Board's request, if not entirely to the Coalition's satisfaction).

The Coalition then answered some of the interrogatories as order (albeit with "strong protest.") Both the applicants and staff deemed those partial answers inadequate. Once more they moved to compel fuller answers or for sanctions; the Coalition in turn asked for a protective order excusing it from responding further. The Licensing Board's call for a prehearing conference on those motions triggered the Coalition's petition (now before us) to the Commission (see at 320, *supra*).

The Board below thereafter denied the sanction requests, specified which of the Coalition's interrogatory answers were adequate, and allowed that

[16]As explained in fn. 12, *supra*, Board-accepted contention 4 on need for power subsumed two of the Coalition's contentions dealing with that issue; its remaining discovery obligations concerned six contentions as originally submitted or five as designated in the Board's order of March 6, 1979. (LBP-79-6, 9 NRC 291).

intervenor until May 1, 1980, to supplement those that were not. LBP-80-13, 11 NRC 559 (1980). The Coalition filed additional answers on that date and more on May 20th; neither the applicants nor the staff touched on the adequacy of those answers in the subsequent briefs we called for in ALAB-593, *supra,* 11 NRC at 763.

III

We perceive three main themes in the Coalition's complaint: First, that the applicant unfairly asked it to answer "excessively large numbers of interrogatories"; second, that the Licensing Board failed to protect it from that "abuse" of the discovery process; and, third, that as "public-interest" litigants they were unfairly disadvantaged by the Commission's discovery rules. We discuss each in turn.

1. **The number of interrogatories.**

(a) The Rules of Practice (like the Federal Rules on which they are based) set no limit on the number of interrogatories parties may ask one another, provided that they relate to the issues in controversy. 10 CFR 2.740(b)(1). The Coalition's petition does not argue that the interrogatories it objected to are irrelevant; it complains of their number. The Coalition asserts that its "mere dozen contentions" were unfairly met with "fully 2,700" interrogatories from the applicants.[17]

The Coalition's complaint can neither be accepted nor rejected on the basis of those two figures. It is, to be sure, literally true that the Coalition submitted twelve contentions (of which the Board admitted ten). But a single contention can cover many subjects for inquiry; such is the case with the Coalition's. For example, the intervenor's first contention (rephrased and shortened by the Board) concerns the effect on human health of the uranium fuel cycle and appears in the margin below.[18] Even a cursory reading suggests ten legitimate subjects for inquiry subsumed in it; *i.e.,* (1)

[17]Coalition's "Request to the NRC Commissioners," dated March 14, 1980, at 6.

[18] "1. The quantity of radon-222 which will be released during the fuel cycle required for the Susquehanna facility had not been, but should be, adequately assessed. The radiological health effects of this radon should be estimated and these estimates factored into the cost-benefit balance for the operation of the plant.

The radiological health effects of all isotopes other than radon-222 which will be released during the fuel cycle required for the Susquehanna plant have been misrepresented and underestimated. In particular, the health effects of each long-lived isotope which will be released from the fuel cycle for Susquehanna should be reassessed. The appropriately determined effects must be factored into the cost-benefit balance for the operation of the plant." 9 NRC at 298.

The longer form of the contention as initially submitted appears in Appendix A, *infra,* at 341.

the quantity of radon releases attributable to fabricating fuel for the plant; (2) how that quantity was assessed; (3) the health effects attributable to it; (4) how those effects influence the NEPA cost-benefit balance; (5) the other isotopes released in the fabrication process; (6) the quantities of those isotopes; (7) their health effects; (8) and (9) how and by whom those effects have been misrepresented; and (10) how those effects influence the cost-benefit balance.

The radiological health and safety contentions are similarly multi-layered. For example, the Coalition asserts the existence of "numerous design deficiencies" in the plant's nuclear steam supply system that render the facility unsafe to operate.[19] Even as rephrased and shortened by the Board for purposes of litigation, the contention has four subparts and each raises one or more serious allegations.[20]

This multiple structure typifies all the Coalition's contentions. (See Appendix A, *infra).* This is no criticism; safety questions involving nuclear power generation can have many facets. Our point is that the Coalition's references to its "mere dozen" contentions understates the number and complexity of matters it raised. Without attempting to quantify those matters precisely, it is fair to conclude that the Coalition's figure is low by at least a factor of five.

We stress again that there is nothing wrong with raising a great many issues. But the courts have long recognized that parties are entitled to discover all matters not privileged that tend to support or negate the allegations in the pleadings, or which are reasonably calculated to reveal such matters.[21] It is therefore against the number and nature of the issues

[19]See App. A, *infra,* at 345-346.

[20]"7. The nuclear steam supply system of Susquehanna 1 and 2 contains numerous generic design deficiencies, some of which may never be resolvable, and which, when reviewed together, render a picture of an unsafe unclear installation which may never be safe enough to operate. Specifically:

a. The pressure suppression containment structure may not be constructed with sufficient strength to withstand the dynamic forces realized during blowdown.

b. The cracking of stainless steel piping in BWR coolant water environments due to stress corrosion has yet to be prevented or avoided.

c. BWR core spray nozzles occasionally crack, a problem which reduces their effectiveness.

d. The ability of Susquehanna to survive anticipated transients without scram (ATWS) remains to be demonstrated. In this regard, reliance on probabilistic numbers, as 10^{-7} per year, is unwise and unsafe."

[21]Where discovery requests "are relevant directly to the issues raised by the pleadings they cannot be attacked." *Sandee Mfg. Company* v. *Rohm and Haas Company,* 24 FRD 53, 57 (N.D.

FOOTNOTE CONTINUED ON NEXT PAGE

actually raised, not a count of formal contentions, that the reasonableness of applicants' discovery requests must be balanced. And that number is, as noted, substantially greater than the Coalition's petition indicates.

(b) The applicants did not submit 2,700 separate interrogatories. Rather, they served a set of questions divided into sections corresponding to the contentions. The Coalition terms these the "basic" interrogatories. Coupled with them were four "general interrogatories" designed to elicit the foundation for the answers given to the basic interrogatories. The 2,700 figure is the Coalition's computation; its June 29, 1979 response to applicants' interrogatories explains the derivation of that figure: "The [Applicants'] basic questionnaire has about 150 questions and parts thereof. ...[T]he insidious nature of the problem lies in the four 'general interrogatories,' composed of a total of eighteen parts, and the Applicants ask that each of the 150 questions also be answered with respect to the eighteen 'general interrogatories.' This would require up to a total of 2,700 separate answers." (150 multiplied by 18).

(i) Turning first to the "basic" questions, it is apparent that the Coalition counted its contentions by one method and the applicants' interrogatories by another. Each contention was one unit regardless of the number of issues it raised; the interrogatories, however, were broken down into constituent parts for purposes of enumeration. The Coalition's assertion that the applicants had asked 150 "basic" interrogatories about its "mere twelve" contentions rests on this basis.

An "apples and oranges" approach of that sort is not very enlightening. A different picture emerges if one compares like and like; *e.g.,* the number of contentions against the number of basic interrogatories — 12 vs. 18, or the approximate number of issues raised by the former against the individual questions in the latter — 60 v. 150. But the fairest test is to compare the contentions themselves with the corresponding "basic" interrogatories; *i.e.,* Appendix A with Appendix D. We have done so and are satisfied that the basic interrogatories relate to the matters in controversy and are not unreasonable in number.[22] (By our count they average roughly ten per contention).

(ii) This brings us to the heart of the Coalition's dissatisfaction over the number of contentions — the four "insidious" general interrogatories

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Ill., 1959); *Browning King Company* v. *Browning King and Company,* 5 FRD 386, 387 (E.D. Pa., 1946); *accord, Kainz* v. *Anheuser-Busch, Inc.,* 15 FRD 242 (N.D. Ill., 1954); *DuBois Brewing Company* v. *United States,* 34 FRD 126, 127 (W.D. Pa., 1963).

[22]This does not mean that all 150 were flawless. We do not reach that question because the Coalition filed no specific objections to any of them.

(reprinted in the margin below).[23] Here again, the Coalition's use of statistics is questionable. It is simply not the case that all four general interrogatories apply to each basic interrogatory, as the Coalition's total of 2,700 questions assumes. (See at p. 332, *supra*). Whether none, one, two, or all four apply depends on whether an interrogatory answer was based on (1) documents, (2) studies, (3) research, (4) private communications with others, or (5) some combination of those sources. We cannot ourselves quantify the total number of responses called for because we do not know the basis for the Coalition's assertions. But it is safe to observe that far fewer than 2,700 answers were necessary. This appears to be confirmed by the responses the Coalition finally supplied to applicants' interrogatories in its filings on January 18th, May 1st, and May 20th of this year.

The use of general interrogatories is a common discovery practice and the staff also used the technique, see Appendix C. Questions of this nature are designed to uncover the foundation for answers given to interrogatories seeking substantive information. The Rules of Practice expressly sanction discovery into the claims of an opposing party and

[23]Applicants' full set of interrogatories appears in Appendix D. The following are their four "general interrogatories."

1. Is your answer based upon one or more documents*? If so:
   a. Identify each such document on which your answer is based.
   b. Identify the information in each document on which your answer is based.
   c. Explain how such information provides a basis for your answer.
2. Is your answer based upon any type of study, calculation, or analysis? If so:
   a. Describe the nature of the study, calculation, or analysis and identify any documents which discuss or describe the study, calculation, or analysis.
   b. Who performed the study, calculation, or analysis?
   c. When and where was the study, calculation, or analysis performed?
   d. Describe in detail the information that was studied, calculated, or analyzed.
   e. What were the results of each study, calculation, or analysis?
   f. Explain how such study, calculation, or analysis provides a basis for your answer.
3. Is your answer based upon research? If so:
   a. Describe all such research and identify each document discussing or describing such research.
   b. When and where was the research conducted?
   c. By whom was the research conducted?
   d. Explain how such research provides a basis for your answer.
4. Is your answer based upon conversations, consultations, correspondence or any other type of communications with one or more individuals? If so:
   a. Identify by name and address each such individual.
   b. State the educational and professional background of each such individual, including occupation and institutional affiliations.
   c. Describe the nature of each communication with each such individual, when it occurred, and identify all other individuals involved.
   d. Describe the information received from each such individual and explain how it provides a basis for your answer.
   e. Identify each letter, memorandum, tape, note or other record related to each conversation, correspondence, or other communication with such individual.

specifically allow questions concerning such things as "the existence, description, nature, custody, condition, and location of any books, documents, or other tangible things and the identity and location of persons having knowledge of any discoverable matter." 10 CFR 2.740(b)(1).

We do not suggest that answering the applicants' interrogatories was a simple task. But the assertion that it "would take months of full time work" to respond[24] cannot be credited at face value. The Board below explained to the Coalition more than a year ago that:

> In responding to discovery requests, a party is not required to engage in extensive independent research. It need only reveal information in its possession or control (although it may be required to perform some investigation to determine what information it actually possesses). Assuming truthfulness of the statement, lack of knowledge is always an adequate response.[25]

Moreover, the interrogatories in large part inquired into the Coalition's own case. It is therefore not surprising that the Licensing Board gave a cool reception to a blanket refusal to answer even one of them on the grounds of "undue burden." Judicial tribunals have long recognized that the party being interrogated would have to gather such information before trial in any event; the only burden imposed is to advance that compilation to an earlier stage.[26]

The general lack of sympathy to claims of this kind stems from the nature of modern judicial and administrative litigation. "Pleadings" and "contentions" no longer describe in voluminous detail everything the parties expect to prove and how they plan to go about doing so. Rather, they provide general notice of the issues. It is left to the parties to narrow those issues through use of various discovery devices so that evidence need

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*The applicants' definition of "documents" is omitted; it appears in Appendix D

[24]Coalition's "Answers to First Round Applicant Interrogatories," dated June 29, 1979, at p. 2.

[25]Memorandum and Order on Scheduling and Discovery Motions (August 24, 1979) at p. 8 (unpublished).

[26]"If the interrogatories are relevant, the fact that they involve work, research and expense is not sufficient to render them objectionable [where] much of the information is in the possession or knowledge of the [parties to whom they are directed] and must be compiled in their own preparation for trial." *United States* v. *NYSCO Laboratories, Inc.*, 26 FRD 159, 161-62 (E.D.N.Y. 1960). "First, the mere fact that interrogatories are lengthy, or that the [party] will be put to some trouble and expense in preparing the requested answers is not alone sufficient to warrant the granting of a protective order. Secondly, the [party] has not made specific objections to particular interrogatories; a general request for a protective order is not sufficient." *Flood* v. *Margis*, 64 FRD 59, 61 (E.D. Wis. 1974) (citations omitted); *accord, Flour Mills of America* v. *Pace*, 75 FRD 676 (E.D. Okla. 1977); *Kainz* v. *Anheuser-Busch, Inc.*, 15 FRD 242, 252 (N.D. Ill. 1954); Wright and Miller, *Federal Practice and Procedure* (Civil — 1970 ed)., 2174 and authorities cited. See also, *Moore's Federal Practice, op. cit. supra*, p. 7.

be produced at the hearing only on matters actually controverted. This is why curtailing discovery tends to lengthen the trial — with a corresponding increase in expense and incovenience for all who must take part.[27]

In this case, the Coalition's pleadings put in issue a substantial number of significant matters. Applicants were aware that this intervenor and — perhaps more importantly — its representatives are not strangers to NRC proceedings.[28] The latter, though not trained lawyers or engineers, are experienced participants in Commission hearings. Both hold doctorates in scientific disciplines and they either are now or were once members of university faculties. We can find no fault in these circumstances with filing interrogatories designed to probe thoroughly the basis of the Coalition's case; it would have been imprudent not to have done so. The assertion that applicants' interrogatories were filed simply for harrassment is not well taken; they reflect the number and complexity of the issues raised, not an abuse of the discovery process.

2. **The Licensing Board's discovery rulings.**

The gravamen of the Coalition's second plaint is that the Licensing Board was not evenhanded in ruling on discovery requests. The Coalition's petition (at p. 2) alleges that the Board below "totally ignored the Intervenors' requests for clarification as well as for reasonable protection and relief," while "acquiesc[ing in] virtually every demand by Applicant and Staff and deny[ing] virtually every request by the various intervenors."

The record does not sustain those allegations. The fact that the Board did not grant the Coalition all the relief it wanted does not perforce mean that its requests were improperly ignored. For reasons we have already explained, the Board correctly rejected intervenor's attempt to avoid answering any of the applicants' interrogatories.[29] But the Board did ease substantially the Coalition's discovery burden. For example, its October 30, 1979 discovery order relieved that intervenor of the need to respond to interrogatories except on its own contentions. That order also postponed all discovery on health and safety contentions until after the environmental hearings.[30] Those two steps alone reduced the Coalition's discovery obligations by two thirds, if not more. Moreover, this relief was granted not on the Coalition's initiative but the Board's. And the same order gave the Coalition another six weeks (until December 14, 1979) to answer the interrogatories.[31]

[27]See, generally, Wright and Miller, *Federal Practice and Procedure* (Civil — 1970 ed)., 2001 *et seq.*

[28]See the Coalition's September 17, 1979 Response (at p. 10) to the Order to Compel Discovery.

[29]See p. 335, supra.

[30]LBP-79-31, *supra,* 10 NRC at 604-05.

[31]*Id.* at 606.

The Coalition is no more correct in its assertion that the Board's unhesitatingly acceded to all the applicants' and staff's discovery requests. On the contrary, those parties' key demands were regularly denied. Their efforts to have the Coalition dismissed from the proceeding and its contentions disregarded because of its failure to make proper discovery were rebuffed repeatedly by the Board below.[32] Even a cursory reading of the Licensing Board's October discovery memorandum reveals its keen appreciation of a volunteer intervenor's plight.[33] If one thing stands out, it is the Board's sympathetic endeavors to assist the Coalition and the other intervenors to the limits of its authority.[34] Accordingly, though the rules called for staff documents to be made available for inspection and copying only in the Public Document Rooms, and despite the Coalition's failure to follow the rules for discovery against the staff, and notwithstanding the Commission policy then extant against financing intervenors,[35] the Board urged the staff to make "as much effort as possible...to assist the intervenors in obtaining the relevant information they seek to develop their positions to the fullest possible extent." Indeed, it went so far as to suggest ways this could be done, *e.g.*, by lending documents and transcripts to intervenor's representatives, giving them extra copies unneeded by the staff, and setting up an additional local Public Document Room in State College, Pennsylva-

[32]See, *e.g.*, LBP-79-31, *supra*, 10 NRC at 602; and the discussion in fn. 15, *supra*.

[33]For example, the Board noted that "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 participant, on the one hand, and Applicants or governmental participants, on the other, whose efforts are funded by ratepayers or through taxes." 10 NRC at 603.

[34]Thus the Board wrote that "we are aware that at least one of the intervenors here — [the Coalition] — 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." 10 NRC at 604.

[35]See, *Financial Assistance to Participants in Commission Proceedings*, CLI-76-23, 4 NRC 494 (1976).

nia — where the Coalition's representatives reside — some 100 miles distant from the plant site.[36]

To be sure, the Board's patience was tested when the Coalition, in lieu of answering the remaining interrogatories, used the extra time allowed it for that purpose instead to file a pleading attacking the Board's integrity, complaining that it had been given only "hollow" relief, and renewing its demand to be excused from making discovery on grounds twice previously rejected.[37] The Board's reaction was firm but judicious: it pointed out errors in the intervenor's position, explained once again why the relief it sought was unwarranted, cautioned it against the use of intemperate language — and found cause to extend the Coalition's time to answer the interrogatories to January 18, 1980.[38] And when, after the Coalition finally answered some of the interrogatories, the other parties moved for sanctions on the ground that those answers were not adequate, the Board did not rush to grant that relief. Instead, it scheduled a prehearing conference in order to deal with the problem in a face-to-face meeting rather than on the papers alone. (At this point the Coalition sought to bring its complaints to the Commission). When the Board eventually ruled on those motions, it once again refrained from dismissing the Coalition or expunging its contentions, but allowed that intervenor yet more time to supplement its interrogatory answers. In the end, the Board gave the Coalition until May 1980 to answer interrogatories filed in May 1979. LBP-80-13, *supra*, 11 NRC 559.

What emerges from the farrago of motions, objections, and rulings is a different picture than the one the Coalition paints. It reveals an intervenor

[36] "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." 10 NRC at 605.

[37] Among other things, the Coalition referred to the Board's rulings as a "hollow and empty gesture." It accused the Board of joining the applicants and staff in "creating a vicious precedent" for better-financed parties to force intervenors from the proceeding, and allowing an "inquisition-like" proceeding. Coalition Response of November 19, 1979 at pp. 7, 10.

[38] Order of December 6, 1979 (unpublished).

laboring under a serious misconception of the nature and purpose of discovery and of its rights and responsibilities as a litigant. For example, the Coalition repeatedly insisted that its rights were improperly abridged because the parties did not mail its representatives all the documents it demanded.[39] But the Commission's rules, like the corresponding Federal Rules, simply do not impose that requirement. A demand for documents is satisfied before the Commission as in court by producing them for inspection and copying.[40]

The Coalition also appears to consider discovery a means by which an applicant can shift its burden of proof to an intervenor.[41] The Licensing Board had correctly explained to the intervenor, however, that the applicant needs discovery to prepare for trial:

> The Applicants in particular carry an unrelieved burden of proof in Commission proceedings. Unless they can effectively inquire into the position of the intervenors, discharging that burden may be impossible. To permit a party to make skeletal contentions, keep the bases for them secret, then require its adversaries to meet any conceivable thrust at hearing would be patently unfair, and inconsistent with a sound record.[42]

In that same order the Board stressed that "[a] party may not insist upon his right to ask questions of other parties, while at the same time disclaiming any obligation to respond to questions *from* those other parties."[43]

Regrettably those lessons did not take hold, for that is what eventuated here. We have examined every one of the Licensing Board's discovery rulings carefully. The Board neither abused nor countenanced the abuse of intervenor's rights. Rather, its actions exemplify a steady, patient course designed to move the proceeding along without allowing potentially important issues either to slip by the wayside or to lose active supporters in the hearing. If the Board favored one side over the other on occasion, it was not the Coalition that had cause to complain.

3. **The Coalition and the discovery rules.**

The Coalition's filings evidence a belief that a "public interest" litigant with limited finances may disregard key provisions of the Rules of Practice. Simply as a matter of fairness, a licensing board may not waive the

[39]See, *e.g.*, Coalition's Response of October 13, 1979 at 3.
[40]10 CFR 2.741, 2.744 and 2.790; Rule 34, Federal Rules of Civil Procedure.
[41]See, *e.g.*, the Coalition's "Request to the NRC Commissioners" of March 14, 1980 at 8.
[42]Memorandum and Order of August 24, 1979 (unpublished) at 6, quoting from *Northern States Power Company* (Tyrone Energy Park, Unit 1), LBP-77-37, 5 NRC 1298, 1300-01 (1977) (citation omitted).
[43]*Id.* at 10, quoting from *Offshore Power Systems* (Floating Nuclear Plants), LBP-75-67, 2 NRC 813, 816-17 (1975).

discovery rules for one side and not the other. To be sure, participation in Commission proceedings can be burdensome and time-consuming — as can be any complex litigation. But neither the Rules of Practice in general nor the discovery rules in particular were the root cause of the Coalition's unsatisfactory responses to legitimate discovery requests. There are other public interest litigants in this proceeding;[44] by and large they succeeded in responding after the Board explained to them what making discovery called for.

The Coalition's difficulties are of different origin. First, the organization and its representatives have undertaken to participate in *four* separate Commission evidentiary proceedings running simultaneously: the Three Mile Island Unit 1 Restart proceeding; the evidentiary proceeding on radon releases; the Three Mile Island Unit 2 cases involving aircraft crash probabilities; and this one.[45] Even experienced lawyers with ample resources behind them would be hard put to manage that load. It therefore comes as no suprise that intervenor's "lay" representaives are having difficulty doing it. Their participation has been similarly dificient in at least one other of those proceedings. Most of the Coalition's contentions were dismissed for failure to make discovery in *Metropolitan Edison Company* (Three Mile Island Station, Unit No. 1), LBP-80-17, 11 NRC 893 (1980) (Restart).

But it is not only that the Coalition has taken on more cases than it can handle. Its papers also evidence a failure to understand basic discovery tenets. A litigant may not make serious allegations against another party and then refuse to reveal whether those allegations have any basis. This, however, is what the Coalition attempted to do. For example, it responded to a motion to compel discovery with the assertion that:

> [T]he issues raised in contention are matters about which the Applicant and Staff should be well prepared already, if the license is to issue, regardless of whether or not the Intervenors can supplement their initial responses to interrogatories. In an Operating License proceeding, it is the business of the Applicant to prove it is entitled to a license. It is the responsibility of an Applicant to take whatever preparatory measures it deems appropriate to justify its claim that it should be granted a license. The Intervenors are not paid consultants of the Applicant. If this Applicant cannot prepare its case without the assistance of these Intervenors, then certainly the license should not issue.
>
> Similarly, the taxpayers have gone to great expense to provide the Commission with ample Staff resources to evaluate whether or not the Applicant is entitled to a license. The taxpayers are not paying these Intervenors to prepare the Staff for its role in this proceeding. Further, even

[44]See fn. 10, *supra.*
[45]See fn. 1, *supra.*

> if the Commission were to grant these Intervenors financial assistance as requested, the role of the Intervenor in the licensing proceeding is to provide a check and balance to try to ensure that the public health and safety are protected. By no means, under any circumstances, is it the responsibility of these or any other intervenors to assist the Staff and Applicant in preparation for this proceeding.[46]

The Coalition's understanding of an intervenor's role is simply wrong. To be sure, the license applicant carries the ultimate burden of proof.[47] But intervenors also bear evidentiary responsibilities. In a ruling that has received explicit Supreme Court approval, the Commission has stressed that an intervenor must come forward with evidence "sufficient to require reasonable minds to inquire further" to insure that its contentions are explored at the hearing.[48] Obviously, interrogatories designed to discover what (if any) evidence underlies an intervenor's own contentions are not out of order. The record before us indicates that the Coalition's failure to answer them is not principally attributable to a lack of resources. Rather, its refusal to respond stemmed in larger measure from its erroneous ideas about an intervenor's role and obligations in NRC proceedings — and the fact that its representatives took on far more cases than they could reasonably handle.

In sum, the Coalition's complaints are not substantiated by the record and the relief it seeks must be *denied.* [49]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

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[46]Coalition Response of September 17, 1979, p. 7.

[47]*Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 17-18 (1975), *on reconsideration,* ALAB-315, 3 NRC 101 (1976).

[48]*Consumers Power Company* (Midland Plant, Units 1 and 2), CLI-74-5, 7 AEC 19, 30-32 and fn. 27 (1974), *reversed sub nom. Aeschliman* v. *NRC,* 547 F.2d 622, 628 (D.C. Cir. 1976), *reversed and remanded sub nom. Vermont Yankee Nuclear Power Corp.* v. *NRC,* 435 U.S. 519, 553-54 (1978).

[49]We have not considered the Coalition's request to place a Commissioner on this Licensing Board. That relief is beyond our power, 10 CFR 2.721, and in any event is obviously a decision for the Commission itself.

On July 25th of this year the Commission amended the Rules of Practice to afford parties (other than the applicant) to licensing proceedings a hearing transcript and certain copying services without charge. 40 FR 49535. This is not the relief the Coalition seeks here.

APPENDIX A

Statement of Contentions and Their Bases (Filed by the Environmental Coalition on Nuclear Power on January 15, 1979).

1. Petitioners contend that the analysis of the effects of the uranium fuel cycle on human health from the beginning to the very end of the fuel cycle, have been seriously misrepresented and underestimated. In particular, the health consequences of the long-lived isotopes (long compared with plant lifetimes) have yet to be considered for the "full detoxification period" of each and every long-lived isotope released, or caused to be released to the environment, by the operation of Susquehanna (See *NRDC* v. *NRC,* 547 F.2d 633, 639 at p. n. 12). Isotopes such as Tc-99, Se-79, I-129, Cs-135, and the alpha-particle emitters have, to date, eluded full environmental analysis by those responsible for such analysis.

2. Petitioners contend that the cost-benefit analysis performed by the Staff and Applicant is wholly falsified. This cost-benefit analysis does not represent an analysis "conducted fully and in good faith" (See *Calvert Cliffs' Coordinating Committee* v. *USAEC,* D.C. Cir., 1971, at p. 11). Instead, the analysis conducted was designed to arbitrarily reduce environmental and health costs while simultaneously inflating alleged benefits. In particular, radiation exposure from various isotopes, both short and long-lived, is compared with various background sources of radiation exposure. Yet no justification has thus far been advanced for comparing any cost attributable solely to the operation of Susquehanna with costs attributable to background radiation sources which exist independently of the Susquehanna reactors. In addition, this comparison of radiation attributable to Susquehanna with background radiation distorts completely the cost-benefit analysis of Susquehanna because the beneift side of the analysis received no such comparison. No comparison of the energy generated by Susquehanna is made, for example, with the solar energy incident on the United States. Further, the analysis is faulty because it neglects completely the health costs due to *all* of the long-lived radioactive isotopes released, or caused to be released, to the environment by the operation of Susquehanna. After all, "The Commission's prime area of concern in the licensing context...is public health and safety" (*Vermont Yankee* v. *NRDC,* U.S. at p. 28, 1978).

3. Petitioners assert that known and assured reserves of uranium are insufficient to supply the lifetime fuel required for Susquehanna 1 and 2 in a growing nuclear economy. The historic growth rate for nuclear generated electricity, a measure of uranium consumption, is about 32% annually, for the years 1961 through 1977. Even if this growth rate drops more than in

half to 15%, all of the estimated reserves of uranium will have been consumed prior to the end of the thirty year life of Susquehanna 1 and 2. As a result, much higher fuel prices will result, and environmental damage will increase greatly with the mining of ever lower grade ores. The problems of disposal of mill tailings, now deemed trivial by some, will rapidly mount. Yet no environmental impact assessment has been made of the interrelated fuel supply-mill tailings problems as uranium is consumed, as these problems pertain to the entire operational lifetime of Susquehanna.

4. Petitioners contend that there is no need for Susquehanna. The information supplied by the Applicant shows that, with very modest increases in electrical energy conservation efforts, all of the need for Susquehanna 1 and 2 will disappear completely. Applicant's Environmental Report (ER, at p. 1.1-2) gives load growth ranges. Table 1.1-15 of the ER shows that at the *Very Low* Growth rate scenario, the entire output of Susquehanna 1 and 2 will be available for sale outside the service area of the Applicant as the units come on line. The conservation programs suggested by the Applicant are not designed to encourage either meaningful energy conservation or efficient energy use. Instead, these programs are aimed at encouraging continued electrical energy usage, regardless of whether electricity is the most efficient form of energy for the job at hand or not. The Applicant has not considered the alternative to Susquehanna, as required by NEPA, of more strict energy conservation measures. For example, there is no comparison of cost for upgrading the thermal insulation in existing residences and commercial buildings in the service area of the Applicant with the cost to complete the Susquehanna plant. The discussion of the Applicant's anticipated load growth is based on increased use of electricity for space heat in residences and commercial establishments, together with the continued practice of over-use of electric lighting, both for indoor use and for advertising and display.

In addition, the Applicant presents no discussion of the negative impact of increased electrification of industrial operations (through "modernization," to become more "efficient") upon employment. This impact is readily seen by comparing the number of workers needed to achieve a given output of an "inefficient" plant with the employees needed in a modern, efficient, mechanized plant to achieve the same output. The Applicant thus grossly underestimates the unemployment created by the Applicant in its service area.

5. Petitioners contend that the models used to calculate individual and population doses are inaccurate and obsolete. These deficiencies are compounded by the arbitrary selection of data for the purpose of underestimating radiation doses. In particular, the milk transfer coefficient for iodine has been underestimated (See *Health Physics, 35,* at p. 413-16,

1978). In addition, these models use factors which convert alpha-particle dose in rads to rems which are far too low (See *Health Physics, 34,* at p. 353-60, 1978), and which underestimate the radiation effect, on a per rad basis, for the very low energy beta and gamma radiations, as from H-3 and C-14 (See *Health Physics, 34,* at p. 433-8, 1978). Furthermore, the entire set of radiation standards is based primarily on the data from Hiroshima and Nagasaki, where the dose received by survivors were essentially instantaneous. For radiation effects from the entire uranium fuel cycle, as will be caused by the operation of Susquehanna 1 and 2, the doses received both by workers and by members of the public will be low doses delivered at, in general, low doses rates. The bomb blast data have no demonstrable relevance to this chronic, low dose situation. See *Health Physics, 33,* at p. 369-85, 1977, and *British Journal of Cancer, 37,* at p. 448-51, 1978.

6. Petitioners contend that the analysis of alternatives, as required by NEPA and the Commission's rules, is woefully inadequate and incomplete. This analysis does not consider serious efforts at energy conservation, end use efficiencies, or what have come to be known as "Second Law Efficiencies." In addition, no discussion has been presented concerning the health benefits of energy conservation in conjunction with the conservation alternative to Susquehanna. There has also been no comparison of the health costs attributable to the operation of Susquehanna with those of not operating Susquehanna. Only with these types of comparison can the true health cost of Susquehanna be evaluated.

Solar energy in any of its various forms is not considered as an alternative to Susquehanna. By ignoring this commonly used alternative energy source, the Applicant is hoping to prevent home use of solar heating and hot water applications. Further encouragement of reliance on expensive electrically operated mechanical heating and cooling devices, like heat pumps, in the name of energy conservation, seems to defeat not only energy conservation, but also the development of solar energy. The primary beneficiary of this defiance of NEPA is the Applicant.

7. Petitioners contend that emergency response and evacuation planning by the Applicant, the Director and Staff of the Office of Radiological Health of the Pennsylvania Department of Environmental Resources, the State and County Civil Defense Agencies, and others responsible for protection of the health and safety of the public in the event of a radiological emergency affecting the population beyond the site boundary of Susquehanna is not complete and sufficient to assure prompt notification and evacuation of all areas in which persons may be exposed to radiation doses in excess of those permitted by existing radiation exposure standards for the general public and Protective Action Guides. The recent Planning Basis Report of the NRC and Environmental Protection Agency (NUREG-

0396/EPA 520/1-78-016, December, 1978, at p. 5) notes that "more specific guidance with respect to accidents whose consequences would be more severe than the design basis accidents explicitly considered in the licensing process [is] appropriate."

In view of the Nuclear Regulatory Commission's expressed reservations about the reliability and validity of the probability estimates in the Reactor Safety Study, WASH-1400 (See, e.g., NUREG/CR-0400 and NUREG-0396/EPA 520/1-78-016, at pp. I-6 through I-10, including notes at pp. I-8 and I-9; see also transcript of the December 21, 1978, and subsequent NRC Commissioners' meetings and Commissioners' draft policy statements on WASH-1400), and in view of the explicit limitation of the validity of the Reactor Safety Study's analyses through the year 1980, prior to the operational lifetime of Susquehanna 1 and 2, Petitioners contend that no probability analysis exists to justify the Applicant's and Staff's failure to address the full consequences to the plant and to the genetic and somatic health and the safety of the public and the full long-term costs of property damage of the design basis accident (including sensitivity analyses) and of accidents more severe than the design basis accident. Petitioners contend that no operating license for Susquehanna 1 and 2 should issue until the Applicant, Commonwealth, Luzerne County, Salem Township officials and any others sharing responsibility for public health and safety have prepared and tested — with drills that include participation of all of the potentially affected public — emergency preparedness and evacuation plans for the design basis accident and for worst-case (Class 9) accidents. Risk analysis is incomplete and inadequate to comply with NEPA and the Commission's mandate under the Atomic Energy Act of 1954, as amended, in the absence of full analysis of both the probability and consequences of worst-case accidents. The existing studies of disaster response are inadequate to demonstrate, in the absence of tests involving those who would be affected, the capability of emergency response and evacuation plans to provide the protection required for the public.

Two serious contradictions additionally inhibit the effective performance of the duties of the two parties having major responsibility for emergency notification of the public and for the protection of the public health in the event of a radiological emergency. First, the Applicant, through various public relations efforts and the communications media, has sought to convince those residing in the vicinity of Susquehanna that the plant poses no significant threat to the public health and safety, but has offered no verifiable foundation for such claims beyond the now-repudiated Reactor Safety Study. The Applicant is the initial source of information — and the only source of data — pertaining to the severity and scope of the radiological hazard following an accident at Suquehanna. In the early

stages of a accident, the Applicant may be unable or unwilling to ascertain that an offsite radiation hazard exists or will exist, and may be expected to avoid advising other responsible authorities and the public as long as the utility officials believe that emergency evacuation — detrimental to the utility company's interests — is not absolutely essential. Furthermore, the Applicant, having impressed upon the public the safety of its nuclear reactors and the alleged extremely low probability of a catastrophic accident, or other responsible officials may be unable to convince endangered residents of the necessity of emergency actions and evacuation.

A second contradiction inhibiting adequate emergency response lies in statements made by the Director of the Pennsylvania Office of Radiological Health, Mr. Thomas M. Gerusky. He has stated at a public meeting that his staff would not be able to respond at all hours to an accident at a nuclear facility. He has also, by affidavit, denied having made such a statement. Furthermore, the Office of Radiological Health has been unsuccessful in obtaining the amount of funding required to provide adequate qualified staff and equipment to be able to expand its capability to monitor and to respond to a radiation emergency situation at Susquehanna.

8. Petitioners contend that routine, or occasional, use of environmentally persistent or inadequately tested herbicides to maintain clearance of transmission line rights-of-way is a somatic, teratogenic, and potentially mutagenic threat to the health and safety of persons living near or traversing these areas.

9. The archeological investigation of the Applicant's upland site for the Susquehanna Station, hastily chosen following the 1972 flood caused by Hurricane Agnes, was incomplete and inadequate to determine the status of cultural antiquities in advance of the commencement of construction. Completion of archeological investigation in compliance with state and federal law governing protection of antiquities should precede further construction at the site. Petitioners believe the Board should require an independent review of the Applicant's archeological studies.

10. Petitioners assert that the Nuclear Steam Supply System (NSSS) of Susquehanna 1 and 2 contains numerous design deficiencies, some of which may never be resolvable, and which, when viewed together, render a picture of an unsafe nuclear installation which may never be safe enough to operate. The pressure suppression containment structure may not be constructed with sufficient strength to withstand the dynamic forces realized during blowdown. The reactor pressure vessel may not survive the thermal shock of cool ECCS water after blowdown without cracking. The cracking of stainless steel piping in BWR coolant water environments due to stress corrosion has yet to be prevented or avoided. BWR core spray nozzles occasionally crack, a problem which reduces their effectiveness. The

ability of Susquehanna to survive Anticipated Transient Without Scram (ATWS, see WASH-1270) remains to be demonstrated. For this ATWS issue, reliance on probabilistic numbers, as 10^{-7} per year, is unwise and unsafe. Overpressurization of the pressure vessel is a serious safety problem, especially in view of the underhanded and wholly inadequate method used to ensure that the ASME stamp was to be applied to nuclear pressure vessels. (See Proceedings of the Annual Winter Meeting, ASME, November 17-22, 1974, New York, N.Y., paper by A.J. Ackerman). Numerous problems remain with the adequacy of electrical cable penetrations of the containment structure. The reduced capability of Susquehanna to scram at the end of the fuel cycle due to control rod poison depletion aggravates all of the above problems, such that when all of these, and certainly others such as containment steel liner buckling problems that have not been specifically addressed here, are combined, the conclusion of an inadequate and obsolete design is obvious. (See, for general reference materials, NUREG-0138, NUREG-0153, among others).

11. Petitioners contend that excessive reliance on "single failure" events (i.e., see FSAR 6.3.2.5) leads to a false sense of security and certainty, especially when it is known that multiple failures occur (See testimony of Dr. David Okrent, ACRS, before the California Legislative Committee on Energy and Diminishing Resources, October 29, 1975, at p. 11. See also Joint Committee on Atomic Energy, U.S. Congress, Hearings entitled "Browns Ferry Nuclear Plant Fire, vol. 1, September 16, 1975).

12. Petitioners contend, when taken together and factored into lifetime monetary full cost determinations for Susquehanna, that plant decommissioning and ultimate dismantling and site decontamination, interim spent fuel storage and subsequent disposal, radioactive waste management and disposal at all stages of the nuclear fuel cycle, and health costs for the full period of toxicity of radioactive materials attributable to the operation of Susquehanna will render this nuclear facility economically non-competitive with virtually any of the many alternative sources of energy or with conservation. Absent national policy determinations, federal legislation, and administrative agency regulation of these issues, Petitioners contend that no operating license should issue for Susquehanna 1 and 2.

(Appendixes B through E have been omitted from this publication. They are available at the Commission's Public Document Room, Washington, D.C.).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC AND LICENSING APPEAL BOARD

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

In the Matter of **Docket No. 50-409 SC**

DAIRYLAND POWER COOPERATIVE
(La Crosse Boiling Water Reactor)

September 24, 1980

The Appeal Board summarily affirms the Licensing Board's denial of a motion for disqualification of that entire Board.

RULES OF PRACTICE: DISQUALIFICATION

Disqualification of a licensing board member may not be obtained on the ground that he or she committed error in the course of the proceeding at bar or some earlier proceeding.

RULES OF PRACTICE: DISQUALIFICATION

An administrative trier of fact is subject to disqualification only if he or she (1) has a direct, personal, substantial pecuniary interest in a result; (2) has a "personal bias" against a participant; (3) has served in a prosecutive or investigative role with regard to the same facts as are in issue; (4) has prejudged factual — as distinguished from legal or policy — issues; or (5) has engaged in conduct which gives the appearance of personal bias or prejudgment of factual issues. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-101, 6 AEC 60, 65 (1973).

DECISION

This is a show cause proceeding involving the outstanding provisional operating license for the La Crosse nuclear power facility. On August 19, 1980, Frederick M. Olsen, III, then a petitioner for intervention in the proceeding,[1] moved to disqualify the entire Licensing Board which had been assigned by Commission order[2] to conduct it. On September 19, 1980, that Board denied the motion and, as required by 10 CFR 2.704(c), referred its action to us for review.

On an examination of the papers filed below for or against the disqualification motion, we conclude (1) that there is no necessity to call for further submissions to us; and (2) that the motion is patently without substance. We therefore affirm summarily the ruling below.

1. The three members of this Licensing Board were also assigned to the separate and distinct proceeding involving the application for an amendment to the La Crosse provisional operating license to enable an expansion of the capacity of the facility's spent fuel pool.[3] The sole basis offered for seeking their disqualification here is that they had mishandled that proceeding. In this connection, Mr. Olsen complains principally of their failure to have required the development of a full evidentiary record on certain matters which he maintains were relevant to the disposition of the license ammendment application. This asserted failure is said to "have caused a complete and total loss-of-faith in the Board's ability to consider evidence and render a decision that is in the public interest as specified in the Atomic Energy Act of 1954".[4]

2. We need not now pass upon whether there is substance to Mr. Olsen's charge.[5] As the Board below correctly observed in denying the motion, the disqualification of a licensing board member may not be obtained on the ground that he or she committed error in the course of the proceeding at bar or some earlier proceeding. Rather, an administrative trier of fact is subject to disqualification only

[1]We understand that Mr. Olsen's intervention petition was recently granted and therefore he now is a party to the proceeding.

[2]The order was entered on July 29, 1980. See 45 FR 52290 (August 6, 1980).

[3]See LBP-80-2, 11 NRC 44 (1980).

[4]Motion, at 3.

[5]Not being a party to the spent fuel pool proceeding, Mr. Olsen could not appeal from the initial decision rendered therein (LBP-80-2, fn. 3, *supra*). See 10 CFR 2.762(a). Although the NRC staff did file an exception to that decision, it related to an entirely discrete Licensing Board determination. We have not as yet acted on the exception or completed the review on our own initiative of the decision as a whole.

if he has a direct, personal, substantial pecuniary interest in a result; if he has a "personal bias" against a participant; if he has served in a prosecutive or investigative role with regard to the same facts as are in issue; if he has prejudged factual — as distinguished from legal or policy — issues; or if he has engaged in conduct which gives the appearance of personal bias or prejudgment of factual issues.

Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-101, 6 AEC 60, 65 (1973).

Mr. Olsen has not alleged, let alone established, the existence of any facts which might conceivably satisfy any of those tests. In this connection, it is long settled that "[t]o establish that a hearing was biased, something more must be shown than that the presiding officials decided matters incorrectly; to be wrong is not necessarily to be partisan." *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 246 (1974), citing *Tennessee Valley Authority* (Bellefonte Nuclear Plant, Units 1 and 2), ALAB-164, 6 AEC 1143 (1973).[6]

Affirmed.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Mr. Moore did not participate in the consideration or disposition of this matter.

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[6]In his response below to the applicant's and staff's oppositions to his disqualification motion, Mr. Olsen stressed that the motion had not asserted that the Licensing Board was biased but, rather, had only questioned the "ability" of its members. He went on to suggest, however, that bias nonetheless might be inferred from the Board's purported lack of expedition in the conduct of both the spent fuel pool proceeding and another (still-pending) proceeding involving the conversion of the La Crosse provisional license to a full-term operating license. (In this regard, Mr. Olsen took note of the Board's statement in an August 5, 1980 order that the instant show-cause proceeding would be completed with dispatch).

Leaving aside the fact that the disqualification motion itself made no such claim, we find wholly insufficient cause for indulging in Mr. Olsen's assumption that the various *La Crosse* proceedings have been given disparate treatment for the applicant's benefit. There are, of course, many legitimate — and indeed often compelling — reasons why one proceeding will move forward more rapidly than another. And, as the Board below noted in its August 5 order, the Commission's July 29 order (see fn. 2, *supra*) conveys the message that there is to be expeditious disposition of the issues presented in this proceeding.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of **Docket No. STN 50-488**
50-489
50-490

DUKE POWER COMPANY
(Perkins Nuclear Station,
Units 1, 2 and 3) **September 29, 1980**

The Appeal Board affirms the Licensing Board's denial of an unitmely petition to intervene.

RULES OF PRACTICE: NONTIMELY INTERVENTION PETITIONS

A nontimely petitioner seeking to intervene in a licensing proceeding must address each of the five factors set forth in 10 CFR 2.714(a) and affirmatively demonstrate that a balancing of the factors favors permitting his tardy admission to the proceeding.

APPEARANCES

Mr. David Springer, Mocksville, North Carolina, appellant *pro se.*

Mr. J. Michael McGarry, III, Washington, D.C., for the applicant, Duke Power Company.

Mr. Charles A. Barth for the Nuclear Regulatory Commission staff.

DECISION

This construction permit proceeding involving the proposed Perkins nuclear facility was instituted by a notice of hearing published on July 19, 1974. 39 FR 26470. During the ensuing years, the Licensing Board has issued several partial initial decisions. See LBP-78-25, 8 NRC 87 (1978); LBP-78-34, 8 NRC 470 (1978); LBP-80-9, 11 NRC 310 (1980). In the last of these decisions, rendered on February 22, 1980, the Board below determined that there was no alternate site "obviously superior" to that chosen by the applicant for the location of the Perkins facility.[1] What transpired in the wake of the issuance of that decision is amply developed in ALAB-597, 11 NRC 870 (1980) and need not be detailed here.

Suffice it for present purposes to note that on April 15, 1980 — almost two months after the decision was handed down — David Springer filed a petition with the Licensing Board in which he sought leave to intervene in the proceeding (as well as certain allied relief).[2] Upon being expressly authorized by us to do so,[3] the Licensing Board proceeded to determine whether the petition should be granted despite its untimeliness.[4]

In an order entered on August 14, 1980, the petition was denied. Among other things, the Board pointed out (order, at p. 7) that "the petition [was] out of time in the extreme with no effort on the petitioner's part to address" the factors which, by virtue of 10 CFR 2.714(a),[5] must be weighed in

[1]The reasons why this question remained open at that late date were explained at the outset of the decision. 11 NRC at 311-312.

[2]This was the second occasion on which Mr. Springer (who assertedly owns property on the Yadkin River in the vicinity of the Perkins site) had attempted to enter the proceeding. His first intervention petition — filed in April 1977 (more than two and one-half years after the deadline specified in the notice of hearing) — had been denied below as untimely. On his appeal, we had affirmed that denial. ALAB-431, 6 NRC 460 (1977).

At about the same time, we dismissed an appeal taken by Mr. Springer (as a nonparty) from the denial below of his motion to dismiss the proceeding. ALAB-433, 6 NRC 469 (1977).

[3]ALAB-597, *supra*, 11 NRC at 872.

[4]The staff had raised a question respecting the Board's authority to act upon the petition in light of the fact that Mr. Springer's principal purpose in seeking intervention at this very late date was to obtain further consideration below of the alternate site issue decided in the February 22 partial initial decision.

[5]See p. 352, *infra*.

passing upon a late petition. Mr. Springer now appeals from that order.[6]

A. Not long ago, we took the "occasion to stress anew the imperative necessity that *all* participants in NRC adjudicatory proceedings — whether lawyers or laymen representing themselves or organizations to which they belong — familiarize themselves at the outset with" the Commission's Rules of Practice. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-609, 12 NRC 37, 38 fn. 1 (August 25, 1980). "By doing so", we went on to observe, "participants will both (1) enhance their ability to protect adequately the rights of those they represent; and (2) avoid the waste of time and resources which inevitably accompanies the taking of action forbidden by the Rules". *Ibid.* The papers filed by Mr. Springer graphically illustrate the point.

The Rules of Practice are most explicit in establishing the criteria by which late intervention petitions must be judged. Section 2.714(a), 10 CFR 2.714(a), provides that such a petition "will not be entertained absent a determinaton by [the Licensing Board] that [it] should be granted based upon a balancing of the following factors...."

(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 represented by existing parties.

(v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

Needless to say, the late petitioner must address each of those five factors and affirmatively demonstrate that, on balance) they favor permitting his tardy admission to the proceeding. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975), *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-582, 11 NRC 239, 241-42 (1980); *Virginia Electric and Power Company* (North Anna Station, Units 1 and 2), ALAB-289, 2 NRC

[6]The appeal is opposed by both the applicant and the NRC staff. The applicant's passing suggestion that the appeal was untimely is without merit. Because the order below was served by mail on August 15, the appeal was due on the date filed (September 2). 10 CFR 2.714a, 2.710.

395, 398 (1975); *Project Management Corp.* (Clinch River Breeder Reactor Plant), ALAB-354, 4 NRC 383, 388-89 (1976). Yet, as the Licensing Board noted, Mr. Springer made no endeavor to shoulder that burden. Indeed, his petition was devoid of the slightest hint of a recognition that its fate hinged upon the Section 2.714(a) factors.[7]

Rather, what the Board was told in the petition and its supporting documents was (1) that the February 22 decision had been influenced by an allegedly deliberate misrepresentation by the NRC staff with regard to the position of the State of North Carolina on a crucial aspect of the alternate site inquiry; and (2) that all facts material to the inquiry had not been presented to the Licensing Board. It thus would appear that Mr. Springer was under the misapprehension that it is open to anyone to obtain entry into a proceeding after the issues have been decided by the trier of fact if that person believes the decision rested upon an incomplete or inaccurate record. But, had he consulted the Commission's intervention rule,[8] it would (or should) have become immediately obvious that, in order to press his complaints respecting the merits of the Licensing Board's decision and the underlying record, it was first necessary for him to acquire party status under the terms of the rule. In short, the intervention petition was patently deficient and, as such, a fit candidate for denial.

Nothing in Mr. Springer's appellate papers might induce us to overlook that fact. Our review of licensing board action on an intervention petition has to be based upon what had been presented to (and therefore taken into consideration by) that board. *Allens Creek,* ALAB-582, *supra,* 11 NRC at p. 242. In any event, Mr. Springer's brief to us does not come to grips with the Section 2.714(a) factors any more satisfactorily than did his peititon below. Instead, Mr. Springer's papers perpetuate the erroneous view that no obstacles stand in the path of his endeavor to mount an attack upon the treatment below of the alternate site issue.

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[7]The same may be said of the affidavit and brief filed below by Mr. Springer in support of the petition (on May 22 and August 6, 1980, respectively). Although the brief was divided into two sections — one adressed to "substantive issues" and the other to "procedural issues" — no mention was made in either of Section 2.714(a) or its requirements.

Although appearing *pro se,* it is our understanding that Mr. Springer is a lawyer. See ALAB-431, *supra,* 6 NRC at 464.

[8]*I.e.,* Section 2.714(a).

B. For the above reasons, Mr. Springer's appeal must fail. It is worthy of note, however, that a total of 102 exceptions to the February 22 partial initial decision have been filed by intervenors Mary Apperson Davis, *et al,* and currently await briefing. A cursory examination of those exceptions discloses that they are far-reaching in scope and embrace, *inter alia,* all of the matters which Mr. Springer now would raise himself were he clothed with party status. (In this connection, the intervenors unsuccessfully moved the Licensing Board either to reconsider the February decision or to reopen the record. The motion was explicitly based upon the contents of Mr. Springer's intervention petition and supporting affidavit). Thus, if briefed by the intervenors,[9] those matters will receive the same attention on appellate review as would have been accorded them had Mr. Springer demonstrated an entitlement to intervention.

Insofar as it denied Mr. Springer's untimely petition for leave to intervene, the August 14, 1980 order of the Licensing Board is *affirmed.*

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

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[9]See *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 744 (1977), and cases there cited.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Herbert Grossman, Chairman
Dr. Oscar H. Paris
Frederick J. Shon

In the Matter of **Docket No. 50-155-0LA**
(Spent Fuel Pool Expansion)

CONSUMERS POWER COMPANY
(Big Rock Point Nuclear Plant)

September 12, 1980

The Licensing Board (1) rules that Section 102(2)(C) of the National Evnironmental Policy Act (NEPA) requires the preparation of an environmental impact statement for a license amendment authorizing modification of a spent fuel pool where the licensed facility in question has never been subject to a previous NEPA review and the license amendment is necessary to continued operation of the plant, and (2) refers its ruling to the Appeal Board pursuant to 10 CFR 2.730(f).

NEPA: ENVIRONMENTAL IMPACT STATEMENT

NEPA may not be applied retroactively. Consequently, the NRC may not require the preparation of an environmental impact statement with regard to the continuation of an operating license issued before the effective date of NEPA.

NEPA: ENVIRONMENTAL IMPACT STATEMENT

The prohibition against the retroactive application of NEPA does not preclude the preparation of an environmental impact statement where a new federal action is needed to enable a private project initiated prior to the effective date of NEPA to be completed.

NEPA: SCOPE OF REVIEW

NEPA does not require duplicative environmental reviews for every major Federal action. Where a proposed action has already been environmentally reviewed (albeit in a different context), it need not be environmentally reviewed again except for those significant incremental effects over what has already been reviewed.

NEPA: ENVIRONMENTAL IMPACT STEATEMENT

Where a Federal action is necessary to enable a licensee to utilize a greater term of its license than would otherwise be possible, such action has a significant effect upon the environment which must be reviewed under Section 102(2)(C) of NEPA.

NEPA: ENVIRONMENTAL IMPACT STATEMENT

Where an environmental impact statement is required in conjunction with a license amendment for a plant licensed prior to the effective date of NEPA, the statement is confined to the incremental environmental effects that would result if the amendment were approved. Such incremental effects include the environmental effects caused by increase in the term of plant operation afforded by the license amendment.

MEMORANDUM AND ORDER ON NEPA REVIEW

Intervenor John O'Neill's Contention VIII, in addition to requesting a review of general plant safety, contended that the granting of the license amendment to expand the spent fuel pool would permit the plant to operate past the year 1981, that the plant produces very little electricity compared to modern nuclear generators, and that the closing of the plant would not cause great hardship. At the special prehearing conference held on December 5, 1979, Mr. O'Neill further contended (Tr. 215-216) that, under a cost-benefit analysis, the closing of the plant would not cause undue hardship because it produced little and expensive power which could easily be replaced.

The Licensee objected to this contention (Tr. 217) on the ground that what is being considered for licensing is not continued plant operation, but rather an expansion of the spent fuel pool which may not have a significant environmental impact. The Licensee pointed out (*Ibid.*) that the Staff is expected to issue an environmental impact assessment indicating that the proposed pool expansion does not have a significant environmental impact,

so that the alternative of shutting down the plant need not be considered. The Staff also objected (Tr. 214, 216) on the ground that the contention was outside of the scope of the proceeding.

In its Order Following Special Prehearing Conference, the Board deferred ruling on this contention. It indicated that it expected, as did Licensee, that the Staff would issue a "negative declaration" stating that an Environmental Impact Statement containing a cost-benefit analysis need not be prepared because the proposed amendment does not significantly affect the quality of the human environment. Nevertheless, the Board was not satisfied that the prospective issuance of a negative declaration would resolve the issue of whether, in this case, a cost-benefit analysis or other weighing of the need for power is required. It referred the parties to the January 10, 1980 Initial Decision in *Dairyland Power Cooperative* (LaCrosse Boiling Water Reactor), LBP-80-2, 11 NRC 44, 65-77, which held, *inter alia,* that the Licensing Board in the spent fuel pool expansion proceeding had jurisdiction to consider the need for the power generated by the reactor under Section 102(2)(E) of NEPA, 42 USC Section 4332(2)(E). The Board requested that the parties brief the following question:

> Where the facility has never been subjected to National Environmental Policy Act of 1969 (NEPA) review because it was licensed before NEPA, does a license amendment which would permit the continued operation of the facility either require or permit considering a cost-benefit analysis or the need for power in the license amendment proceeding notwithstanding that the staff may issue a negative declaration?

In responding to the Board's question, the parties assumed, as suggested by the question, that the Staff would issue an environmental impact assessment, accompanied by a negative declaration in the usual form issued in other spent fuel pool expansion proceeding, stating that an Environmental Impact Statement need not be prepared. Intervenor John O'Neill contended (Response, at pp. 2, 6-7) that Section 102(2)(C) of NEPA is applicable to the requested license amendment primarily upon the grounds that questions involving the storage and disposal of nuclear waste pose serious concerns for the health and environment that should be considered with this proposed license amendment, notwithstanding that the generic aspects of nuclear waste disposal can be considered in a comprehensive proceeding, and the spent fuel pool modification is the only way that the plant could continue to operate. He also argued (at pp. 3-4) on the basis of *LaCrosse,* LBP-80-2, *supra,* and other cases that Section 102(2)(E) imposes a duty to develop and explore alternatives, even where the preparation of an Environmental Impact Statement is not required.

Intervenors Christa-Maria, *et al.* assumed that the expected negative declaration by the Staff would be valid and that Section 102(2)(C) would

not apply here. They argued, however, for the reasons stated in *LaCrosse, supra,* that Section 102(2)(E) does apply and would require a discussion of alternative uses of available resources. As factual support for requesting a balancing of costs against benefits, Christa-Maria, *et al.* (Response, at p. 5) and O'Neill (Response, at p. 7) alleged that the power produced by Big Rock represents only approximately one percent of the generating capacity of Consumers Power Company's total output, which allegedly contains a reserve margin of 37 or 38 percent.

The Staff and Licensee opposed the application of either section of NEPA to this license amendment on the ground that courts have consistently held that NEPA is not to be applied retroactively. (Staff, at p. 12; Licensee, at p. 13). The effective date of NEPA was January 1, 1970, and the full-term operating license was issued for the Big Rock Plant in 1962, more than seven years prior to that date. They also argued that a spent fuel pool expansion which does not significantly affect the quality of the human environment, as allegedly was determined in a number of cited cases, would preclude the application of both Sections 102(2)(C) and 102(2)(E) to the license amendment, contrary to the determination in *LaCrosse, supra.* (Staff, at pp. 8-10; Licensee at pp. 14-19).

The Staff and Licensee cautioned against distinguishing *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979) and *Northern States Power Company* (Prairie Island Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41 (1978), *remanded on other grounds, sub nom. State of Minnesota* v. *NRC,* 602 F.2d 412 (D.C. Cir. 1979) (see discussion, *infra*), which held that an environmental assessment need not be made in spent fuel pool expansion proceedings, from the instant case merely because Environmental Impact Statements had been prepared before the issuance of those plants' operating licenses. In arguing against distinguishing *Trojan, supra,* and *Prairie Island, supra,* from this proceeding, the Staff (at p. 6) relied primarily upon the positions that the Big Rock Point plant had already been licensed to operate, NEPA is not retroactive, and Big Rock should stand in the same position as a later licensed facility for which NEPA was applicable. The Licensee (at pp. 7-11) relied primarily upon the argument that the *Trojan* and *Prairie Island* opinions delimited the scope of spent fuel pool proceedings to exclude environmental reviews, and should not be viewed merely as applying the doctrines of *res judicata* or collateral estoppel so as to exclude relitigation of the environmental issues that had already been considered at the operating license proceeding.

The Staff and Licensee also raised numerous arguments for disagreeing with the Licensing Board's application of Section 102(2)(E) to a spent fuel pool proceeding in *LaCrosse,* and for distinguishing the facts in *LaCrosse* from those in the instant case so that Section 102(2)(E) would not be

applicable to this proceeding even if the *LaCrosse* Licensing Board were correct.

We hold that Section 102(2)(C) of NEPA applies to the proposed license amendment before us, and that it requires the preparation of an Environmental Impact Statement. Because that section is more comprehensive than Section 102(2)(E) and includes all of the requirements of the latter section, we consider it unnecessary to determine whether, if Section 102(2)(C) were not to apply, Section 102(2)(E) would apply in any event.

OPINION

I

A Full Environmental Review Would Not Violate the Prohibition Against a Retroactive Application of NEPA

It is beyond dispute that NEPA may not be applied retroactively and if this Board were to require the preparation of an Environmental Impact Statement with regard to the continuation of Licensee's operating license, it would be acting directly contrary to the mandate of the statute and established judicial precedent. *See, e.g., Olivares* v. *Martin,* 555 F.2d 1192, 1197 (5th Cir. 1977); *Pennsylvania Environmental Council* v. *Bartlett* 454 F.2d 63, 624 (3rd Cir. 1971). Nor can we consider the continuous operation of the plant under the license granted by the NRC (in 1962, the AEC) as an ongoing Federal project which requires constant reevaluation to determine whether it should continue as, for example, in *Environmental Defense Fund* v. *T.V.A.,* 468 F.2d 1164 (6th Cir. 1972) and *Arlington Coalition on Transportation* v. *Volpe,* 458 F.2d 1323 (4th Cir. 1972). NRC licensing does entail continuous Federal monitoring, but a review of environmental impacts is required only when significant changes are contemplated. We must recognize the distinction made in *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 542 (1977), between a continuing project of the Federal Gorvernment, which Big Rock is not, and that of a private party which has received a Federal license and now asks for further approval of a discrete license amendment.

On the other hand, we do not perceive the issue before the Board as pertaining to the continuation of the Licensee's operating license or its right to utilize that license for the full operating term, which would make the prohibition against retroactive application of NEPA applicable to this proceeding. Rather, we view the proposal that the NRC grant a license amendment to permit expansion of the spent fuel pool as requiring a new Federal action for the sole purpose of enabling Licensee to make a fuller utilization of its operating license than it could otherwise. When Consumers

Power Company was granted the operating license in 1962, it was given the right to operate for the full term if it were able, but it was not given a guarantee that our predecessor, the Atomic Energy Commission, would take every step necessary to see that the Licensee had the full ability to utilize that operating license over the full term.[1]

We cannot overlook the sole purpose for and the practical effect of the Federal approval sought: expansion of the spent fuel pool to enable Licensee to operate beyond the year 1981, when it otherwise would have to cease operation unless it could find another means of storing spent fuel, to the year 1990. We see this situation, in which a new Federal action is required to enable a private party to complete a project intitiated prior to the effective date of NEPA, as similar to *Minnesota Public Interest Research Group* v. *Butz, 498* F.2d 1314 (8th Cir. 1974), *stay denied,* 429 U.S. 935, *cert. denied,* 430 U.S. 922, in which an Environmental Impact Statement was required for the Forest Service to make changes in contracts for timber sales after the effective date of NEPA, even though the project encompassing those sales was approved and initiated pre-NEPA. In another case which held that Section 102(2)(C) of NEPA applies to an individual Federal action occurring after the effective date of NEPA even though the entire project had been approved prior to NEPA, *Jicarilla Apache Tribe of Indians* v. *Morton,* 471 F.2d 1275, 1282 (9th Cir. 1973), the Court stated, "It is clear that NEPA applies to all major Federal actions taken subsequent to January 1, 1970, regardless of whether the project with which the particular major action is associated was intitiated prior to the effective date of NEPA." Also *see, Hart* v. *Denver Urban Renewal Authority,* 551 F.2d 1178 (10th Cir. 1977).

We see a clear distinction between the action proposed, whose sole and direct effect would be to continue the operations of the plant, and a license amendment intended to remedy a defect in operations, which may only indirectly affect the plant's ability to operate over a longer term. In this case, the impact to be environmentally appraised includes the additional term of operation; in the latter instance, it might include only the change in the manner of operation, which may not have a significant effect on the environment.

[1]We do not make this statement without some misgivings. The understanding in the nuclear industry, which was fostered and encouraged by the A.E.C., was that spent fuel discharged from reactors would be disposed of off-site and need not be provided for in the design of the plant. *See,* Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, 40 FR 42801 (1975). Were we able to read that understanding as a commitment on the part of A.E.C. to approve all reasonable means for disposing of spent fuel as part of the operating license granted in 1962, we might decide the question before us differently.

II

An Environmental Review is not Excluded from the Scope of This Proceeding

We do not disagree with Licensee's position that *Trojan* and *Prairie Island* define the proper scope of a spent fuel pool proceeding and did not merely apply *res judicata* or collateral estoppel principles, but we cannot reach the same conclusion as Licensee that the scope of a spent fuel pool proceeding may not include an environmental review even where none had been held previously. That conclusion appears to us to contradict the emphasis placed by the Appeal Board in *Prairie Island* and *Trojan* on the full environmental reviews that had preceded the issuance of the operating licenses for those facilities. The Appeal Board concerned itself only with determining whether there had been "significant environmental consequences *beyond those previously assessed.*" (Emphasis added). *Prairie Island, supra,* 7 NRC, at p. 46 fn. 4; *Trojan, supra,* 9 NRC, at p. 266 fn. 6.

We view the Appeal Board's exclusion of an Environmental Impact Statement in those proceedings as being based merely upon the principle that NEPA does not require the preparation of duplicative environmental reviews for every major Federal action. As stated by the Appeal Board (*Ibid.*), "Nothing in NEPA or in those judicial decisions to which our attention has been directed dictates that the same ground be wholly replowed in connection with a proposed amendment to those 40-year operating licenses." *See also, Calvert Cliffs Coordinating Committee* v. *AEC,* 449 F.2d 1109, 1118, 1128 (D.C. Cir. 1970). In *Prairie Island* and *Trojan,* even though the proposed spent fuel pool expansion would have permitted a greater use of the operating license than previously, the granting of the license had been preceded by an environmental review that assumed that the license would be utilized over the full term. When the NRC was requested to approve the amendment which would have the practical effect of permitting the fuller utilization of the operating license than the current situation otherwise permitted, no further review was necessary because the operation of the plant during the full term of the license had already been assessed. Here, because no environmental review was made at the time of the granting license, there would be no duplication, and the Federal action sought, for the sole purpose of permitting a fuller utilization of the license, must be assessed.

III

A Spent Fuel Pool Modification Which Allows a Much Greater Term of Plant Operation has a Significant Effect on the Environment

A more troublesome question in our estimation than that of retroactivity is the Staff's assertion (at pp. 8-9) that other licensing boards have already found that a proposed spent fuel pool expansion would not significantly affect the quality of the human environment, citing *Commonwealth Edison Company* (Zion Station, Units 1 and 2), LBP-80-7, 11 NRC 245 (1980); *Portland General Electric Company* (Trojan Nuclear Plant), LBP-78-32, 8 NRC 413, 449-450 (1978), *aff'd,* ALAB-531, *supra; Duquesne Light Company* (Beaver Valley Power Station, Unit 1) LBP-78-16, 7 NRC 811, 816 (1978); *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), LBP-77-51, 6 NRC 265, 268 (1977), *aff'd,* ALAB-455 *supra.*

Contrary to the Staff's assertion, we do not read these cases as determining that the proposed action would not significantly affect the human environment, but rather read them as determining that there would be no significant effect *other than that which had already been assessed in an Environmental Impact Statement.* Each of those proceedings involved a facility that had been subjected to a NEPA review prior to the granting of the operating license. The negative declaration in *Zion,* which we assume to be typical, stated, *inter alia* (11 NRC, at p. 248):

> We have determined that the proposed license amendment will not significantly affect the quality of the human environment and that there will be no significant environmental impact attributable to the proposed action *other than that which has already been predicted and described in the Commission's Final Environmental Statement for the facility dated December 1972.* [Emphasis added].

As discussed above, NEPA does not require duplicative environmental analyses. Where the effect of the proposed action has already been environmentally reviewed, albeit in the context of another major Federal action such as the granting of an operating license, it need not be reviewed again. The only thing that must be reviewed is the incremental effect of the proposed action over what had already been reviewed if that increment has a significant effect upon the human environment. *See, for example,* the Appeal Board's statement in *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), ALAB-291, 2 NRC 404, 415 (1975), quoted with approval in *Detroit Edison Company* (Enrico Fermi Atomic Power Plant, Unit 2), LBP-78-11, 7 NRC 381, 393 (1978):

> It will not be the [Licensing] Board's function ...in passing upon the permit amendment applications...to embark broadly upon a fresh assessment of the environmental issues which have already been thoroughly considered and which were decided in the initial decision. Rather, the Board's role in the environmental sphere will be limited to assuring itself that the ultimate NEPA conclusions reached in the initial decision are not significantly affected by...new developments....

See, also, the discussion *Natural Resources Defense Council* v. *Administrator,* 451 F. Supp. 1245, 1259-60 (D.C. 1978), regarding the need to supplement a programmatic impact statement with a follow-up site-specific statement only when the site-specific factors have significant environmental impacts not adequately evaluated in the programmatic statement.

The only case we have found that actually holds that an Environmental Impact Statement need not be prepared for a spent fuel pool expansion because Section 102(2)(C) does not apply, even though there had never been an Environmental Impact Statement prepared for that facility, is *LaCrosse, supra.* In that case, however, unlike the instant proceeding, the proposed spent fuel pool expansion would not have resulted in a further operation of the facility over a lengthy term of the operating license. The facility was operating under a provisional operating license whose term had already expired and was involved in a proceeding initiated with regard to its application for a full-term license, the issuance of which would have to be preceded by a full Environmental Impact Statement. Consequently, the granting of the spent fuel modification would have permitted the facility to continue its operations only on a tentative basis until the Environmental Impact Statement was prepared and reviewed. We cannot quarrel with the Licensing Board's conclusion in that case, that the action approving the facility's ability to operate on that tentative basis would not have a significant effect upon the environment. Here, however, we are faced with a modificaton that is sought to enable the facility to operate for a further term of ten years, which we consider will have a significant impact upon the environment, without an assessment of that impact having ever been made.

In summary, we do not question Licensee's right to operate under the operating license granted prior to the effective date of NEPA without having been environmentally reviewed. However, to the extent that we are asked to approve a Federal action granting a license amendment for the sole purpose of enabling Licensee to utilize a greater term of the license than would otherwise be possible, we consider the action to have a significant effect upon the environment which must be environmentally

reviewed under Section 102(2)(C).[2] If such review were to result in a determination that the costs of continued operation over that greater term outweigh the benefits, Licensee's operating license would still be intact and Licensee could continue to operate even over the full term if it could find some manner to operate within the terms of the license that does not require a further major Federal action. As stated by the Licensing Board in *LaCrosse, supra,* at p. 80:

> All that an adverse decision in this SFP [spent fuel pool] proceeding could or should do is to prevent the Applicant from undertaking the SFP modification. If DPC [Applicant] found an alternate method of disposing of its spent fuel, an adverse decision in this proceeding could not prevent it from continuing to operate.

IV

The Big Rock Plant does not Stand in the Same Position as an Environmentally Reviewed Post-NEPA Facility.

We do not dispute the Staff's assertion (at p. 7) that it "must take the environment as it finds it" in reviewing Licensee's application for the spent fuel pool modification, and that the environment "presently includes an operating nuclear plant." However, that principle does not lead us to the conclusion, as it does the Staff (at p. 6), that "Big Rock stands in the same position as a later-licensed facility for which NEPA was applicable" making the preparation of an Environmental Impact Statement unnecessary. For reasons already given, we believe that Big Rock should be distinquished from *Prairie Island* and *Trojan.* As the Court said in *Minnesota Public Interest Research Group* v. *Butz, supra,* 498 F.2d 1320, "the threshold decision as to whether or not to prepare an EIS should be reviewed...on the grounds of its reasonableness." We consider it reasonable and consistent with law and national policy for Staff to prepare an Environmental Impact Statement in this case.

While the principle of nonretroactive application of NEPA permits Big Rock to maintain its operating license without undergoing an environmental review, it does not create a presumption that Big Rock would have been favorably assessed if an environmental review had been made. There is no basis for suggesting that a prospective environmental review of Licensee's

[2]It is well-established that operation of a nuclear power plant has a significant effect upon the human environment. *See, e.g., Calvert Cliffs, supra,* 449 F.2d at 1129; *Izaak Walton League of America* v. *Schlesinger,* 337 F. Supp. 287 (D.C. 1971). In the Board's opinion, making such operation possible for a period of ten years clearly constitutes a major Federal action and obviates the need to await the Staff's recommendation on this point.

operations during the remaining term of its operating license could be in any manner duplicative of an environmental assessment that was not prepared before the granting of the operating license because it was not required.

V

A NEPA Review Must Consider Only the Incremental Environmental Impacts

We agree with the Staff's further conclusion (at p. 18) that the "Licensing Board [and the Staff] must only look at the increase in the environmental impacts' from the proposed action, which the Staff also refers to (*Ibid.*) as "the incremental effects of the increase on the already existing impact of plant operation." But, a realistic view of the incremental effect must take into account the increase in the term of operation that would be afforded by the proposed amendment. We cannot conceive of any grounds for requiring the environmental review to consider either the environmental cost of constructing the plant (which already exists) or the operation of the plant to the extent that it would continue without the spent fuel pool modification.

Nor, for that matter, can we permit the review to consider the environmental impact of maintaining the reactor site as a nuclear waste disposal site after the expiration of the license term, as intervenor John O'Neill proposes (at pp. 2-3). That position had been advanced with regard to the spent fuel pool expansion involving the Prairie Island and Vermont Yankee nuclear plants (*see, Prairie Island,* ALAB-455, *supra,*). On appeal to the Court of Appeals for the District of Columbia in *State of Minnesota* v. *N.R.C.* 602 F.2d 412 (1979), the Circuit Court refused to vacate or revoke the facility licenses. However, it remanded the matter to the Commission to consider whether an off-site storage solution for nuclear waste will be available by the years 2007-2009, the expiration dates of the licenses of the Vermont Yankee and Prairie Island plants, and, if not, whether that waste can be stored at the sites beyond those years, until an off-site solution becomes available.

In response to that decision, the Commission has issued a Notice of Proposed Rulemaking regarding the Storage and Disposal of Nuclear Waste (44 FR 61373 (Oct. 25, 1979)), in which it decided that that issue should not be addressed in individual licensing proceedings. It determined, however, that all licensing proceedings now underway will be subject to whatever final determinations are reached in its rulemaking proceeding. Under that Notice, this Board does not have the authority to consider, or to order the Staff to consider, any of the environmental impacts that might be

associated with the storage of spent fuel beyond the expiration of the operating license.

CONCLUSION

IT IS SO ORDERED that the Staff prepare an Environmental Impact Statement pursuant to Section 102(2)(C) of NEPA, covering the environmental impacts of an expanded spent fuel pool and the additional term of operation of the facility that such expansion would permit. We further *admit intervenor O'Neill's Contention VIII,* restated by the Board, as follows:

"An environmental review of the proposed spent fuel pool expansion is necessary under Section 102(2)(C) of NEPA and would indicate that the environmental costs of this expansion exceed the benefits." Discovery on that contention is not to begin until the Staff has prepared its Draft Environmental Statement.

The rulings contained in this Memorandum and Order are referred to the Appeal Board pursuant to 10 CFR 2.730(f).

BY ORDER OF THE BOARD

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Herbert Grossman, Chairman

Dr. Oscar H. Paris, Member

Frederick J. Shon, Member

Dated at Bethesda, Maryland
this 12th day of September, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. George C. Anderson
Ralph S. Decker

In the Matter of **Docket No. 50-409-SC**
Provisional OL DPR-45

DAIRYLAND POWER COOPERATIVE
(La Crosse Boiling Water Reactor)

September 30, 1980

The Licensing Board (1) explains the basis for its earlier ruling which granted petitioners' hearing requests in this show-cause proceeding; and (2) certifies to the Appeal Board the question of the Licensing Board's authority to determine, in connection with the need for a site dewatering system, the size of the safe shutdown earthquake the effects of which the facility must be designed to withstand.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Absent a formal proceeding, the NRC staff has authority to rescind or modify or reach a compromise with respect to a show-cause order. But once a notice of opportunity for hearing has been published and a request for a hearing has been submitted, the decision whether a hearing is to be held no longer rests with the staff but instead is transferred to the Commission or an adjudicatory tribunal designated to preside over the proceeding.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

In order to be admitted as a party to a show-cause proceeding, a petitioner must first demonstrate that it has an interest which may be affected by the proceeding — *i.e.,* that it has standing to participate. The

Commission applies judicial concepts of standing, in enforcement as in other licensing proceedings.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

To satisfy the test for standing in a show-cause proceeding, a petitioner must demonstrate that the outcome of the proceeding threatens one or more of its interests arguably protected by the statute being administered.

RULES OF PRACTICE: STANDING TO INTERVENE

A petitioner which is an organization may meet the "injury-in fact" requirement by demonstrating injury to one or more of its members. But to establish such representative standing, the organization must identify one or more members and demonstrate how those members may be injured by the outcome of the proceeding.

RULES OF PRACTICE: STANDING TO INTERVENE (SHOW-CAUSE PROCEEDING)

Within the narrowed scope of issues which can be heard in a show-cause proceeding, no more stringent standing requirements are imposed in show-cause proceedings than in proceedings involving license applications. For example, a petitioner who resides or is employed in geographic proximity to a reactor site, and who has expressed concerns over reactor safety or environmental impact, can be fairly presumed to have an interest which might be affected by construction or operation of a reactor. Similarly, close proximity, standing alone, is enough to establish the requisite interest in a show-cause proceeding involving safety questions.

RULES OF PRACTICE: CONTENTION REQUIREMENT FOR INTERVENTION

For a petitioner to be admitted to a proceeding, it must assert at least one viable contention. 10 CFR 2.714(b).

TECHNICAL ISSUES DISCUSSED:

Seismic design criteria; 10 CFR Part 100, Appendix A; safe shutdown earthquake (determining magnitude).

PREHEARING CONFERENCE ORDER GRANTING REQUESTS FOR A HEARING AND CERTIFYING QUESTION TO APPEAL BOARD

On September 11, 1980, a prehearing conference was held in La Crosse, Wisconsin, to consider hearing requests with respect to the show-cause order issued by the NRC Staff on February 25, 1980.[1] That order directed Dairyland Power Cooperative (Licensee) to show cause why it should not submit a detailed design proposal for a site dewatering system to preclude the occurrence of liquefaction under certain conditions, and why it should not make such system operational no later than February 25, 1981. The order, which was published in the *Federal Register* of March 3, 1980 (45 FR 13850), provided an opportunity for the Licensee and other interested persons to request a hearing.

Timely requests for a hearing were received from Mr. Frederick M. Olsen III, a resident of La Crosse, Wisconsin, and from the Coulee Region Energy Coalition (CREC), an organization headquartered in La Crosse which is actively participating in the on-going full-term operating license proceeding involving the La Crosse reactor and which also actively participated in the recent spent-fuel-pool expansion proceeding involving this reactor. In addition, the Licensee submitted a detailed answer to the show-cause order which, it claimed, satisfied the order; it requested a hearing if the Staff should not agree with its answer.

By Order dated July 29, 1980, the Commission delegated to this Licensing Board the authority to consider and rule on the requests for a hearing and, if we determined a hearing is required, to conduct an adjudicatory hearing.[2] By Memorandum and Order dated August 5, 1980, we invited the Licensee and NRC Staff to respond to the hearing requests of Mr. Olsen and CREC. (We stated that no response to the Licensee's petition was necessary inasmuch as, should the Staff continue to believe that a site dewatering system should be designed and installed, the Licensee would have a right to a hearing under 10 CFR 2.202(c)).

In its August 29, 1980 response, the NRC Staff changed its position and indicated that it no longer believed that the design and installation of a site dewatering system was necessary to protect the health and safety of the public. That response included a copy of a letter from the Director, Office of Nuclear Reactor Regulation, NRC, to the Licensee indicating that

[1]The conference was first announced by our Memorandum and Order of August 5, 1980. Notice of the time and location of the conference was issued on August 22, 1980 and was published in the *Federal Register* of August 28, 1980 (45 FR 57613).

[2]The Order was published at 45 FR 52290 (August 6, 1980).

Dairyland had "shown adequate cause" why it should not design and install a site dewatering system. In making this finding, the Staff made moot the Licensee's conditional hearing request. The Staff also claimed that the showings of interest or standing advanced by CREC and Mr. Olsen were each deficient, but it recommended that the petitioners be provided an opportunity to amend their requests for a hearing to cure the deficiencies. The Licensee took the position that, as a result of the change in the Staff's position, both hearing requests should be denied and the proceeding terminated forthwith.

The Licensee, the NRC Staff, CREC and Mr. Olsen each appeared at and participated in the prehearing conference. At that conference, we announced that CREC's and Mr. Olsen's requests for a hearing were granted, and that an expedited discovery schedule should be followed. The Board also raised an issue of its own (the size of the safe-shutdown earthquake (SSE) to be considered in this proceeding) and, at the Licensee's request, agreed to certify to the Appeal Board the question whether we could hear that issue in this show-cause proceeding. In this opinion, we will deal in Part I with our reasons for granting the hearing requests. Part II includes our certification to the Appeal Board of the SSE question.

I.

A. Before considering the petitioners' standing, we turn first to the Licensee's argument that the proceeding should be terminated as a result of the Staff's change of position. The Licensee states that the concerns of the NRC Staff which prompted the show-cause order have been resolved; that it has "shown cause" to the satisfaction of the NRC Staff why it should not be required to design and install a site dewatering system; and that, in effect, the show-cause order has been withdrawn. The Licensee also refers to what it perceives as the Commission's policy in enforcement proceedings of holding hearings only sparingly and, when held, narrowly confining the issues in such proceedings (citing *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980), and *Wisonsin Electric Power Company* (Point Beach, Unit 1), Order dated May 12, 1980). Finally, the Licensee asserts that the Staff has authority to modify or rescind a show-cause order (citing *Consumers Power Company* (Midland Plant, Units 1 and 2), CLI-73-38, 6 AEC 1082 (1973)), to issue orders to licensees under 10 CFR 2.717(b), and to enter into a stipulation for the settlement of the proceeding under 10 CFR 2.203.

The Staff does not disagree that, insofar as it is concerned, the Licensee has satisfied the terms of the show-cause order. Nor does it dispute that it has authority in certain circumstances to modify or rescind a show-cause order, to issue orders to licensees under 10 CFR 2.717(b), or to enter into a stipulation pursuant to 10 CFR 2.203. But it questions whether it has authority to terminate this proceeding given the outstanding hearing requests (Tr. 14-15). The Staff takes the position that the requests for a hearing should be judged on the basis of whether the petitioners have shown that their interests would be affected if the proceeding has one outcome versus another—in this case, either the imposition or non-imposition of certain license conditions (Tr. 15-17).

As announced at the conference (Tr. 17), we agree with that position. Absent a formal proceeding, the staff clearly has authority to rescind or modify or reach a compromise with respect to a show-cause order. But once a notice of opportunity for hearing has been published and a request for a hearing has been submitted, the decision as to whether a hearing is to be held no longer rests with the Staff but instead is transferred to the Commission or an adjudicatory tribunal designated to preside in the proceeding—in this case, to this Board.

The situation is analogous to that which confronted the Commission in the *Midland* proceeding, CLI-73-38, *supra.* There, an order to show cause had been issued, and it was made immediately effective (resulting in a suspension of certain construction activities). An opportunity for hearing was provided. Before any requests for a hearing were filed, the Staff modified the show-cause order to lift the immediate effectiveness of the order and permit the resumption of the construction activities which had been suspended (although still requiring the licensee to show cause why certain conditions should not be imposed on its construction permit). Several petitioners asked the Commissioners to prohibit the resumption of construction pending completion of the show-cause proceeding. The Commission declined to do so, reasoning that the Staff had authority to modify the show-cause order. The Commission emphasized, however, that "the modification of the show cause order did not foreclose consideration at the hearing *of any of the issues framed by the initial show cause order.* " 6 AEC at 1083 (emphasis supplied). It explained:

> Should the licensee or any interested person request a hearing, the matter will be heard and determined not by the Director [of Regulation], but by a licensing board. If the petitioners nevertheless believe that the Director has prejudged this matter, they can, by requesting a hearing, transfer the decisional authority from him to a licensing board.

Id. at 1084. Those petitioners later requested a hearing, and the request was granted. CLI-74-3, 7 AEC 7 (1974).

The Licensee attempts to distinguish the *Midland* decisions on the basis that the show-cause order had not been entirely withdrawn at the time the Commission granted the hearing request. While that is true, we judge the crucial time to be that when a notice of opportunity for hearing is published. If a timely hearing request is then filed, the petitioner can contest all matters put into issue by the notice (even though, as in *Midland,* the original proponent of the show-cause order has changed its views with respect to all or a part of such order). The decisional authority is then transferred from the staff to the adjudicatory tribunal.

Since that situation prevails in this case, we must reject the Licensee's position. Mr. Olsen's and CREC's petitions for intervention must be judged under the standards governing such petitions in show-cause proceedings. We turn now to whether those petitions (as supplemented at the prehearing conference) are adequate for us to grant party status to either petitioner.

B.1. In order to be admitted as a party in this show-cause proceeding, a petitioner must first demonstrate that it has an interest which may be affected by the proceeding—*i.e.,* that it has standing to participate. 42 USC 2239(a); 10 CFR 2.714(a) and (d). To determine a petitioner's standing, the Commission applies judicial concepts of standing, in enforcement as in other licensing proceedings. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980); *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976). To satisfy the test for standing, a petitioner must demonstrate "that the outcome of the proceeding threatens one (or more) of its interests arguably protected by the statute being administered"—in this case, the Atomic Energy Act, under which the show-cause order was issued. *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), ALAB-549, 9 NRC 644, 646 (1979); *Pebble Springs,* CLI-76-27, *supra,* 4 NRC at 613-14.

A petitioner which is an organization may meet the "injury-in-fact" requirement by demonstrating injury to one or more of its members. But to establish such representative standing, the organization must identify one or more members and demonstrate how those members may be injured by the outcome of the proceeding. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 389-400 (1979).

Neither petition before us, standing alone, included sufficient information for us to judge whether the petitioner has standing. CREC's petition merely stated that CREC's interest "is obvious" inasmuch as the

show-cause order was issued as a response to the motion filed by its representative seeking relief pursuant to 10 CFR 2.206. But that motion also included no information concerning CREC's standing; and, as the Staff points out, there are no "interest" requirements requisite to the filing of a 10 CFR 2.206 petition. As for Mr. Olsen, the only information in his petition bearing upon his standing was his address, in La Crosse, Wisconsin.

As stated earlier, the Staff recommended that we provide the petitioners an opportunity to cure the defects in their petitions. (The Staff noted that neither the Commission's rules nor the Order to Show Cause specifies the extent to which the petitioners should set forth the basis for their hearing request). In addition, as we pointed out at the prehearing conference with respect to CREC (Tr. 8), the Commission has been quite lenient in not requiring "overly formalistic" statements of standing in show-cause proceedings when the petitioner seeking a hearing has previously participated in other proceedings involving the same reactor. See *Midland,* CLI-74-3, *supra,* 7 AEC at 12. We accordingly decided to permit both petitioners to supplement their petitions at the prehearing conference.

CREC provided the name and address of one of its members (Mr. Mark Burmaster) who had asked the organization to represent it in this proceeding (Tr. 19, 20). Mr. Burmaster was in attendance at the prehearing conference, and he stated that he lives 9 miles from the plant, that "[i]f there was an earthquake and the plant was not stable, then [he] would be affected by the radioactive releases," and that he "would want the dewatering system to increase the safety" (Tr. 20, 21).[3] For his part, Mr. Olsen stated that he lives 19 or 20 miles from the plant (Tr. 28) and that, if a dewatering system were not installed, he would become "very anxious" because of possible releases that might occur as a result of an earthquake which produced liquefaction (Tr. 29). He added that he would be "hurt in the event of an earthquake" and would suffer "physical damage caused by radioactive releases from the plant" (Tr. 31, 32).

In proceedings involving license applications, the Appeal Board has ruled that a petitioner who resides or is employed in geographic proximity to a reactor site, and who has expressed concerns over reactor safety or environmental impact, can be fairly presumed to have an interest which might be affected by construction or operation of a reactor. See, *e.g., Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 226 (1974); *South Texas,* ALAB-549, *supra,* 9 NRC at 646, fn. 8. The same is true in a license amendment proceeding regarding the expansion of a spent fuel pool, where the Appeal Board stated that "close

[3]Ms. Anne Morse, who we are aware is a member of CREC, stated that she had been authorized to represent CREC in this proceeding (Tr. 18).

proximity has always been deemed to be enough, standing alone, to establish the requisite interest." *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979). Persons located as far as 40 or 50 miles from a reactor site have been deemed to have an interest in a proceeding involving that reactor. *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).

Under those standards, CREC (9 miles) and Mr. Olsen (20 miles) clearly would have an interest in this proceeding. The Staff, after listening to the petitioners' supplemental statements, acknowledged as much (Tr. 24, 32). The Licensee, however, took a differing view. It claimed that, as a result of Commission decisions such as *Marble Hill,* CLI-80-10, *supra,* requirements for standing are stricter in show-cause proceedings than in the usual licensing proceeding and that neither CREC nor Mr. Olsen has satisfied those stricter standards.

In our view, the Licensee is misreading *Marble Hill.* In that decision, the Commission merely narrowed the scope of issues which could be heard in show-cause proceedings. It did not tighten the standing requirements for persons wishing to litigate issues properly within the scope of such proceedings. As noted by the Staff (Tr. 15), *Marble Hill* involved a confirmatory order in which the licensee had agreed to the remedy proposed by the Staff in the show-cause order. The Commission held that the only matter which could be litigated was whether that remedy should be imposed—not whether some additional remedy was warranted. That being so, a petitioner who assertedly was injured only by the failure to impose an additional remedy was held not to have standing, inasmuch as that petitioner had not shown that it would be injured by a potential result of the proceeding. But within the narrowed scope of issues which can be heard in a show-cause proceeding, no more stringent standing requirements are imposed.

CREC and Mr. Olsen each indicated that they wish to litigate the issues raised by the show-cause order—*i.e.,* whether a dewatering system should be designed and installed to eliminate the effects of liquefaction. They claim they would be injured by the radiation which would be released in the event of an earthquake causing liquefaction if such system were not installed. (Whether such radiation would actually be released is not a matter which we can decide at this time. *River Bend,* ALAB-183, *supra,* 7

AEC at 225-226). They accordingly have established that they may be affected by, and hence have standing to participate in, this proceeding.[4]

2. For a petitioner to be admitted to a proceeding, it must also assert at least one viable contention. 10 CFR 2.714(b). The show-cause order has defined the only two contentions which may be litigated in this proceeding, and the petitioners have stated either through their intervention petitions or at the prehearing conference that they wish to litigate those contentions. As a basis, the petitioners rely on the December, 1978 study by the U.S. Army Engineer Waterways Experiment Station (WES study).[5] Moreover, the petitioners have specified certain matters falling within these broad contentions about which they particularly wish to inquire (Tr. 35-38, 42). Neither the Licensee nor the Staff objected to the adequacy of contentions at this time (although they reserved the right to file summary disposition motions following the completion of discovery) (Tr. 60-62).[6] For these reasons, we hold that the petitioners have adeq. ately satisfied the contention requirement and that they should be granted a hearing and admitted as parties to the proceeding.

As stated at the conference, the interests of the two intervenors are sufficiently similar to warrant their consolidation as parties (*cf.* 10 CFR 2.715a). CREC and Mr. Olsen agreed to be consolidated, and we accordingly ordered such consolidation (Tr. 64-65).

C. After discussion with the parties, we established the following discovery schedule (with discovery *not* to include at this time the matter discussed in part II of this opinion) (Tr. 65-66):

a. Discovery requests to be filed by October 2, 1980.
b. Answers to be filed by October 20, 1980.
c. Summary disposition motions to be filed by November 5, 1980.
d. Answers to summary disposition motions to be filed by November 24, 1980.

If the Licensee or Staff decide not to file summary disposition motions, we request that they advise us as soon as possible.

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[4]Because we have determined that CREC and Mr. Olsen have standing of right, we need not reach whether they should be accorded discretionary standing. See *Pebble Springs*, CLI-76-27, *supra*, 4 NRC at 614-617.

[5]Although the concusions of the WES study have since been modified, we cannot now determine the sufficiency of either the WES study or its modification. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980), *review declined*, Commission Order dated June 20, 1980.

[6]The Board ruled out as contentions the matters stated in paragraphs 3-7 of Mr. Olsen's petition, as beyond the scope of this proceeding (Tr. 34).

II.

At the prehearing conference, the Board raised an issue which it believes should be litigated in this proceeding—the size of the safe shutdown earthquake (SSE) which enters the computations as to whether liquefaction is a problem at the La Crosse site. Each of the intervenors also sought to put related questions into controversy (Tr. 36, 37, 42). The Licensee (supported by the Staff) took the position that the show-cause order treated the SSE as a "given" and hence that its magnitude could not be explored in this proceeding. Because of the differences in opinion concerning our authority to consider this matter, and the importance which we attach to this issue, we agreed to certify to the Appeal Board the question whether we could explore it.

Under 10 CFR Part 100, Appendix A, a reactor must be designed to withstand the effects of a SSE, so that certain structures, systems and components will remain functional. Appendix A, Part VI(a). The plant's design must also take into account the possible effects of the SSE on the facility foundations by ground disruption, including liquefaction. *Ibid.* Under these provisions, the adequacy of the protection against liquefaction depends in large part on the accuracy of the selection of the SSE.

A SSE has never been approved for the La Crosse reactor. The provisions of Appendix A requiring selection of a SSE and design of a plant to withstand the effects of a SSE were not in effect in 1963 or 1967, when construction and provisional operating authorizations, respectively, for the La Crosse facility were acted upon. As part of its application for a full-term operating license, however, Dairyland submitted a "Seismic Evaluation of the La Crosse Boiling Water Reactor," dated January 11, 1974, which advocates a SSE with a ground acceleration of 0.12g at the site. See Seismic Evaluation, Part 1, Section 2.4, p. 28. See also Application for Operating License, October 9, 1974, Book 1, Section 4, par. 1.1.2.

In its safety evaluation prepared in connection with the show-cause order, dated August 29, 1980, the Staff utilized an earthquake producing peak ground acceleration of 0.12g to evaluate the potential for liquefaction (SER, p. 6). The SER stated that there was "general agreement" between the Staff and Licensee that "the earthquake loading at the La Crosse site can be conservatively characterized as a magnitude 5 to 5-1/2 event at a distance of less than 25KM with a peak ground acceleration of 0.12g and an equivalent duration of 5 cycles" (*id.*, pp. 2-3, footnote omitted) and that the Staff had concluded that those seismic parameters are "adequate and conservative" for evaluation of the liquefaction potential the La Crosse site (*id.*, at p. 3). Nonetheless, the Staff acknowledged in its August 29, 1980 response to the requests for a hearing that it had not yet established a SSE

value for LACBWR but "has used the 0.12g figure as a benchmark from which the potential liquefaction problem has been evaluated" (p. 2, fn. 1).

We are aware of no analysis other than that appearing in the Licensee's January 11, 1974 "Seismic Evaluation" which would support the selection of a 0.12g figure for the SSE ground acceleration. In its August 29, 1980 SER, the Staff provides no analysis for its conclusion that the 0.12g figure is "adequate and conservative." It may be that the intervenors' desire to litigate the SSE issue in this proceeding stems only from the absence of a previous determination of this question by anyone other than the Licensee. The Board's conclusion that this question should be litigated in this proceeding, however, arises from a much more concrete foundation. In the proceeding involving the Tyrone reactor (Docket No. STN 50-484), the site of which is apparently less than 100 miles from La Crosse, the Staff selected a SSE with a ground acceleration of 0.20g. See Tyrone SER (NUREG-75/102, dated October 1975), Section 2.5.2. The applicant in that case had selected a SSE with a 0.14g ground acceleration, but the Staff desagreed. Following the tectonic province approach of Appendix A (see part V, par. (a)(1)(ii)), it evaluated an intensity MM VII-VIII earthquake which occurred near Anna, Ohio, in 1937, as if it had occurred at the Tryone site, and it derived its 0.20g ground acceleration from that process.[7]

La Crosse appears to be less distant from the Anna, Ohio earthquake epicenter than is Tyrone. Moreover, the MM VII-VIII Anna earthquake is considerably more severe than the magnitude 5-5 1/2 event utilized by the Staff in its August 29, 1980 SER. The Board believes that these circumstances make determination of the SSE essential to a proper evaluation of the potential for liquefaction at La Crosse, and whether installation of a dewatering system to prevent liquefaction is necessary. We note that the December, 1978 WES study which first perceived that a liquefaction problem at La Crosse might exist analyzed liquefaction in the event of earthquakes producing both 0.12g and 0.20g ground acceleration at the site. It found liquefaction to present a problem at both levels, though much more so in the event of the earthquake resulting in 0.20g ground acceleration. The July 1980 WES study, which found liquefaction to be no longer a problem in the event of 0.12g ground acceleration, apparently did not analyze the likelihood of liquefaction in the event of an earthquake producing 0.20g ground acceleration (at least insofar as we are aware).

The Licensee and Staff assert that the assumed 0.12g SSE is a "given"

[7]The magnitude of the SSE was not a contested issue at the construction permit hearings. The Licensing Board approved the Staff's analysis. *Northern States Power Company* (Tyrone Energy Park, Unit 1), LBP-77-30, 5 NRC 1197, 1205-06 (1977), *affirmed* (without reference to seismic matters), ALAB-464, 7 NRC 372 (1978).

under the show-cause order and that, in accordance with the *Marble Hill* rule, we cannot examine the size of the SSE in this proceeding. (Both admit that the issue may be examined by us in the operating license proceeding; since that proceeding must await completion of the Staff's SEP program, the issue is not likely to be ripe for hearing in that proceeding until 1982). In our view, however, the issue may well be within the scope of our delegation of authority from the Commission in this proceeding.

Under the Commission's July 29, 1980 delegation to us, the issues we may consider must only be within the "scope" of the show-cause order. The size of the SSE is certainly within that scope, since it is a necessary ingredient of a liquefaction analysis. Indeed, the study underlying the show-cause order analyzed liquefaction in the event of both a 0.12g and 0.20g earthquake—and since liquefaction was found to be a problem in both events, it was logical and conservative to write the show-cause order in terms of the lesser 0.12g event. Moreover, we must determine whether a dewatering system should be designed and installed on a given schedule, but we cannot do so without reference to a particular SSE. Finally, it is inappropriate in our view to assume a 0.12g SSE when the SSE for a close-by site has been determined to be 0.20g, at least without an explanation of why this difference exists.

The Licensee has advised us of a study which determines that ground acceleration of 0.10g is sufficient for the SSE at La Crosse (Tr. 50). That may well be so—we are not here deciding that 0.10g, 0.12g, 0.20g, or any other value should serve as the SSE ground acceleration. All we are determining is that there is sufficient reason to question the adequacy of the 0.12g ground acceleration to warrant exploration of the magnitude of the SSE as part of our determination with respect to whether there is a need to design and install a site dewatering system. It would be anomalous for us to decide that there is no danger of liquefaction in the event of an earthquake with 0.12g ground motion, when the real SSE turned out to produce ground motion of 0.20g. Similarly, it would be just as anomalous for us to determine that liquefaction could result from ground motion of 0.12g, if the SSE would produce only 0.10g maximum ground motion. For that reason, we believe it is important in the interest of producing an adequate record on liquefaction, and the necessity for a dewatering system, for us to have the authority in this show-cause proceeding to ascertain (rather than to assume) the SSE for this reactor.

Because of the uncertainty concerning our authority to consider this issue, we agreed to certify that question to the Appeal Board. We certify the following question:[8]

[8]In connection with this certification, the Appeal Board's attention is directed to Tr. at pp. 42-55.

Under the July 29, 1980 delegation from the Commission, is it within our authority to consider the magnitude of the safe shutdown earthquake at the La Crosse site as part of our determination of whether a site dewatering system to prevent liquefaction must be designed and made operational on a specified schedule?

If the Appeal Board should decide that we have authority to determine the size of the SSE in this show-cause proceeding, we will admit that issue into controversy in this proceeding. (At that time, we will establish a discovery schedule for this issue). If the Appeal Board decides to the contrary, we request a further certification to the Commission, with a recommendation that our delegated authority in this show-cause proceeding be expanded to the extent necessary to include the SSE issue.

For the reasons set forth in Part I, CREC's and Mr. Olsen's requests for a hearing are *granted.* A Notice of Hearing in the form of the attachment to this Order is being issued. A discovery schedule as outlined in Section I.C of this opinion is *adopted.*

The question in Part II is hereby *certified* to the Atomic Safety and Licensing Appeal Board.

Part I of this Order is subject to appeal to the Atomic Safety and Licensing Appeal Board in accordance with the provisions of 10 CFR 2.714a. Any such appeal must be filed within ten (10) days after service of this Order. For further details, see 10 CFR 2.714a(a) and (c).

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland
this 30th day of September 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. STN 50-546**
STN 50-547

PUBLIC SERVICE COMPANY OF INDIANA, INC. WABASH VALLEY POWER ASSOCIATION, INC.
(Marble Hill Nuclear Generating Station, Units 1 and 2)

September 2, 1980

On September 2, 1980, Harold R. Denton, Director, Office of Nuclear Reactor Regulation decided that further action on 2 issues raised by Mr. Thomas M. Dattilo on behalf of Save the Valley (STV) was not warranted. The first issue concerned STA's allegations that the New Madrid fault zone extends in a northeasterly direction towards the Marble Hill site. The second issue involved a concern over accidental releases of radioactive liquids.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

On May 23, 1980, the Commission referred an undated document (docketed on May 14, 1980) to the NRC Staff for consideration under 10 CFR 2.206 of the Commission's regulations. This document, which was filed by Mr. Thomas M. Dattilo on behalf of Save The Valley (STV), is entitled "Save the Valley Additional Comments To Commissioners Concerning Resumption of Work at Marble Hill."[1] Notice of receipt of the STV document was published in the *Federal Register* (45 FR 53287-1980).

[1]This document incorporated another document entitled "Save the Valley Comments Regarding the Consideration of the Reopening of Marble Hill," which was docketed on May 7, 1980. The May 7th document concerns issues related to construction acitivities at Marble Hill which were not considered in this decision.

Of the various matters raised, STV's document contains two issues which are the responsibility of the Office of Nuclear Reactor Regulation. The first issue concerns STV's allegations that the New Madrid fault zone extends in a northeasterly direction towards the Marble Hill site. The second issue involves a concern over accidental releases of radioactive liquids. For the reasons stated in the remainder of this decison, no further action is warranted at this time with regard to these two issues. The remaining matters raised in the documents, which concern construction practices at Marble Hill, are before the Office of Inspection and Enforcement for appropriate action.

NEW MADRID EXTENSION

With respect to this issue, STV alleges that the New Madrid fault zone extends in a northeasterly direction toward the Marble Hill site and, as a result, there should be a further study made of the New Madrid Seismic Zone Extension and its implications regarding Marble Hill. In determining the safe shutdown earthquake (SSE) for the Marble Hill site, the Licensing Board found that (6 NRC at p. 345 (1977)):

> The intensity of the largest earthquake not demonstrated to be reasonably associated with structure which has occurred in [the central Stable Region tectonic] province is VII-VIII Modified Mercalli [Anna, Ohio]. This intensity is assumed to occur at the site in establishing the safe shutdown earthquake [reference omitted].... P10 [It was also] found that an earthquake like the largest in the New Madrid series of 1811-1812 should be assumed to occur in the Wabash Valley area about 110 miles from the Marble Hill site in establishing the safe shutdown earthquake. Intensity attenuation relationships indicate an intensity near IX Modified Mercalli could be experienced at an epicentral distance of 110 miles from the largest earthquake in the New Madrid series. While this earthquake is expected to produce peak accelerations less than those for a nearby earthquake of intensity VII-VIII Modified Mercalli, its effects need to be considered because of the sustained vibratory motion and increased spectral response at longer periods from such an earthquake. In summary, the vibratory motion used by the Applicants in designing the Marble Hill facility must adequately represent the effects of:
>
> (1) an intensity VII-VIII Modified Mercalli earthquake occurring near the site, and
>
> (2) an intensity XI-XII Modified Mercalli-New Madrid type earthquake occurring 110 miles from the site [reference omitted].

We have reviewed recent information on the postulated extension of the New Madrid fault zone in a northeasterly direction. State agencies and cooperating educational institutions in Arkansas, Missouri, Tennessee, Kentucky, Illinois and Indiana have supplied both geologic and geophysi-

cal research and have returned results that are helping to define the seismotectonics of the New Madrid Seismic Zone and adjacent areas.

In particular, evidence for the northeasterly extension of the New Madrid Seismic zone across the 38th parallel is inconclusive. Geophysical investigations (in particular gravity and magnetics) north of the 38th parallel have indicated some very subtle similarities with the areas of higher seismicity to the south, such as weak lineations of circular positive magnetic anomalies similar to those measured in the New Madrid area. Interpretation of these similarities is highly conjectural. Postulation of a continuous structure connecting Southern Indiana and the New Madrid Zone using available data has not been endorsed or accepted by a large majority of the geologic and geophysical community. There is certainly no consensus among seismologists that would predicate an earthquake, the size of New Madrid, occurring in Southern Indiana.

The idea of a northeasterly striking alignment is not new. G.P. Wooland suggested a major structural break extending from the Mississippi Valley through the St. Lawrence River Valley.[2] However, seismic hazard maps of the United States do exhibit this feature.[3]

Results from a seismic instrument network in the New Madrid area have demonstrated that there is a distinct break in seismicity at about the northern extent of the Mississippi Embayment (37.5 degrees north latitude).[4, 5] Seismologists at St. Louis University have separated seismic occurrence into two zones, New Madrid (South of 37.5°N) and Wabash Valley (North of 37.5°N). The Wabash Valley zone trends more northerly than the proposed northeastern extension of the New Madrid fault zone. We have, up until this time, incorporated both the New Madrid and Wabash Valley fault zones into one zone. Therefore, we believe that the postulation of a New Madrid type earthquake occurring in the Wabash Valley, for the purpose of determining the SSE for Marble Hill, is conservative.

The New Madrid Seismotectonic Study is continuing and new results are regularly evaluated to update our knowledge of earthquake hazard in New Madrid and adjacent areas of the Midwest. Currently, though, we find no

[2]Transactions of American Geophysical Union Volume 39, No. 6, 1958.
[3]Algermissen, S.T., "Seismic Risk Studies in the United States" Fourth World Conference on Earthquake Engineering, Santiago, Chile, January 1969.
[4]W. Stauder, et al., Seismological Society of America Bulletin, Vol. 66, No. 6, 1976.
[5]W. Stauder, et al., Central Mississippi Valley Earthquake Bulletin, Quarterly Report No. 23, 1980, St. Louis University.

reason to change our previous conclusions regarding the SSE for the Marble Hill site.[6]

Postulated Liquid Radioactive Releases

The second STV issue involves a concern over leakage of radioactive fluids from the reactor containment building. This matter was the subject of Contention No. 15, "Ground Water Contamination," at the Marble Hill construction permit hearing. The Licensing Board found that (6 NRC at 341 (1977)):

> The approach of both the Applicants and the Staff in assessing the effect of a postulated accidental release of radioactive liquids from the proposed Marble Hill Station is a highly conservative one. The analyses assume that there is a nonmechanistic instantaneous catastrophic failure of the tank that is postulated to have the highest concentration and activity of liquid radioactive waste. This assumption is coupled with the further conservatively inconsistent assumption that all of this liquid rad-waste somehow (nonmechanistically) gets into both the ground water and into the Ohio River, for purposes of analysis of each pathway. In addition, for accident analysis purposes, the radioactivity level assigned to the release assumes no holdup in the tanks and arbitrarily multiplies the activity by a factor of eight (Staff Test., post Tr. 1578; Tr. 1547-88; 1579-81; 1586-88; 1590). The Board agrees with the Staff that these assumptions are not realistic expectations and are therefore highly conservative (Tr. 1580-81; 1590-93).
>
> There is testimony that the sand and gravel alluvial-glaciofluvial aquifer is not continuous between the proposed site and the wells used by the city of Madison (Applicant Test., post Tr. 1505, at p. 3). The hydraulic gradient within the aquifer is from north to south, corresponding to the hydraulic gradient of the Ohio River. The City of Madison water wells lie upgradient from the proposed site, any postulated liquid radioactive releases into the ground water will be carried in the direction away from the Madison water wells (Staff Test., post Tr. 1578; Applicant Test., post Tr. 1505, at p. 2). Accordingly, the Board finds that there is no credible potential from ground water movements from the proposed site to the upstream Madison, Indiana, wells.
>
> In addition, no unacceptable effects to other pumping centers will result. The postulated release of radioactive liquids from the proposed facility will have

[6]We will give appropriate consideration to future analyses of earthquake hazards that bear on the seismicity of the Marble Hill site, particularly as we conduct the operating license review for the Marble Hill Station. Moreover, this decision does not preclude litigation of appropriate contentions concerning seismic issues in any proceeding on issuance of operating licenses for Marble Hill. For purposes of this decision, however, STV has not identified significant new information that would warrant action to re-evaluate prior resolution of these issues. *See Consolidated Edison Company* (Indian Point Station, Units 1-3), CLI-75-8, 2 NRC 173, 176 (1975); *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-21, 10 NRC 717, 719 (1979).

> no unacceptable effects on either the closest down gradient ground water pumping center (Oldham Water District, located approximately 12 miles downstream) or on the nearest downstream surface water user (the Louisville Water Company, located about 30 miles downstream) (Errata to Staff Site Suitability Report, post Tr. 1296). The calculated radionuclide concentrations for these water users are small fractions of the limits of 10 CFR Part 20 for unrestricted areas, and are therefore acceptable [reference omitted].

As stated in the staff's testimony, the analysis of accidental releases of radioactive fluids from the Marble Hill facility assumed that these liquids would escape through postulated fractures in the limestone to the Ohio River with no holdup in transit. However, our post construction permit review of the lower elevations of the excavation for the Marble Hill facility found that the limestone was very tight.[7] Therefore, our analysis for release of radioactive liquids was very conservative. Further action on STV's concern is not warranted.

CONCLUSION

For the reasons set forth above, no further action will be taken on the two issues raised by Save The Valley. A copy of this decision will 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. As provided in 10 CFR 2.206(c), 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 2nd day of September 1980.

[7]See letter from Brown to Gammill (December 12, 1977) on Marble Hill site visit.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-250**

FLORIDA POWER AND LIGHT COMPANY
(Turkey Point Plant, Unit 3) **September 18, 1980**

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 which requested that the Commission issue an order to the licensee to show cause why the Turkey Point Plant Unit 3 should not be shut down to perform steam generator inspection and repair.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated July 30, 1980, Martin H. Hodder, Esquire and Cheryl A. Flaxman, Esquire, on behalf of residents and homeowners in South Florida in close proximity to the Turkey Point Plant (the petitioners), requested that the Commission issue an Order to Florida Power and Light Company (the licensee) to show cause why Turkey Point Unit No. 3 (Unit 3) should not be shut down by July 31, 1980, to perform a steam generator inspection and repair. The petition was not received until after the date July 31, 1980. The petition was referred to the Office of Nuclear Reactor Regulation for expeditious action in accordance with 10 CFR 2.206 of the Commission's regulations.[1]

[1]The petition was filed before the Commission requesting the Commission reverse the decision of the staff which permitted Unit 3 to operate for approximately 2 months beyond July 31, 1980. The Commission referred the petition to the staff for treatment as a request for action under 10 CFR 2.206.

I.

Amendment No. 52 of the operating license for Unit 3, issued on January 25, 1980, specifies that:

> "5. In order to perform an inspection of the steam generators, Unit No. 3 shall be brought to the cold shutdown condition within six equivalent months of operation from January 24, 1980 or at the next refueling shutdown, whichever occurs first, unless: (1) an inspection of the steam generators is performed within this period as a result of the requirements in 2, 3 and 4 above, or (2) an acceptable analysis of the susceptibility for stress corrosion cracking of tubing is submitted to explicitly justify continued operation of Unit 3 beyond the authorized period of operation. Any analysis justifying continued operation must be submitted at least 45 days prior to the expiration date of the authorized period of operation. For the purpose of this requirement, equivalent operation is defined as operation with a primary coolant temperature greater than 350°F. NRC approval shall be obtained before resuming power operation following this inspection.

Under the terms of Amendment No. 52, Unit 3 would have been required to shut down by July 31, 1980 to perform a steam generator inspection unless either item (1) or (2) above had previously been satisfied. By letter dated June 30, 1980, the licensee requested permission to delay the next steam generator inspection of the plant until October 6, 1980. This request was evaluated by the staff and granted in the form of an amendment issued July 30, 1980 (Amendment No. 59). The amendment permitted continued operation of the Unit 3 for approximately two months of operation beyond July 31, 1980. Upon expiration of that period of time the licensee must shut the facility down to conduct an inspection of the steam generators.

The petitioners contend in effect, that Amendment No. 59 is inconsistent with NRC statements that "an adequate technical basis to predict steam generator performance for periods longer than six months at a time" is not now available and that the NRC would "not expect to have applications for periods longer than six months," (Petition at 1 and 7). Secondly, petitioners contend the licensee has not filed any technical basis for its extension request which would comply with the requirement of Amendment No. 52 that an "acceptable analysis" be submitted. Rather, they assert the licensee's request "relies entirely on legally inappropriate and hence irrelevant and immaterial economic and service considerations" (Petition at p. 10). Finally, petitioners contend that the failure of the licensee to inspect certain steam generator tubes during its January 1980 inspection and the discovery of foreign material in the reactor coolant system in December 1979, raise "unusual and serious safety questions that cannot be left

unresolved" beyond July 31, 1980 (Petition at p. 6). The licensee filed comments opposing the motion for order to show cause on August 27, 1980.

The staff has evaluated the information and the issues raised in the Petition. For the reason set forth below, I find there is reasonable assurance that operation of Unit 3 under the terms of Amendment No. 59 can continue without endangering the health and safety of the public. For this reason petitioners' request for an order to shut down Unit 3 is *denied.*

II.

BACKGROUND

In the mid-1970s, a number of nuclear plants, including the Turkey Point Plant Unit Nos. 3 and 4, began to have problems with leaking steam generator tubes due to a corrosive process called "denting." On October 29, 1976, the NRC staff set forth minimum requirements to ensure that Units 3 and 4 would not, as a result of this denting phenomenon, operate with reduced integrity of the primary system pressure boundary. Since that time the plants have operated under strict requirements imposed by the NRC staff. Unit 4, which had the greater degree of denting of the two units, operated under the terms of several Commission requirements imposed during the period from February 8, 1977 until September 22, 1978, which required that steam generator tube inspections be performed at certain intervals — first 60 days,[2] then 120 days and finally, six months. Unit 3 has since January 14, 1977 operated under essentially the same strict limitations as Unit 4.

The requirements placed on Unit 4 in early 1977 to conduct steam generator inspections following the short operating intervals were based on the degree of denting in the steam generator tubes and the degree of understanding the staff had regarding the denting phenomenon. Once the phenomena were relatively well understood, the inspection interval was set at six months. The period of six months was based on the staff's confidence in the methods used for predicting the steam generator/core plate tube deformation as well as previous operating experience at the Turkey Point units and other similarly degraded units. Unit 3 operated for a six month period beginning with the first such restricted period of operation in 1977 because the steam generators were in a less advanced state of degradation.

[2]All of the time periods are in terms of effective full power operation, which is defined as operation with reactor coolant over 350°F.

During 1977 two extensions of the Unit 3 operating interval were requested by the licensee and approved by the staff.[3] These extensions were granted on the operating experience of the Turkey Point Units, the operating experience of other reactors with similarly degraded steam generators, and the technical justification set forth in the application. Recognizing that the need for extensions might arise in the future, and that similar valid technical justification might accompany the requests for such extension, the next Unit 3 license amendments[4] simply provided that the stated inspection was required unless "2) an acceptable analysis of the susceptibility for stress corrosion cracking of tubing is submitted to explicitly justify continued operation of Unit 3 beyond the authorized period of operation."

III.

In support of their petition, the petitioners stress a statement by the staff that it does not have an "adequate technical basis to predict steam generator performance for longer than six months," (Petition at p. 1). However, the statement that operation longer than six months be reliably *predicted* does not mean that operation of a facility for longer than six months without steam generator tube inspection cannot be permitted consistent with the requirement to protect the health and safety of the public. Rather, it means that, following an inspection and plugging program of steam generator tubes, the NRC has reservations about the ability of its methodology to predict the expected operation of the plant for longer than six months. If appropriate analysis has been provided *and* if operating experience of the reactor in question *and* other reactors with similarly degraded steam generators is satisfactory, extension of the operating intervals may be acceptable, i.e., satisfy the NRC requirement that the health and safety of the public will not be adversely affected.

Early in 1979, the licensee decided to go to an 18 month refueling cycle.

[3]Letter from G. Lear, NRC to Dr. R.E. Uhrig, FPL, dated July 15, 1977 transmitting Amendment No. 26 which permitted operation of Unit 3 until August 16, 1977 (about one month extension).

Letter from G. Lear, NRC, to Dr. R.E. Uhrig, FPL, dated August 16, 1977, transmitting Amendment No. 27 which permitted Unit 3 to operate until the refueling period (about 2 months extension).

[4]Letter from G. Lear, NRC to Dr. R.E. Uhrig, dated January 31, 1978, transmitting Amendment No. 32 which permitted Unit 3 to operate for six months.

Accordingly, the next steam generator inspection reports and analyses[5] included plugging analyses and procedures calculated to assure safe operation for a ten month rather than a six month period. The NRC staff, in each of its evaluations of the various reports and analyses[6] indicated a preference not to extrapolate inspection results longer than the previously accepted six month period. In a meeting with licensee representatives on March 4, 1980 this matter was discussed and two points were made by the staff:

> "1. An adequate basis has been given to substantiate the predictability of a six month operating period with degraded steam generators.
>
> 2. An extrapolation of the predication capability to operation for ten months is not acceptable without the establishment of an acceptable model for such an operating period."[7]

At that meeting, the licensee representatives said they would not attempt the longer operating period until a specific analysis had been done to show that a longer operating period could be reliably predicted. Subsequently, it was determined by the licensee that such an analysis would take too long to develop and therefore would not be available in time as use on the present steam generators, assuming the current schedule of steam generator repair was maintained.[8] Consequently, the licensee plans to operate for intervals of no more than six months between steam generator inspections. Extensions may be requested by the licensee and may be granted by the NRC if an appropriate analysis is presented and if operating experience of the Turkey Point Plant and other plants with similarly degraded steam generators indicates that such operation meets established safety requirements.

As noted above, Amendment No. 52 of the Unit 3 license requires that "an acceptable analysis of the susceptibility for stress corrosion cracking of

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[5]March 6, 1979 letter from Dr. R.E. Uhrig, FPL, to V. Stello, NRC, containing Unit 3 inspection results and analysis.

May 18, 1979 letter from Dr. R.E. Uhrig, FPL, to V. Stello, NRC, containing Unit 4 inspection results and analysis.

[6]March 30, 1979 letter from A. Schwencer, NRC, to Dr. R.E., Uhrig, FPL, transmitting Amendment No. 46 which permitted Unit 3 to operate for six months.

June 15, 1979 letter from A. Schwencer, NRC, to Dr. R.E. Uhrig, FPL, transmitting Amendment No. 41 which permitted Unit 4 to operate for six months.

[7]Summary of meeting held on March 4, 1980, regarding the Steam Generator Inspection and Plugging Program, March 13, 1980.

[8]The steam generators in Unit 4 are scheduled to be repaired starting in October 1981 and those in Unit 3 a year later.

tubing (must be) submitted to explicity justify continued operation of Unit No. 3 beyond the authorized period of operation."[9]

The basis for the staff decision to grant the extension request on July 30, 1980, was the information provided by the licensee in its June 30 letter and the information previously submitted in its January 10, 1980 inspection report. In the January 10, 1980 report, the licensee had explained the inspection and plugging criteria used which it believed would justify an operating period in excess of ten months. In its June 30 letter, the licensee noted that the plugging criteria had been effective in that no steam generator tube leaks had occurred during the period from January 24, 1980 to that date and, indeed, since July 1978.

As explained in more detail in the Safety Evaluation Report for Amendment No. 59, a copy of which is attached hereto, the staff evaluated the information submitted, as well as the operating experience of Unit 3 and other facilities with similarly degraded steam generators and found that the information supplied was adequate to justify the extension without jeopardizing the health and safety of the public.

The petitioners assert that the information on generating capacity and expected load demand submitted by the licensee in Attachment 1 to its June 30 request was the only basis submitted for the requested extension and was legally inappropriate as the basis for such a request. As already explained, the reasons for granting the request were the technical analyses supporting it. These did not involve considerations of need for power.

IV.

The petitioners cite two safety concerns which they contend require that Unit 3 be shut down and reinspected after an equivalent six months of operation as originally required by Amendment No. 52: (1) the failure by the licensee to inspect two tubes in its January 1980 inspection, and (3) the discovery in December 1979 of foreign material in the Unit 3 steam generators.

[9]The amendment also states that such an analysis is to be submitted at least 45 days prior to the expiration date of the authorized period of operation. That time requirement is imposed to permit the Commission sufficient time to evaluate a request, given its many responsibilities and necessarily limited resources. That is not to say that the Commission may not, as it did in this case, evaluate and grant a license amendment request if less than 45 days notice is given by the licensee. But if a licensee submits an application less than 45 days before the date it wishes the amendment issued, it does so at its own risk that the amendment may not be granted by the time it wants it.

Two tubes were observed to restrict passage of a 0.650 probe during the January 1979 inspection. However, the licensee inadvertently failed to inspect them during the January 1980 inspection. The licensee notified the Commission of this omission on January 18, 1980 and provided information as to why it believed "these restricted tubes were isolated occurrences" and that the probability of these tubes developing a leak before the next inspection "was remote."[10] The NRC staff evaluated the information submitted by the licensee and concluded at that time, for the reasons set forth in the associated Safety Evaluation Report, that these tubes did not represent a safety concern.[11]

When the licensee requested the extension of its operating period in June, the staff reexamined the information submitted by the licensee in support of its January 1980 amendment request. The evaluations done and the conclusion reached, including conclusions that the two tubes in question did not represent a safety concern, were revalidated by the staff and the January 25, 1980 Safety Evaluation Report was incorporated into the July 30, 1980 Safety Evaluation.[12] Thus, the condition of these two tubes was considered by the staff when it concluded that extension of operation of Unit 3 plant for approximately two months was acceptable.

The second safety concern raised by petitioners involves "loose metallic fragments inside a reactor coolant system" (Petition at p. 6). Pieces of foreign material were discovered in the hot leg side of steam generators 3B and 3C on December 3, 1979 during the refueling outage and steam generator inspection of Unit 3.[13] The licensee examined the materials and found them to consist of two fragments of an improperly expanded steam generator tube plug[14] and several small pieces of 16 gauge unalloyed carbon steel that were not part of the reactor system. There were a total of 13 pieces in the two generators with a total weight of 354 grams (0.78 pounds). One piece of a tube plug was located in a steam generator tube. That tube was plugged as a preventive measure. The licensee conducted a visual inspection of the steam generators and reactor vessel and found no additional material or any evidence of damage.

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[10]Letter dated January 18, 1980 from Robert E. Uhrig, FPL, to Darrell G. Eisenhut, NRC.

[11]Safety Evaluation Report for Amendment No. 52, Turkey Point Nuclear Plant Unit 3, January 25, 1980.

[12]Safety Evaluation Report to Amendment No. 59, Turkey Point Plant, Unit 3 July 30, 1980, at p. 2.

[13]Letter from A.D. Schmidt, FPL, to J.P. O'Reilly, NRC, dated December 31, 1979 transmitting LER 79-39.

[14]During the January 1979 steam generator inspection and plugging program a tube plug improperly expanded. Apparently during the repair the two pieces of plug skirt were inadvertently overlooked.

The staff was aware of the foreign material[15] before Amendment No. 52 was issued. The staff believed and continues to believe that pieces of metal as small as those located cannot cause a serious problem within a reactor system. This belief is based on extensive review of the effect of loose steam generator tube plugs in the Unit 4 reactor coolant system[16] as well as a report of a broader survey of extraneous materials found in reactor coolant systems and the safety implications associated with such materials in the reactor coolant systems.[17] This latter report was part of a study by the NRC to evaluate Regulatory Guide 1.133 which dealt with loose-parts monitoring systems. A summary report[18] was written which concluded that, although a plant equipped with a loose-parts monitoring system (LPMS) is somewhat safer (more depth to its defense) there is insufficient justification for backfitting all plants with LPMSs.

An LPMS[19] is generally capable of detecting loose parts that weigh greater than 0.114 kgm (0.25 pound). Thus it is unlikely that the pieces of metal discovered in December 1979 could have been detected by an LPMS even if it had been installed at that time. According to the staff reviews, it is extremely u. likely that small pieces, such as those found in the Unit 3 steam generators, could cause coolant flow blockage or mechanical interference with control rods.[20] Moreover, any flow blockage, if significant, could be readily detected by other means, such as distorted flux maps, prior to any damage to the fuel. Similarly, any control rod interference could be readily detected by control rod indicators prior to any damage to the reactor.

V.

Based on the foregoing discussion, I have concluded that an acceptable analysis was submitted by the licensee in support of its request for an extension of its operating period which enabled the staff to evaluate the

[15]Letter to R.E. Uhrig, FPL, from A. Schwencer, NRC, transmitting Amendment No. 52 to the Unit 3 license dated January 25, 1980 (SE at p. 5).
[16]Letter to R.E. Uhrig, FPL, from G. Lear, NRC, transmitting an Order for Modification of License dated August 3, 1977 (SE at pp. B-10 and C-1).
[17]Memo from R.L. Baer to D.G. Eisenhut regarding Report on Operational Experience with Commercially Marketed Loose-Part Monitoring Systems, dated February 28, 1978.
[18]Memo from P.S. Check to D.G. Eisenhut entitled Implementation Evaluation of Proposed Regulatory Guide 1.133 "Loose part Detection Program for the Primary System of Light-Water-Cooled Reactors," dated September 21, 1978.
[19]The Turkey Point Units are now both equipped with Metal Impact Monitoring Systems, which are a specific type of LPMS. Turkey Point Unit 3 was so equipped in early 1980 and Turkey Point 4 in late 1977 or early 1978.
[20]Value-Impact Statement for Proposed Regulatory Guide 1.133 "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," October 1978.

proposal. The two specific safety concerns raised by petitioners were considered by the staff at the time it issued the amendment for extended operation. The staff concluded that the operating interval could be extended "without altering our previous conclusions that the steam generator tubes will maintain an acceptable degree of integrity" and that there was reasonable assurance that the health and safety of the public would be protected during the extension period.[21] Therefore, I have determined that petitioners' request for an order to shut down the Turkey Point Plant Unit 3 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 Turkey Point Plant located at the Environmental Urban Affairs Library, Florida International University, Miami, Florida 33199. 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.

FOR THE NUCLEAR
REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 18th day of September, 1980.

[21]Safety Evaluation Report for Amendment No. 59, July 30, 1980 at 2-3.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-331**

IOWA ELECTRIC LIGHT AND POWER COMPANY, *et al.*
(Duane Arnold Energy Center) **September 24, 1980**

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 that requested initiation of proceedings to modify the operating license for the Duane Arnold Energy Center to require compliance with certain General Electric Company recommendations for oxygen control in boiling water reactors' coolant.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a request dated July 17, 1979, Citizens United for Responsible Energy (CURE) requested that the Director of Nuclear Reactor Regulation initiate a proceeding to modify Facility License No. DPR-49, for the Duane Arnold Energy Center (DAEC), such that compliance with General Electric Company recommendation "BWR Coolant Oxygen Control," NEDO-23631, June 1977, would be a limiting condition for operation. Notice of receipt of this request was published in the FEDERAL REGISTER on September 11, 1979 (44 FR 52912). For the reasons set forth in this decision, the request is denied.

In support of the request, the petitioner cites the cracks discovered in June 1978 in the DAEC recirculation system inlet nozzle safe-ends. The cause of the cracks was determined to be intergranular stress corrosion cracking (IGSCC). The petitioner states that such cracks indicate the Iowa Electric Light and Power Company (IELP) has failed to adequately address the serious problems created by IGSCC and that implementation of NEDO-23631 is necessary to ensure the continued safe operation of DAEC.

FACTUAL BACKGROUND

On June 17, 1978, a plant shutdown permitted the investigaton of the source of a 3 gallon per minute (gpm) leak that had existed since June 14th (Plant Technical Specifications allow 5 gpm unidentified leakage). The leak was due to a through wall crack in one of the eight, Alloy 600 recirculation-inlet nozzle transition pipe ends (safe-ends). Non-through-wall cracks were subsequently found in the other seven safe ends.

An analysis by the NRC Pipe Crack Study Group (NUREG-0531), "Investigation and Evaluation of Stress Corrosion and Cracking in Piping of Light Water Reactor Plants," February 1979) concluded that the cracking was due to design and fabrication factors that led to high residual plus applied stresses and the presence of a crevice which promoted a coolant impurity concentration phenomena.

All eight inlet nozzle safe-ends were replaced. The replacement safe-ends and thermal sleeves were redesigned to reduced peak stresses and eliminate the previous crevice configuration. The safe-end/thermal sleeve adapter combination was fabricated from Alloy 600 the same type material as the original combination. The new design was evaluated and found acceptable. The staff concluded that there was reasonable assurance that IGSCC should not occur in the pressure boundary of the new design.

DISCUSSION

For BWRs in this country the long standing principle of reactor coolant chemistry control has been to maintain the water as completely free of impurities as possible. The recirculating coolant water is continuously purified in a clean-up system so that even trace impurity levels are exceptionally low. During opertion the water decomposes by radiolysis in the nuclear flux, to produce both oxygen and hydrogen. Although the bulk of these gases are stripped into the steam and removed from the system at the condenser, a small amount stays in the recirculating water. The oxygen content of the circulating coolant water therefore depends upon the equilibrium conditions between the radiolysis of the primary coolant water, the stripping of the gas into the steam and the small quantities in the make up water. Because the BWR cycle is an open cycle, heretofore it has not been economical to inject additives into the circulating water, as is done in PWRs, to lower the oxygen level of the coolant. The oxygen level of the coolant is thus a function of the reactor power level. Because of the above, the Technical Specifications of the Duane Arnold plant, as well as those of other operating BWRs, do not require the monitoring or control of the oxygen level in the coolant. Tests of the primary coolant oxygen content of

the Duane Arnold plant were performed during the early start-up tests and were consistent with the G.E. data developed during tests on a number of other BWR plants. The tests at DAEC indicate a level of 200 to 250 ppb of oxygen. Other BWR plants have similar oxygen levels.

The NRC Pipe Crack Study Group did an extensive study of the influence of oxygen in BWR primary coolant on IGSCC. (NUREG-0531, "Investigation and Evaluation of Stress-Corrosion Cracking in Piping of Light Water Reactor Plants.") The Group recommended that control of oxygen during shutdown and start-up be exercised wherever possible and said that reduction of oxygen levels during steady state operation of BWRs is desirable. However, the report also stated that "the data do not exist at the present time to determine if oxygen control during shutdown and start-up will prevent IGSCC in BWR piping." Thus, there is no assurance that the reduction of oxygen in these operational modes in a plant that had previously operated with the normal oxygen levels would prevent IGSCC in the future. For example, intergranular stress-corrosion cracks were found in Vermont Yankee core spray lines (not alloy 600) about two years after the utility started its practice of deaeration during start-up.

Much of the early technical support for deaeration as a remedy for IGSCC in BWRs came from two primary sources: 1) the belief that IGSCC was related to the number of reactor shutdowns greater than 24 hours long and 2) laboratory data showing that IGSCC was less severe in 0.2 ppm dissolved oxygen compared to 8 ppm dissolved oxygen (as in air saturated water). The belief that IGSCC was related to the number of reactor shutdowns, originated with a statistical analysis of a limited number of incidents, performed in a General Electric study published in 1974 (NEDO 21000). A more recent analysis of a larger number of incidents, established that the apparent correlation between shutdowns and cracking may not be a real correlation but only part of a more complex phenomenon. Unfortunately, the preliminary laboratory experiments conducted to support this thesis, were done in an unrealistic BWR environment, air saturated water at operating temperature. Actual in-reactor measurements of temperature/oxygen combinations showed that this severe condition rarely if ever occurs in operating BWRs. Therefore, laboratory studies that compare the severe condition of air saturated water at operating temperature to the low oxygen condition attainable with deaeration cannot produce a valid evaluation of the benefits of deaeration.

Recent experiments, in an EPRI program, using corrosion potential measurements in operating reactors and in laboratories indicate that the corrosion potential remains high in spite of deaeration. This suggests that deaeration alone will not stop IGSCC.

Although the G.E. staff study report (NEDO 23631) recommended that deaeration during start-up and shutdown be implemented in BWRs, the G.E. Company to this date has not recommended it to the BWR owners and does not include it in its present design.

It is recognized that reduction of the oxygen content in the reactor coolant may be expected to provide a means for limiting the extent of IGSCC, however, this principle has not been fully developed. The NRC staff considers the recommendations made in NEDO 23631 worthy of being pursued further for development. The staff is not now requiring implementation of the recommendations of this report. There is insufficient data available to evaluate the secondary or syndergistic effects of lowering the oxygen level of the coolant by deaeration, e.g., increased corrosion of the installed ferritic piping.

Studies have been initiated on various methods for controlling oxygen in BWRs including vacuum deaeration and hydrogen or amine additions. These studies will evaluate the corollary effects of oxygen reduction in the BWR coolant. The studies are being closely followed by the NRC staff and will be considered in resolving the IGSCC problem.

A review of BWR operating experience showed that the safe-end cracking at DAEC is the first example of IGSCC in Alloy 600 exposed to BWR water environment. Laboratory tests have shown that very high stresses (above yield) and tight crevice conditions, both of which were present in the original DAEC design, are significant factors in initiating stress-corrosion cracking in Alloy 600.

EVALUATION

The new safe-end design for DAEC has removed from the primary pressure boundary the tight crevice, and the weld which caused the high residual stresses in the original design. Therefore, there is reasonable assurance that stress corrosion cracking will not occur in the pressure boundary of the new design. The new design will allow increased circulation which will prevent the concentration of detrimental chemical species that can occur in a tight crevice.

In addition, an inservice inspection program for the safe-ends was instituted to detect any cracks should they occur. The program complies with the recommendations of *Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping,* NUREG-0313, July 1977, and NUREG-0313 (Revision 1), October 1979, in which the staff concluded that existing plant design, inservice inspection programs, and leak detection monitoring systems ensure that IGSCC does not

constitute a present safety problem for operating plants, and, therefore, constitute an acceptable basis for continued plant operation.

Under 10 CFR 50.109, the Commission may require "backfitting" of a facility if "such action will provide substantial, additional protection which is required for the public health and safety." Backfitting is defined as the addition, elimination or modification of structures, systems or components of a facility after the construction permit has been issued. Since the reduction of IGSCC is a long-term goal, this section of the regulations appears to be the proper basis for implementing the recommendations of NEDO-23631, if such implementation is deemed appropriate based on further study.

10 CFR 50.36(c)(2) defined limiting conditions for operation as "the lowest functional capability or performance levels of equipment required for safe operation of the facility." While NEDO-23631 may prove a desirable means of reducing the incidence of IGSCC, even then it may very well not be *required* for safe operation because of the long term effects and the short term crack detection by the inservice inspection and leak detection, and therefore, it would not qualify as a limiting condition for operation.

Notwithstanding the assurance provided by the new safe-end design, the NRC staff considers the recommendations made in NEDO-23631 worthy of being pursued further. It is recognized that reduction of the oxygen content in reactor coolant may be expected to provide a means of limiting the extent of IGSCC. However, this principle has not been fully developed, and is not now a requirement for present safe plant operation. Studies have been initiated on various methods for controlling oxygen to establish whether the presence of oxygen has any bearing on IGSCC. These studies are being closely following by the NRC staff.

CONCLUSION

For the reasons stated in this decision, I have determined not to modify Facility License No. DPR-49 for the DAEC such that compliance with NEDO-23631 is a limiting condition for operation. Accordingly, the request of the petition is denied.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Wasington, D. C. 20555, and 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 decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commisson'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.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 24th day of September, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-142**

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA (UCLA Research Reactor) **September 24, 1980**

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 which requested suspension of the UCLA research reactor's operation based on certain safety concerns related to radiological emissions from the facility. The petitioner's requests for a hearing and for intervention in the proceeding on renewal of the facility's license are before a Licensing Board, thereby obviating any need for the Staff to respond to these requests under 10 CFR 2.206.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated October 3, 1979, Daniel O. Hirsch, on behalf of the Committee to Bridge the Gap (CBG), requested that the Chairman of the Nuclear Regulatory Commission (NRC) issue an order shutting down the University of California, Los Angeles (UCLA) research reactor pending resolution of certain safety issues. The petition also requested that other actions be taken regarding the renewal of the reactor's operating license. This petition was referred to the Staff as a request for action under 10 CFR 2.206 of the Commission's regulations. Notice of receipt of CBG's petition was published in the *Federal Register,* 44 FR 70241 (December 6, 1979). UCLA responded to the petition by letter to the NRC dated January 3, 1980.

The actions requested by CBG, in addition to the order to shut down the UCLA reactor, were:

1. Hold public hearings on the renewal of the reactor's operating license (which had been scheduled to expire in March 1980).
2. Grant CBG formal intervenor status in the renewal proceeding.

3. Notify CBG of any hearings or action taken pursuant to the renewal of the license.

On February 28, 1980, UCLA filed a timely application for renewal of the license. Notice of this proposed renewal was published in the *Federal Register,* 45 FR 28028 (April 25, 1980). On May 22, 1980, CBG filed a petition for leave to intervene in accordance with 10 CFR 2.714. The NRC Staff responded to the CBG petition on June 11, 1980, and stated its position that CBG satisfied the requirements for interest and standing. On June 10, 1980, an Atomic Safety and Licensing Board was established to rule on petitions for leave to intervene and requests for hearing, 45 FR 40747 (June 16, 1980). The CBG petition to intervene and the Staff response are now pending before the Board, thus obviating the need for this office to respond to CBG's request to hold public hearings and to grant CBG formal intervenor status in such hearings on the matter of license renewal.

The safety issues discussed below have also been set forth as contentions in CBG's petition for leave to intervene in the license renewal proceeding. The position taken by the Staff in this decision, however, in no way precludes the litigation of these contentions in the license renewal proceeding before the Licensing Board should the Board admit them as issues in the proceeding.

Response to Safety Issues Raised by CBG

In its petition CBG contends the UCLA research reactor is unsafe and requests that it be shut down. The bases for its contention are that the effluent from the reactor exhaust stack exceeds the Argon-41 concentration permitted by 10 CFR Part 20, Appendix B, and that a license amendment changing the prescribed concentration limit set forth in the license which the NRC granted, failed to consider the potential radiation exposures within the adjacent Math Sciences building.

In January, 1975, the NRC Region V office conducted an inspection of the UCLA facility. The principal reason for the inspection was to review the potential effects of gaseous effluents on facilities that had been constructed around the reactor facility subsequent to its original licensing. Although it was believed that the licensee was complying with 10 CFR Part 20 effluent requirements, it was felt that the evolving facilities at UCLA were deserving of review from the perspective of good health physics practice. The inspection revealed that a gaseous effluent exposure pathway was likely for nearby adjacent rooftop facilities. It appeared appropriate to the inspector that the significance of the pathway be evaluated and during the inspection the licensee agreed to evaluate the radiological impact of effluents on nearby facilities. It should be noted that the licensee had previously considered such an evaluation but as of the time of the inspection, no

specific action had been taken. The inspection also resulted in two items of noncompliance:

1. Air drawn from the reactor room was not diluted to the specified flowrate and was not exhausted at the specified height above ground level.
2. The reactor room area radiation monitors and the gaseous effluent monitor had not been calibrated at the required frequency.

A question of the adequacy of the method used to calibrate the effluent monitor was also discussed with the licensee but not identified as an item of noncompliance. The licensee's reply to the Notice of Violation issued for the items of noncompliance was considered unacceptable by Region V. The reasons for this non-acceptance were twofold:

1. The time frame to correct the ventilation problem was too long and indefinite.
2. Upon calibrating the effluent monitor with improved techniques, the licensee determined that past calibrations were in error and actual effluent releases were about thirty times higher than previously thought.

Inasmuch as the area containing the stack was not a restricted area, the calibration error meant that the licensee had been exceeding the Technical Specifications and 10 CFR Part 20 limits on gaseous effluents from the stack. Region V summoned the licensee to the regional office for an enforcement conference for the purpose of obtaining commitments from the licensee to bring the facility into immediate compliance with the Technical Specifications. During this meeting the licensee agreed to maintain effluents from the stack to 10 CFR Part 20 concentrations by limiting reactor operations. Because these limitations would result in significant reactor usage cutbacks, the licensee proposed to request an amendment to the technical specification which would allow an increase in the limit for effluent concentrations discharged from the stack. The licensee was instructed to maintain the current emission concentration limitations until favorable action, if appropriate, on the amendment was taken. Implicit in these discussions was the understanding that the licensee would have to justify by detailed analysis that the radiological impact would be acceptable. In the analysis that accompanied the amendment request UCLA indicated that access to the roof area containing the stack's through a locked door with keys available only to maintenance personnel and reactor operations staff.

Limits on discharges of radioactive effluents to unrestricted areas around nuclear facilities are contained in Appendix B, Table II, of 10 CFR Part 20. Section 20.106(b) allows an applicant for a license to propose limits for

discharge higher than the values in Table II provided that the applicant demonstrates:

"(1) That the applicant has made a reasonable effort to minimize the radioactivity contained in effluents to unrestricted areas; and

"(2) That it is not likely that radioactive material discharged in the effluent would result in the exposure of an individual to concentrations of radioactive material in air or water exceeding limits specified in Appendix B, Table II of this part."

Section 20.106(a) also states that:

"For purposes of this section concentrations may be averaged over a period not greater than one year."

In a letter dated May 22, 1975, UCLA applied for an amendment to its facility operating license for the purpose of rectifying the discrepancy between its actual reactor building ventilation discharge system and the system as described in its technical specifications. A review of the proposed amendment against the provisions of the regulations cited above was undertaken by members of the NRC's Office of Nuclear Reactor Regulation. A request for additional information regarding the proposed amendment was made by the NRC in a letter dated August 14, 1975. UCLA responded to this request by letter dated August 26, 1975. Another supplement to the proposed amendment dated November 5, 1975, was submitted by UCLA in response to questions raised by the NRC Staff in a telephone call on September 22, 1975. On February 5, 1976, the NRC issued Amendment 10 to the UCLA operating license incorporating the proposed changes to the technical specifications.

In the licensee's submittals, UCLA provided the NRC with sufficient information to enable the Staff to conclude that: (a) the licensee made a reasonable effort to minimize radioactive effluents to unrestricted areas, and (b) there is reasonable assurance that no individual will be exposed to average concentrations of Argon-41 in excess of the maximum permissible concentration (MPC) values.

In its request for Amendment 10, UCLA utilized a reduction factor of 460 for the Argon-41 stack emissions concentration of 1.65×10^{-5}M Ci/cc, as measured at the discharge stack. UCLA obtained the value of the 460 by considering the fraction of time the reactor operated in a 45-hour week (utilization factor), the Math Science building occupancy factor, and meteorological dilution.

The reactor utilization factor averaged out to 8.4 hours per 45-hour week at 100 kw power equivalent, or 18.8%. UCLA utilized a meteorological

dispension factor of 0.115 based upon calculation methods published at that time by the U.S. Atomic Energy Commission.[1] This reflects the reduction in the concentration of the plume from the stack to the ventilation intake atop the Math Science building. On the basis of building use studies, UCLA assigned a person occupancy factor of 10% (see Appendix A) for the roof of the adjoining Math Science building.

The reciprocal of the multiplication of the above three values produced the aforementioned overall dilution factor of 460. This factor is extremely conservative. A more rigorous consideration of all the factors that would serve to dilute the discharge from the stack were not considered at the time by UCLA, possibly because it was recognized that further dilution factors were not necessary in order to be able to operate the reactor at the requisite maximum level of 100 kw for only 8.4 hours per 45-hour week.

In the review of Amendment 10, NRC recognized the conservativeness of UCLA's dilution factor, and issued the license amendment.

On the basis CBG's allegations, the NRC Staff re-reviewed UCLA's submittal information and the NRC Safety Evaluation Report (SER) to the UCLA Amendment 10. The Staff concluded that the findings of the original SER are still valid. The NRC Staff has performed a more rigorous series of calculations using more current information, techniques and available informaton, which is included as Appendix A to this decision.

Contrary to the CBG allegation, the NRC did take into account the inside of the Math Science building in granting UCLA its amendment. In the licensee's response of November 5, 1975, the air intakes of all buildings that might draw air from the reactor building stack plume were considered. Although not explicitly discussed in the SER for Amendment 10, the inside of the Math Science building cannot accumulate larger concentrations of the Argon-41 than those that occur on its roof. Therefore, the doses to individuals inside the building are pounded by the doses to individuals on the roof, which were found to be within allowable limits.

In addition to the relatively low environmental radiation exposure values cited above, UCLA is currently installing exhaust air delay tanks which will further decrease the levels of Ar-41 discharged from the facility.

Conclusion

I have determined for the reasons set forth above that there exists no adequate basis for issuing an order to shut down the UCLA research reactor. Accordingly, this portion of the request of CBG is denied.

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[1]Attachment to Concluding Statement of Position of the Regulatory Staff, Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low

FOOTNOTE CONTINUED ON NEXT PAGE

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), this decision will constitute the final action of the Commission twenty 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 September, 1980

[Appendix A has been omitted from this publication but is available in the NRC Public Document Room, 1717 H Street, N.W., Washington, D.C.]

FOOTNOTE CONTINUED FROM PREVIOUS PAGE
as Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactors. Draft Regulatory Guides for Implementation, February 20, 1974, Docket No. RM-50-2, U.S. Atomic Energy Commission Washington, D.C. 20645.

Cite as 12. NRC 407 (1980) **CLI-80-34**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-522**
50-523

PUGET SOUND POWER AND LIGHT COMPANY *et al.*
(Skagit Nuclear Power Project, Units 1 and 2)

October 9, 1980

Upon the Licensing Board's grant of applicant's motion to terminate this proceeding (insofar as it pertains to the Skagit site) during Commission consideration of an untimely petition to intervene submitted by three Indian tribes, the Commission dismisses the petition as moot and vacates the previous orders of the Licensing and Appeal Boards on the question of the tribes' intervention.

ORDER

In June 1978, three tribes of American Indians, the Upper Skagit Indian Tribe, the Sauk-Suiattle Indian Tribe, and the Swinomish Tribal Community, petitioned the Atomic Safety and Licensing Board presiding in this construction permit proceeding for permission to intervene into the proceeding almost three and one-half years after the original time for intervention had expired. While the Commission was considering whether the Tribes should be permitted to become parties to the licensing hearings (see Commission Order (January 16, 1980)), the Commission became aware that the applicants proposed to change the site of the project from the Skagit River in northwest Washington to the Hanford Reservation in southeast Washington. On July 16, 1980, applicants moved before the presiding NRC Licensing Board for permission to amend the application and conclude the Skagit licensing proceeding. On August 27, 1980, the

Licensing Board granted the motion, providing, among other things, that the "proceeding shall be deemed to have been concluded insofar as the Skagit site is concerned and no further evidentiary hearings thereon are contemplated." Licensing Board Order, ¶ 4(e) at 2 (August 27, 1980).

Because the underlying administrative proceeding has been terminated and because the matter appears unlikely of repetition as it affects these parties and these proceedings, the Commission holds that the petition for untimely leave to intervene is dismissed as moot and the administrative orders of the Licensing Board and the Atomic Safety and Licensing Appeal Board on the question of the Tribes' intervention are vacated. *United States* v. *Munsingwear,* 340 U.S. 36 (1950).

It is so ORDERED.

For the Commission

John C. Hoyle
Acting Secretary of the Commission

Dated at Washington, DC,
this 9th day of October 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. STN 50-556**
STN 50-557

PUBLIC SERVICE COMPANY OF OKLAHOMA, *et al.*
(Black Fox Station, Units 1 and 2)

October 9, 1980

Upon consideration of a certified question concerning return of a report (generally known as the Reed Report), which had been provided to a Licensing Board and was subject to a protective order, and two Freedom of Information Act appeals seeking release of the report, the Commission decides not to return the report and evenly divides on whether to withhold the report. Because a majority of the Commission does not vote to withhold the document under the FOIA, the document must be disclosed. Accordingly, the protective order is vacated.

FREEDOM OF INFORMATION ACT: WITHHOLDING OF DOCUMENTS

Under the FOIA, a Commission decision to withhold a document from the public must be by majority vote.

MEMORANDUM AND ORDER ON CERTIFIED QUESTION: RETURN OF GE NUCLEAR REACTOR STUDY

On May 30, 1979, the Licensing Board in this proceeding certified to the Commission the question whether the General Electric Nuclear Reactor Study and its related Sub-Task Force Reports, which is generally known,

and hence will be referred to, as the Reed Report (for its principal author-director), should now be returned to General Electric. The Reed Report was obtained in confidence and is subject to a protective order. For reasons described more fully in this opinion, the Commission believes that it should not be returned.

General Electric has characterized the Reed Report as a product improvement study intended to enhance the availability and performance of GE's Boiling Water Reactor. When the Reed Report was completed in 1975, GE determined that 27 safety-related issues were raised in the context of the Report, that NRC was aware of each of them, and, thus, that GE need not report them to the NRC under section 206 of the Energy Reorganization Act. However, GE did inform the NRC of the scope and purpose of the Report, its competitive sensitivity, and GE's own review of the Report for new or significant safety information. In October 1978 in the Black Fox proceeding, concerning whether to permit construction of two GE boiling water reactors at an Oklahoma site, intervenors, Citizens Action for Safe Energy, sought to cross-examine applicants' witnesses from General Electric with regard to the Reed Report. The Board suspended the examination and attempted to obtain a copy of the Report for *in camera* inspection by the parties, under a protective order, as to the 27 safety issues. Rather than produce the Report, General Electric, not a party to the Black Fox proceeding, offered to extract portions of the Report arguably pertaining to safety and to make those extracts available under protective order. The Board rejected the offer and issued a subpoena for the Report; GE responded with a motion to quash the subpoena. On January 2, 1979, GE proposed a settlement which the Board approved, thereby rendering moot the motion to quash.

The pertinent terms of the protective order are (1) the Reed Report is available to the Board in confidence, (2) verbatim extractions are available to counsel insofar as they relate to Intervenor's contentions and Board questions, and (3) the Reed Report is available to Intervenor's counsel to evaluate the faithfulness of the extractions. The parties also signed protective agreements which limited access to and use of the Report. After *in camera* evidentiary hearings on February 20, 27 and 28, 1979, the extractions were admitted into evidence *in camera.* The Reed Report itself was never admitted into evidence. Certfication to Commission at 5.

On February 13, and March 7, 1979, the Board received requests under the Freedom of Information Act (FOIA), 5 USC 552, for the Reed Report. Both requests were denied and no appeals were filed.[1] After these FOIA denials, GE moved to have the Board return the Reed Report.[2] This motion was also denied, in part because the Board was not bound by any Protective Agreement to return the Report and because of the possibility of administrative appellate review of the Board's decision.

The Board certified to the Commission on May 30, 1979 the question whether the Reed Report should be returned to GE. In the certification request, the Board Chairman recommended that the Commission return the report.

Before the Commission could act on that question, the Sunbelt Educational Foundation's FOIA request was filed on June 5, 1979. The request was denied by the Board on June 18 on the same grounds as the prior requests. An appeal was filed with the Commission on June 28. Another FOIA request, from the Prairie Alliance filed on September 26, 1979, was denied on the same grounds. Its appeal was filed November 12 and became consolidated with the existing appeal.

These appeals raised several important and controversial issues about the FOIA, including whether the Reed Report may be considered an "agency record" — a question of first impression for the Commission — or whether the Reed Report may be considered confidential for purposes of Exemption 4. 5 USC 552(b)(4). After extensive consideration, including several consultations with the Department of Justice, the Commission concluded that the Report should be deemed an "agency record" owing to NRC's apparent substantial control of the document as against any GE right of return. At the same time, the NRC staff reviewed a copy of the Report at GE's offices to determine whether to grant a GE request that the Report be treated as proprietary information. *See* 10 CFR 2.790. During the pendency of the appeal, the staff advised the Commission that it did not have an adequate basis to conclude that release of the Report would cause substantial harm to GE's competitive position. Finally, the Commission considered whether disclosure of the Report would impair the NRC's ability to receive similar information in the future. The Commission was evenly divided on this question. Chairman Ahearne and Commissioner Hendrie would withhold the Report; Commissioners Gilinsky and Bradford voted to release it. Commissioner Bradford has noted his own view that the

[1]The March 23 and 29 denials noted (1) that the Reed Report came into possession of the Board pursuant to a protective order, (2) that GE has submitted an affidavit asserting proprietary status, and (3) that the NRC was in the process of reviewing the claim.

[2]By letter dated April 13, 1979, GE assured the Board that if either the Licensing or Appeal Board desired to review the Reed Report in the future, it would be made available.

NRC's examination of this document flowed not from the casual voluntary disclosure of its existence to two Commissioners at a luncheon but from the fact that its existence was revealed to the public in Congressional testimony some months later.

Under the FOIA, because a majority of the Commission did not vote to withhold the document, it must be released and, therefore, both appeals have been granted by the Commission. The Commission intends to make a copy of the Reed Report available for inspection and copying in 20 days at its Public Document Room in Washington.

Accordingly, based on the above considerations, the Commission has decided that the Board should not return its copy of the Reed Report to the General Electric Company. The Commission vacates the Board's protective order and directs that the Board's copy of the Report be transmitted to the Office of the Secretary. This matter is remanded to the Board for other and further action not inconsistent with this Order when the Report is made publicly available.*

It is so ORDERED.

For the Commission

John C. Hoyle
Acting Secretary of the Commission

Dated at Washington, DC,
this 9th day of October, 1980.

The Commission issued an addendum to its decision on November 4, 1980, consisting of separate statements by Commissioners Hendrie and Bradford. These statements follow.

SEPARATE VIEWS OF COMMISSIONER HENDRIE, CONCURRING IN PART AND DISSENTING IN PART

I am advised by the Office of the General Counsel that the Commission may not return the General Electric Nuclear Reactor Study, known as the Reed Report, to GE during the pendency of Freedom of Information Act claims for the Report. In that aspect of the October 9 order, I concur. However, I strongly disagree with the split Commission decision to disclose the Reed Report. NRC acquired the Reed Report through GE's voluntary cooperation on the written understanding that the confidentiality and privileged nature of the document would be respected by the Commission. Under these circumstances it is patently unfair to treat the document as an agency record and release it. The Commission's split decision to release the Reed Report welches on its assurances to GE, signals the industry to be much more circumspect in its dealings with NRC, and will hamper the

Commission in the future in obtaining important information promptly from vendors and licensees. In short, not only is the Commission's decision to release the Reed Report a breach of its word; it is also dismal regulatory policy.

For this we can thank not only the Commissioners who have voted for release but the Department of Justice as well. Urged by one of its members the Commission decided to solicit the Department's advice on whether the Reed Report was an agency record for purposes of the Freedom of Information Act. The Department advised that it was an agency record and that the Department would refuse to defend in court the contrary position. It is well to recall at this point that the Reed Report is a product improvement study intended by GE to study the marketing and economic aspects of the availability and performance of GE's boiling water reactors. NRC had no involvement in the creation or core planning and execution of the document, and it was created without regard to any NRC regulatory program. When it was completed in 1975 GE reviewed the Report to determine whether it contained any safety-related information reportable to the NRC under Section 206 of the Energy Reorganization Act. GE concluded that it did not since NRC was aware of all safety issues mentioned in the Report, but nevertheless reported the results of its review to the NRC Chairman. The NRC senior staff thereupon reviewed the Reed Report in GE offices in 1976, concluded that the focus of the Report was marketing rather than safety, and that the NRC did not need a copy of the Report for its work. The matter was thoroughly explored by Congress 4-1/2 years ago. See Hearings on "Investigation of Charges Related to Nuclear Reactor Safety," before the Joint Committee on Atomic Energy, 94th Cong., 2d Sess., Vol. 1 (Feb.-March 1976).

As I noted at the outset a Commission Licensing Board later obtained the Reed Report in confidence from GE during administrative hearings on the licensing of the Black Fox nuclear power plant. An appropriate protective order, recognizing that confidence, was entered into. Given these facts the Department's position that the report is an NRC record seems to me wholly misguided. The Department's advice revealed a fundamental misundertanding of the facts and a patent lack of deference due the views of this agency on the importance to its regulatory charter of promptly obtaining information that might have a bearing on nuclear safety issues. The NRC regulatory program has always relied on voluntary industry cooperation, especially in providing access to information that might otherwise not have been required to be submitted to the NRC. Disclosure of such information, provided in confidence to assist the NRC, will undermine that important aspect of the agency program. Groups, such as GE, will be less likely to produce such documents for NRC's use, and the

Commission will become mired in subpoena enforcement proceedings to procure the information it wants. Even if NRC were to prevail in such proceedings, the cost to the agency in time, resources, and lack of prompt information would be high.

For these reasons I believe that disclosure of the Reed Report is a grave mistake. This should be an object lesson for those who would deal with NRC with any sense of trust. From this turn of events, I must strongly dissent.

STATEMENT OF COMMISSIONER BRADFORD

This case does not turn on a breach of confidence by the Nuclear Regulatory Commission. The extension of confidential protection to the Reed Report depended on a 1978 NRC staff conclusion, specifically described as preliminary, that the Report contained proprietary information. Neither the current staff position nor the Commission opinions dispute that in fact the Reed Report does not contain proprietary information. Without proprietary information or some other basis for confidentiality, an agency record cannot be withheld given the strong public interest in full access to nuclear safety information that is embodied in our applications of the Freedom of Information Act. The Nuclear Regulatory Commission protected this document for the five years during which it was believed to contain proprietary information. Indeed, it remains protected to this day in order that General Electric may have its day in court.

To understand fully why the Nuclear Regulatory Commission's relationship with the nuclear industry is not at issue here, one must begin with an accurate history of the NRC's dealings with the Reed Report. The most significant points are as follows:

1) The Reed Report was not reported to the NRC. Its existence was disclosed orally in "very general"[1] terms to the Chairman and one other Commissioner at a luncheon at the San Francisco airport on August 21, 1975. This is not "reporting" as that term is normally used in nuclear regulation. Of course, GE was not required to report the document. However, claims that GE voluntarily reported it to the NRC are excessive.

2) The Reed Report was mentioned in passing to the New York Society of Security Analysts by GE Chairman Reginald Jones in a question-and-answer session on December 17, 1975. The contents of the Report were not

[1]"Investigation of Charges Relating to Nuclear Reactor Safety," Hearings of the Joint Committee on Atomic Energy, February 18, 23, and 24, and March 2 and 4, 1976. Volume II, at p. 1774.

mentioned, other than that they "confirmed" GE's general approach to the nuclear business. The document was described as "overwhelming....a five-foot shelf."

3) The general nature of the Reed Report became public in February, 1976, not as a result of the luncheon five months earlier, but because three GE engineers resigned in protest of safety deficiencies. These engineers discussed the Report in testimony before Congress on February 18, 1976, and GE then described it further at subsequent Joint Committee sessions.

4) Beginning the following Sunday, February 22, nine days before the NRC was due to respond to the former GE engineers' testimony, two members of the NRC staff reviewed the Report for the first time. This review was explicitly "as a result of the February 18 testimony,"[2] not the August 21 luncheon. It did conclude that, while numerous safety matters were discussed, no new safety concerns were raised by the document. It made no determination as to whether the Report contained proprietary information. Instead of a five foot shelf, the document reviewed totaled 713 pages and was three and one-half inches thick.

5) Seventeen months later, the NRC staff did find that the three and one-half inch version of the Reed Report was proprietary information and so informed General Electric in a July 10, 1978 letter from Roger Mattson to Glenn Sherwood.

6) On August 25, 1978, the Commission was advised by its Office of Policy Evaluation that that office could not "see the basis for categorizing the entire list of items as proprietary."

7) In a December 27, 1978 letter to Congressman John Dingell, the Commission made clear that it considered the staff's August determination regarding proprietary information to be tentative. Specifically, it noted that the Report was the subject of agency litigation and indicated that "the Commission normally treats documents of this type as proprietary *pending a final determination* (emphasis added)." The letter, itself a public document, states that General Electric will be notified.

8) On October 18, 1978, the Licensing Board in the *Black Fox* case issued a subpoena requiring GE to produce the Reed Report. GE moved to quash the subpoena on October 30. On January 2, 1979, GE proposed a settlement which the Board approved, thereby rendering moot the motion to quash. The Board's order noted that the Report was available "in confidence." The order makes clear that this "in confidence" status is based upon the proprietary information contained in the document.

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[2]*Ibid,* p. 1495.

9) On June 5, 1979, a Freedom of Information Act request for the Reed Report was filed by the Sunbelt Educational Foundation. This request was denied by the Black Fox Licensing Board on June 18. An appeal was taken in a letter of June 28.

10) On March 19, 1980, in the context of the Sunbelt FOIA appeal, the General Counsel asked the Justice Department whether the document constituted an agency record within the meaning of the Freedom of Information Act. This request was made as a result of a 3-2 Commission vote (Commissioners Hendrie and Ahearne dissenting). The Department replied that the Reed Report was an agency record. Both the Commission and the Justice Department took the position that if the document contained proprietary information, such information could still be withheld.

11) On September 9, 1980, the NRC staff in effect revoked the July 10, 1978 letter and concluded that "General Electric has not provided the agency with sufficient bases to support the view that public disclosure of the Reed Report would cause substantial harm to its competitive position." Since this memorandum notes that the Reed Report is now some five years old, it may not be entirely inconsistent with the equally brief determination that the document was proprietary that was made in July 1978, when the material was somewhat more current.

12) On October 9, 1980, the Commission split 2-2 and thereby failed to apply any of the Freedom of Information Act exemptions. No Commissioner argued, then or now, that the proprietary information exemption was applicable.

• • •

The foregoing chronology makes very clear that the Commission's ability to cooperate with the nuclear industry is not at issue here. The only difficult question in this case is the narrow one presented by the Commission's having to disregard the fact that the document in question is in the Licensing Board's possession "in confidence." In this context, two points must be understood:

First, given that the document is an agency record, the confidence in which it is held derives entirely from General Electric's claim that it is proprietary. Had the NRC review shown it to be proprietary, it would have been withheld.

Second, the fact is that the subpoena for the Reed Report would very likely have been enforced had GE not entered into the confidential agreement. Had that happened, the document would in all likelihood be public already. Hence, to term this phase of the case a example of

"voluntary" cooperation is again somewhat misleading. The alternative from GE's point of view was not to withhold the document; it was to be compelled to produce it. Even granting the possibilities of delay in litigation, it is a mistake to visualize this as a situation in which the company had a choice that would have enabled it to keep the document to itself and chose instead to cooperate "voluntarily."

In conclusion then, assertions to the effect that the NRC will no longer be able to rely on voluntary industrial cooperation "especially in providing access to information that might not have otherwise have been required to be submitted to the NRC" are unfathomable. Vendors and utilities remain under an affirmative duty to provide safety-significant information. That has never been an issue in this case. If the NRC requires access to documents to verify their lack of safety significance, visits to company offices or other protective arrangements remain as available and as effective as they have been for five years in this case. Licensing proceedings in which documents containing proprietary information must be reviewed will not be subverted by the Freedom of Information Act because proprietary information will be protected. Self-flagellating statements to the effect that the NRC is no longer to be trusted are more likely to undermine cooperation than is a clear understanding of what has actually occurred in the case of the Reed Report.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-295**
50-304
(Storage Pool Modification)

COMMONWEALTH EDISON COMPANY
(Zion Station, Units 1 and 2)

October 2, 1980

The Appeal Board affirms the Licensing Board's decision (LBP-80-7, 11 NRC 245 (1980)) authorizing the Director of Nuclear Reactor Regulation to grant an application to enlarge the storage capacity of the spent fuel pool for the facility.

OPERATING LICENSES: TECHNICAL SPECIFICATIONS (STATUS)

Technical specifications are part of the operating license. Licensees may not disregard or change them without the NRC staff's consent and severe sanctions may be imposed for their violation. 42 USC 2232(a); 10 CFR 50.36 and 50.100.

OPERATING LICENSES: TECHNICAL SPECIFICATIONS (STANDARDS)

The Atomic Energy Act and the regulations which implement it contemplate that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations on reactor operation is deemed necessary to avoid a situation giving rise to an immediate threat to the public health and safety.

RULES OF PRACTICE: BRIEFS

Briefs in support of exceptions must specify the precise portion of the record relied upon in support of the assertion of error. 10 CFR 2.762(a).

LICENSING BOARDS: DELEGATED AUTHORITY OR JURISDICTION

A licensing board's jurisdiction is limited by the Commission's notice of hearing and extends only to issues fairly raised by those matters the Commission has placed before it.

APPEARANCES

Assistant Attorneys General Susan N. Sekuler and **Anne K. Markey,** Chicago, Illinois (**Attorney General Scott** with them on the brief), for the State of Illinois, **intervenor.**

Messrs. Michael I. Miller and **Philip P. Steptoe,** Chicago, Illinois, for the Commonwealth Edison Company, **applicant.**

Mr. Richard J. Goddard (**Mr. Steven C. Goldberg** with him on the brief) for the Nuclear Regulatory Commission staff.

DECISION

Introduction. Commonwealth Edison's application to enlarge the storage capacity of the spent fuel pool at its nuclear generating station in Zion, Illinois, was referred in due course to a public hearing before a Licensing Board. The State of Illinois intervened in the proceeding and opposed the application. After an evidentiary hearing, the Board authorized the Director of Nuclear Reactor Regulation to grant the utility's application subject to specified conditions. LBP-80-7, 11 NRC 245 (1980). Now before us is the State's appeal. It challenges a number of the Board's factual findings and legal rulings; we examine each in turn.

1. **Corrosion.** A principal issue in the proceeding below was whether the new fuel racks the applicant proposed to install might eventually corrode and swell, possibly causing used fuel elements to stick as they are being inserted or withdrawn. This could create a situation that might allow radioactivity to escape to the environment. The Licensing Board examined the problem in detail. For reasons spelled out clearly and thoroughly in a

well-annotated opinion, the Board found the risk involved minimal and adequate steps being taken to guard against it. 11 NRC at 268-78.

Illinois challenges these findings. Its brief, however, contains no serious attempt to show either that the record was inadequate to support them or that the Board misunderstood or ignored evidence pointing to a different conclusion. The crux of Illinois' argument is legal rather than factual. The State contends that the findings are flawed because they do not rest on proof "that swelling of the racks, due to corrosion, was a null proposition." (Brief at 1.) Stated another way, Illinois asserts that "[t]he Applicant did not meet its burden to show conclusively that swelling would not occur or that its plan to alleviate swelling was final and effective." (Brief at 4.)

The State misconceives the nature of the applicant's evidentiary burden. It was not obliged to meet an absolute standard but to provide "reasonable assurance" that public health, safety and environmental concerns were protected, and to demonstrate that assurance "by a preponderance of the evidence."[1] This standard is set by the Administrative Procedure Act which governs Commission adjudicatory hearings.[2]

We have reviewed the evidence before the Licensing Board in the light of that standard. The Board's resolution of the corrosion point reflects not merely the preponderance but the overwhelming weight of the credible evidence in the record on the question. The reasoning and the basis for the Board's conclusions are fully elucidated in its decision; nothing would be gained by our restating them. Accordingly, we affirm this point on the opinion below.[3]

2. **Failure to impose "Technical Specifications."** During the course of the proceeding the applicant made a number of commitments. Among other things, it agreed to undertake a corrosion surveillance program, to test whether the fuel assemblies can be safely inserted in the racks and to verify that the tubes and racks contan sufficient boral plates to preclude the occurrence of criticality in the spent fuel pool. The Board's opinion reflects those commitments.[4]

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[1]*Consolidated Edison Company of New York* (Indian Point Station, Unit No. 3), CLI-75-14, 2 NRC 835, 839 fn. 8 (1975), expressly affirming on this point ALAB-188, 7 AEC 323, 356-57 (1974), and ALAB-287, 2 NRC 379, 387 (1975).

[2]See 42 USC 2231; *Duke Power Company*(Catawba Station, Units 1 and 2), ALAB-355, 4 NRC 397, 405 fn. 19 (1976).

[3]We often review the evidentiary basis for our rulings on technical issues even when they coincide with those of the Board below. When, however, that Board's analysis of the evidence and the reasons for its findings are well displayed, as is here the case, there is no occasion for such duplication.

[4]See 11 NRC at 277, 280-82, and 295-96, where the nature and purpose of these commitments are fully explained.

The State argues that the applicant's commitments are insufficient to protect the public health and safety. According to Illinois, they are "voluntary" and "unenforceable." Pointing to 10 CFR 50.59, the State argues that a licensee may terminate such commitments at will without advance notice to the staff. So long as the change does not affect technical specifications or involve an unreviewed safety question, the State asserts, the licensee's only obligation under the regulations is to maintain a record of the change available for NRC inspection. In contrast, "technical specifications" are part of the license itself. These may not be disregarded or changed by the licensee without the staff's consent and severe sanctions may be imposed for their violation. 42 USC 2232(a); 10 CFR 50.36 and 50.100. Illinois contends that the Board erred in not raising the applicant's commitments to the level of technical specifications.

What matters should and should not be made "technical specifications" is not entirely free from doubt. We traced the history of this requirement in our recent *Trojan* decision (which also concerned an application to expand the storage capacity of a spent fuel pool) from its statutory origin through successive Commission implementing regulations and the staff's regulatory guides.[5] It is sufficient to note here our conclusion in *Trojan* that, while technical specifications may be required in connection with the operation of a spent fuel pool (9 NRC at 273),

> there is neither a statutory nor a regulatory requirement that every operational detail set forth in an applicant's safety analysis report (or equivalent) be subject to a technical specification, to be included in the license as an absolute condition of operation which is legally binding upon the licensee unless and until changed with specific Commission approval. Rather, as best we can discern it, the contemplation of both the Act and the regulations is that technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation *is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.* (Emphasis added; footnote omitted).

Since that opinion was handed down (and immediately prior to oral argument in this case) the Commission has published notice[6] that it is considering establishing a new standard for determining which safety

[5] *Portland General Electric Company* (Trojan Plant), ALAB-531, 9 NRC 263 (1979).

[6] We were unaware of this notice at the time of the argument. Regrettably, neither the staff — which should have known of it — nor any of the other parties called our attention to it.

requirements must be reflected in technical specifications and which should be placed in other categories.[7] In its notice, the Commission expressed concern

> that the increased volume of technical specifications may be decreasing the effectiveness of these specifications to focus the attention of licensees on matters of more immediate importance to safe operation of the facility.[8]

We agree with the Board below (11 NRC at 277) that the effects of corrosion and the objects of the testing and surveillance programs in question are not of the gravity and immediacy alluded to in *Trojan* that calls for translation from commitments to technical specifications. Nothing in the Commission's proposal for rulemaking suggests otherwise. On the contrary, we think that these matters are clearly not of "immediate importance to the safe operation of the facility" that the Commission believes should be incorporated into operating licenses.

This does not mean the State's concerns are frivolous. The slow action of corrosion and a gradual loss of neutron-absorbent material can present serious problems if left unchecked. However, Illinois' fears — that the commitments to guard against these possibilities might be withdrawn without prior staff notification or approval and that the means for enforcing them are inadequate — can be allayed without freighting the applicant's license with additional technical specifications. The applicant has pledged to the staff, to the Licensing Board and to this Board not to change or drop those commitments without prior staff approval; it has expressly acknowl-

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[7] 45 FR 45916 (July 8, 1980). We furnished the parties copies of this Advance Notice of Proposed Rulemaking with the suggestion that they might care to comment to the Commission on the proposal.

[8] 45 FR at 45917. The Commission elaborated that point with the further observation that (*ibid.*):

> While each of the requirements in today's technical specifications plays a role in protecting public health and safety, some requirements have greater immediate importance than others in that they relate more directly to facility operation. These are the requirements that pertain to items which the facility operator must be aware of and which he must control to operate the facility in a safe manner. To a large extent, the relative importance of these requirements, as distinguished from those related to long term effects or concerns, has been diminished by the increase in the total volume of technical specification requirements.
>
> Moreover, the increased volume and detail of technical specifications and the resultant increase in the number of proposed change requests that must be processed, has increased the paperwork burden for both licensees and the NRC staff. This is because 50.36 requires that technical specifications be included in each operating license; and thus, any proposed change, regardless of its importance to safety, must be processed as a license amendment. For changes involving matters of lesser importance to safety, the processing of a license amendment with the associated increased paperwork has had no significant benefit with regard to protecting the public health and safety.

edged that those promises were made to obtain favorable action on the proposal now before us. (App. Tr. 60). We perceive no reason why that pledge should not be formally incorporated in our own order in this case, which is of course enforceable to the same extent as a Commission decision.[9] This disposition settles the permanence and enforceability of the applicant's commitments without trampling on any party's rights and without having to predict the outcome of the anticipated rulemaking proceeding. We have neither the prescience nor the predilection to attempt the latter endeavor. The course we have chosen avoids the need to venture into those difficult and uncharted waters.

3. **Negligent loss of water from the spent fuel pool.** Should the liquid in which they are immersed be lost through boiling, evaporation or other means, the fuel assemblies stored in the pool would heat up rapidly and, intervenor suggested, this could lead to potentially serious consequences. See 11 NRC at 266-67. After noting (among other things) the agreement of the State's own witness that three to six days at a minimum would be available in which additional water could be added to the pool to prevent this occurrence, as well as the witness' concession that adequate supplies of "makeup water" are available at the site for this purpose, the Board found "no reasonable basis...that such an accident might be allowed to occur through neglect." 11 NRC at 267.[10]

Illinois excepted to that finding. According to the State, it fails to "confront the facts on which appellant relies and the legal inferences those facts suggest," citing *Wingo* v. *Washington,* 395 F.2d 633, 636 (D.C. Cir. 1968). Unfortunately, we are not told what "facts" the Board overlooked. Although required to specify "the precise portion of the record relied upon in support of the assertion of error" (10 CFR 2.762(a)), Illinois' brief on this point is devoid of references to the record. We assume that the State is relying on Dr. Resnikoff, one of its witnesses, because his prepared testimony recited that the pool water might be allowed to boil away "under a major accident scenario or simply through neglect."[11] At the hearing, this witness expanded on what he meant. He explained that "if you simply turn

[9]We do not imply that we have cause to believe that the applicant would not abide by its commitments; we simply take up applicant's proposal in the spirit in which it was made. See App. Tr. 60. We are confident that, without further guidance from us, the staff will be able to record the commitments thus embodied so that its inspectors can insure compliance.

[10]In response to a question posed by the Board itself regarding the loss of pool water as a result of severe leakage, evidence was presented which led that Board to find, in addition, that the design features of the pool should preclude the possibility of a severe drainage accident in the fuel pool. 11 NRC at 287-88.

[11]Tr. fol. 1528 at 1, 3, 19-20.

off the cooling system...and walk away," an accident could follow in about ten days,[12] but acknowledged on cross-examination that this would require some "major disruption in our society" in the nature of an act of God or war.[13] A major societal disruption, however, is not the equivalent of "neglect"; responsibilities for the former lie elsewhere than on the applicant.[14] We have discovered no other indication in the record about how the pool water might boil away through inattention and Illinois points to none.

In short, there is no support for the apparently offhand suggestion of the State's witness that applicant's employees might irresponsibly walk away from the reactor or carelessly overlook a boiling spent fuel pool. In these circumstances, the applicant's citation to *Vermont Yankee Nuclear Power Corp.* v. *NRDC* is indeed apt. The Supreme Court cogently observed in that 1978 decision that (435 U.S. 519, 553-54):

> [A]dministrative proceedings should not be a 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 to the agency's attention, seeking to have that agency determination vacated on the ground that the agency failed to consider matters "forcefully presented."

The Licensing Board gave the speculations of Illinois' witness appropriate consideration.

4. **Access to "makeup water" in the event of a severe accident.** Illinois next asserts that there is no "factual evidence to show that in the event of a severe accident, where high amounts of radiation are present and the existing automated makeup water systems malfunction, it can assure adequate access to manual sources of makeup water to preclude any danger to the public health and safety." (Brief at 17). The Licensing Board did not agree. Placing reliance on uncontradicted testimony from witnesses before it, the Board below found that

> [T]he pumps and heat exchangers of the spent fuel pool cooling system and the controls to the makeup water supply are located in a room in the fuel building which has walls and ceiling of concrete. Such equipment and controls are accessible under any circumstances (even if one of the reactors should experience a LOCA) through a railroad trackway entrance to the fuel building, and this could be done without going past the spent fuel pool.

11 NRC at p. 265 (record citations omitted).

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[12]Tr. 1560-61.
[13]Tr. 1562.
[14]*See, Siegel* v. *Atomic Energy Commission*, 400 F.2d 778 (D.C. Cir. 1968).

The testimony cited supports that finding; the State points to no contrary evidence. Neither does it attempt to show that the Board relied upon witnesses who were unqualified or unknowledgeable. The State's position is thus not well-taken.

5. **Exclusion of the testimony of Peter Cleary.** (a) In addition to matters the intervenors put in contest, the Licensing Board raised issues of its own. Among them was Board Question 4(b), which inquired:

> As a result of the proposed modification of the spent fuel pool and the proposed operation of the Station with increased spent fuel storage capacity, will it be necessary to modify the Physical Security Plan, Safeguards Contingency Plan, or the Emergency Plan for the Station?[15]

The State of Illinois offered the prepared written testimony of Peter Gabriel Cleary in response to the Board's question. (Tr. 1582). After examining Mr. Cleary on *voir dire* (Tr. 1582-1601), the applicant (with the staff's support) moved to exclude his testimony and the accompanying exhibits. As grounds for doing so, the parties argued that the proposed testimony was irrelevant as well as that the witness lacked expertise and his testimony objectionable hearsay. (Tr. 1593-94, 1600-01). The Board granted the motion on the first ground, explicitly ruling that Mr. Cleary's testimony did not address the question asked. (Tr. 1610-11).

On appeal, the State attempts to demonstrate that Mr. Cleary was indeed an expert and that his testimony was not barred by the hearsay rule. (Br. 18-21, 23). We need not and do not reach those questions because the Licensing Board was plainly right in excluding his evidence as irrelevant.

As the Board correctly perceived,[1] its jurisdiction was limited by the Commission's notice of hearing.[16] That jurisdiction extended only to issues fairly raised by the application to modify the spent fuel pool, the sole matter which the Commission had placed before it.[17] This was why Board Question 4(b) was drawn narrowly and sought evidence only about whether the Zion facility's emergency plan needed to be changed "as a result of the proposed modification of the spent fuel pool and the proposed operation of the Station with increased spent fuel storage capacity." The Board was not empowered to reconsider whether the Zion facility should have been licensed to operate in the first instance, or whether the emergency plan approved in conjunction with that license was generally in need of revision.[18] Mr. Cleary's proposed testimony, however, addressed only those

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[15] 11 NRC at 283.

[16] *Public Service Company of Indiana* (Marble Hill Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976).

[17] See, 43 FR 30938 (July 18, 1978) (Notice of Opportunity for Hearing).

[18] *Portland General Electric Company* (Trojan Plant), ALAB-534, 9 NRC 287, 289 fn. 6 (1979).

broad issues and ignored the narrow one posited by Board Question 4(b). (Indeed, on *voir dire,* Mr. Cleary virtually disclaimed knowing anything about the latter. Tr. 1594-99). His evidence was therefore irrelevant and the Board did not err in excluding it for that reason.

The State's offer of proof, made immediately following the rejection of Mr. Cleary's testimony, in no way undercuts that ruling. The offer took the form of counsel's elicitation from Mr. Cleary of the gist of the evidence he would have given, had he been allowed to testify. The Board had just explained that his testimony was being excluded for failure to address Board Question 4(b) and counsel was not interrupted in making the offer of proof. Nevertheless, Mr. Cleary was not asked to address how or why the emergency plan needed modification because the storage pool capacity was being enlarged, nor did he represent that he was prepared to do so. (Tr. 1611-16).

Illinois' brief on appeal similarly makes no claim that Mr. Cleary's evidence would have answered the Board's specific question. Rather, it too confirms that he was only going to explore broad questions about the adequacy of the existing emergency plan. (Brief at 22). But those were not at issue in the hearing and the Board below was not only authorized but expected to keep out unrelated evidence. 10 CFR 2.757(b); 5 USC 556(d). Mr. Cleary's testimony was therefore properly excluded as irrelevant.

(b) Illinois also contends that the Board erred in finding no need to change the emergency plan because of the proposed license amendment. Its position rests entirely on the allegation (Br. 24) that "the State had no opportunity to comment on the record on problems that exist in the emergency plan." But that position is without support in light of our ruling upholding the exclusion of Mr. Cleary's testimony. The State had ample opportunity to address the adequacy of the plan insofar as it was in issue, but it failed to do so.

6. **The need for groundwater monitoring.** (a) Although the parties had asked to withdraw the issue, the Licensing Board on its own initiative retained in the proceeding the question whether the proposed pool modifications required groundwater in the vicinity to be monitored for radioactive contamination. 11 NRC at 292. After receiving and reviewing evidence on the question, the Board concluded that "the proposed modification [of the spent fuel storage pool capacity] will not in itself increase the environmental impact of the [Zion] Station." *Id.* at 294.

The Licensing Board explicitly recognized that the general need for groundwater monitoring "involves matters beyond the scope of this proceeding." *Id.* at 293. The Board nevertheless observed in its opinion that the plant is inside the Zion city limits, fronts on Lake Michigan, and is proximate to a popular beachfront park and indicated concern that

groundwater at the Zion facility was not now being monitored. The Board noted that a current staff regulatory guide (No. 3.44 at 2.5) points out the importance of doing so in the vicinity of spent fuel storage pools. *Id.* at 293-94.

(b). Illinois does not take specific issue with the finding that the fuel pool modifications do not themselves increase the risk of groundwater contamination. Rather, the State asserts that groundwater monitoring at Zion is generally necessary "to protect the public health and safety" and that the Licensing Board erred in not requiring it. (Br. 25-26). Although the State points to no evidence that supports its assertion, we reviewed the record bearing on the question anyway. We agree with the Licensing Board that expanding the storage capacity of the spent fuel pool will not increase the risk of leakage.[19] We also concur with that Board that the general necessity for groundwater monitoring was not before it in this hearing and therefore it did not err in declining to order the applicant to undertake such a program.[20]

With all deference, however, we cannot endorse the Board's implied criticism of the current status of groundwater monitoring. The subject of underground water flow was previously explored in the environmental proceedings leading to licensing the facility, where it was noted that drainage from the site is directly into Lake Michigan.[21] The lake water has been and is now being monitored for radioactive contaminants.[22] Nothing in this record suggests that the current program inadequately protects the public health and safety. If Illinois has *evidence* that indicates otherwise — and we note again that the State was prepared to drop the matter entirely earlier in the proceeding — it should be brought directly to the attention of the Director of Nuclear Reactor Regulation. He has both the authority and the responsibility to order the groundwater at Zion monitored, *if* a need for

[19]Leakage through the pool liner is caught by channels that pipe it to collecting tanks for reprocessing as liquid radwaste. Tram, Tr. fol 564 at 10. A sampling test conducted during the hearings determined the total daily leakage amounted to roughly one quart. 11 NRC at 289 and Tr. 588-89, 1921-23, 1926-29.

[20]See point 5, *supra.* at426.

[21]See *e.g.*, the Final Environment Statement (December 1972) at II-5. That Statement notes in II.E.2 that "The geological structure in northeastern Illinois provides for an eastward flow of groundwater down-dip along the bedding plane tilt. The Zion area lacks regions of complex faulting which would tend to modify the direction of flow." The subject was also reconsidered when, at the applicant's request, the staff amended the technical specifications to eliminate the requirement for radiological monitoring of wells on the west (landward) side of the plant. No unusual levels of radioactivity had been recorded in these samples from 1970 when monitoring was initiated until 1977 when it was discontinued (Tr. 1008-11).

[22]Applicant is continuing its program of monitoring the water of Lake Michigan. Dr. John C. Golden testified that, under a program in operation since 1970, the applicant "routinely monitors on a weekly basis all public water intakes in the area of the plant from Kenosha on the north to Lake Forest on the south side." Tr. 1012-13.

doing so is shown. See 10 CFR 2.206. We have no reason to believe that the Director will shirk his responsibilities in the face of evidence calling for such a step to be taken. (*Cf.*, Illinois' Brief at 25-26).

Affirmed.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. Lawrence R. Quarles
Thomas S. Moore

In the Matter of **Docket No. 50-409 SFP**

DAIRYLAND POWER COOPERATIVE
(La Crosse Boiling Water Reactor) **October 29, 1980**

The Appeal Board affirms the Licensing Board's authorization of a license amendment permitting the expansion of the storage capacity of the facility's spent fuel pool (LBP-80-2, 11 NRC 44); and reserves for later consideration the ruling referred to it by the Licensing Board (and staff's related exception) that the Licensing Board had jurisdiction to determine in this proceeding whether there was a present need for the power generated by the facility.

MEMORANDUM AND ORDER

This is a proceeding on the application of the Dairyland Power Cooperative for an amendment to its provisional operating license for the La Crosse Boiling Water Reactor.[1] The sought amendment would permit an expansion of the storage capacity of the facility's spent fuel pool. In response to the notice of opportunity for hearing on the application, a successful petition for leave to intervene and request for a hearing was filed by the Coulee Region Energy Coalition.

Over the objection of both the applicant and the NRC staff, the Licensing Board concluded that it had the jurisdiction to determine in this spent fuel pool proceeding whether there was a present need for the power

[1]There is also a pending proceeding involving the conversion of the provisional operating license to a full-term license. That proceeding is not now before us.

generated by the La Crosse facility. Accordingly, the Board held an evidentiary hearing with respect to the need-for-power question.

On January 10, 1980, the Licensing Board rendered its initial decision, in which it authorized the issuance of the license amendment subject to certain conditions. LBP-80-2, 11 NRC 44. In the course of the decision, the Board (1) summarily resolved (in the applicant's favor) each of the safety and environmental contentions advanced by the Coalition; (2) determined that there was no need for a hearing on certain safety questions which the Board had raised *sua sponte;* (3) detailed the foundation for its conclusion that it possessed jurisdiction to consider the need-for-power question; and (4) on the basis of its analysis of the evidentiary record, found that La Crosse-generated power would be needed at least until the end of 1982.[2]

At the end of the decision, and in accordance with a previous oral commitment to do so, the Licensing Board referred its ruling on the jurisdictional question to us under 10 CFR 2.730(f). In addition, in the wake of the decision, the staff filed an exception directed specifically to one of the underpinnings of the Board's determination that it was empowered to consider the need-for-power issue. The Board's findings on the merits of that issue, however, have not been challenged by any of the parties. Nor have exceptions been filed to any other portion of the initial decision.

1. Our preliminary examination of the initial decision gave rise to substantial doubt whether the need existed to review the Licensing Board's jurisdictional ruling. To begin with, that ruling appeared to be quite academic insofar as this proceeding was concerned. The Board had gone ahead and held the hearing on the present need for La Crosse-generated power. It had then found the power to be needed. That ultimate finding had been seemingly accepted by all of the parties; at least none of them had seen fit to except to it.

Beyond that, as the Licensing Board had made clear, the jurisdictional ruling had rested upon the peculiar circumstances of the case; more particularly, the fact that La Crosse had not previously received a full environmental review either in connection with its receipt of a provisional operating license (in July 1967, well before the enactment of the National Environmental Policy Act) or otherwise. See 11 NRC at 65, 67 *et seq.* This being so, we were uncertain as to the extent to which the ruling might have prospective precedential importance.

Before we had the opportunity to come to any definite conclusion in that regard, our attention was brought to the fact that a related question had been raised in another spent fuel pool capacity expansion proceeding,

[2]The Board noted that the question of the need for that power after 1982 would be explored in the concurrent full-term operating license proceeding (see fn. 1, *supra*). 11 NRC at 77-78.

similarly involving a reactor which had been licensed for operation many years ago and thus had not undergone a NEPA review. *In the Matter of Consumers Power Company* (Big Rock Point Nuclear Plant), Docket No. 50-155. Accordingly, we decided to withhold action on the referral and exception here to await the Licensing Board's ruling in *Big Rock Point.*

That ruling was handed down on September 12, 1980. LBP-80-25, 12 NRC at 355. Although perceiving there to be certain factual distinctions between the case before it and this one, the *Big Rock Point* Board reached a parallel, although broader, result: it held that the staff must prepare an environmental impact statement "covering the environmental impacts of an expanded spent fuel pool and the additional term of operation of the facility that such expansion would permit." 12 NRC at 365-366. In this regard, the Board admitted to the proceeding an intervenor's contention which sought to put in issue, *inter alia,* the need for the power to be generated by the Big Rock Point facility. *id.* at 356, 366.

In common with the *La Crosse* Licensing Board, the *Big Rock Point* Board referred its ruling to us. *Id.* at 366. Because, unlike the situation in *La Crosse,* the *Big Rock Point* ruling had an immediate and significant practical effect, we promptly accepted the referral and established a briefing schedule which extends into early December. September 12, 1980 order (unpublished).

2. Pending the outcome of our consideration of the referred ruling in *Big Rock Point,* it appears prudent to continue to withhold action on the referral and exception at hand in the present case. But no good reason exists also to leave for later announcement the fruits of this Board's already completed review *sua sponte* of the resolution below of the other matters addressed in the January 10, 1980 initial decision.

We are persuaded on that review that the Licensing Board's summary disposition of the Coalition's contentions was not infected by any error requiring corrective measures on our part. Further, we are satisfied with the Board's analysis and treatment of the answers provided by the applicant and the staff to the questions which it had raised on its own initiative. Finally, assuming (without deciding) that the need-for-power inquiry was within the Board's authority, the ultimate finding on that issue is sufficiently supported by the record and therefore should not be disturbed.

For the foregoing reasons, the result reached in the January 10, 1980 initial decision, LBP-80-2, *supra,* is *affirmed.* This Board will nonetheless

retain jurisdiction over the referred ruling, and the staff's exception related thereto, pending our further order.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Cite as 12 NRC 435 (1980) **LBP-80-27**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Gary L. Milhollin, Chairman
Dr. James C. Lamb, III
Frederick J. Shon

In the Matter of **Docket No. 50-272-OLA**
(Spent Fuel Pool)

PUBLIC SERVICE ELECTRIC AND GAS COMPANY, *et al.*
(Salem Nuclear Generating Station, Unit 1) **October 27, 1980**

The Licensing Board grants an application to increase the storage capacity of the spent fuel pool for Unit 1 of the Salem facility, and authorizes the Director of Nuclear Reactor Regulation to issue the necessary operating license amendment.

TECHNICAL ISSUES DISCUSSED:

Spent fuel pool (expansion, criticality, deterioration/corrosion of racks and neutron absorbers, leakage and swelling of fuel storage cells due to hydrogen generation, alternatives, effect of TMI type accident, effect of gross loss of pool water, consideration of Class 9 accidents).

APPEARANCES

Mark J. Wetterhahn, Esq., of Conner and Moore, Washington, D.C., and **Richard Fryling, Jr., Esq.,** of Public Service Electric and Gas Company, Newark, New Jersey, for the Public Service Electric and Gas Company, et al., Licensees.

R. William Potter, Esq., Keith A. Onsdorff, Esq., Menasha J. Tausner, Esq. and **Sandra T. Ayres, Esq.,** Assistant Deputy Public Advocates, State of New Jersey, for Mr. and Mrs. Alfred C. Coleman, Jr.

Carl Valore, Jr., Esq., of Valore, McAllister, Aron and Westmoreland, Northfield, New Jersey, for the Township of Lower Alloways Creek.

Richard M. Hluchan, Esq., and Rebecca Fields, Esq., Deputy Attorney General, Department of Law and Public Safety, for the State of New Jersey.

June D. MacArtor, Esq., Deputy Attorney General for the State of Delaware.

Barry H. Smith, Esq., Janice E. Moore, Esq. and **William D. Paton, Esq.**, Office of the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C., for the NRC Staff.

INITIAL DECISION

Summary

This is a decision on an application by Public Service Electric and Gas Company (Licensee) to increase the storage capacity of the spent fuel pool at the site of its Salem Nuclear Generating Station, Unit No. 1. The Licensee wishes to install new storage racks which would permit the storage of additional spent fuel assemblies in the existing pool area. In the following decision this Board grants the permission sought in the application. We find that the additional storage can be accomplished without endangering the health or safety of the public, and find no merit in contentions that the new racks will deteriorate or that the Licensee has not considered sufficiently the possible alternatives to the proposed enlargement.

I. INTRODUCTION

1. On November 18, 1977 the Licensee applied to the Nuclear Regulatory Commission (NRC) for an amendment to the operating license for the Salem Nuclear Generating Station, Unit 1. The application was re-filed in revised form on February 14, 1978. The amendment would allow the storage capacity of the spent fuel pool to be increased from 264 to 1170 spent fuel assemblies.

2. On February 8, 1978 the NRC in response to the application published a "Notice of Proposed Issuance of Amendment to Facility Operating License" in the *Federal Register* (43 FR 5443). In response to this notice the States of Delaware and New Jersey filed petitions for leave to participate as interested states under 10 CFR 2.715(c). The Township of

Lower Alloways Creek, the Sun People, and Mr. and Mrs. Alfred C. Coleman, Jr. filed timely petitions to intervene as parties. This Atomic Safety and Licensing Board was established on March 16, 1978 to rule on petitions for leave to intervene, and on April 24, 1978 this Board was designated to conduct hearings. Mr. Glenn O. Bright, who was originally designated as a member of this Board, was replaced by Mr. Lester Kornblith on March 8, 1979 and Mr. Kornblith was replaced on June 27, 1979 by Mr. Frederick J. Shon.

3. We held a Special Prehearing Conference in Salem, New Jersey on May 18, 1978 to consider petitions to intervene. The States of Delaware and New Jersey were granted leave to intervene as interested states, and the Colemans and the Township of Lower Alloways Creek were granted leave to intervene as parties. The petition of the Sun People was denied.

4. The Colemans originally filed 20 contentions, which they later reduced to 13. After review we found only four (Contentions 2, 6, 9 and 13) to be admissible. On February 27, 1979 the Licensee filed a motion for summary disposition of these remaining four. We granted the motion as to Contentions 9 and 13; thus, only Colemans' Contentions 2 and 6 remained for litigation.

5. Lower Alloways Creek Township originally filed 11 contentions, of which we found only two (Contentions 1 and 3) to be admissible after our first review. Subsequently, we dismissed Contention 3 in response to the Licensee's motion for summary disposition of February 27, 1979. Only Contention 1 remained for litigation.

6. We held a second prehearing conference in Salem, New Jersey on March 15 and 16, 1979, at which numerous statements were received from members of the general public pursuant to 10 CFR 2.715(a). The Staff of the Nuclear Regulatory Commission responded directly to a number of the questions which were raised by these statements.

7. We held evidentiary hearings in Salem, New Jersey on May 2, 3 and 4, 1979 on the Colemans' Contentions 2 and 6 and on July 10, 1979 on the Township's Contention 1. Evidentiary hearings were also held on July 11, 1979 on two of three questions which the Board itself posed to the parties on April 18, 1979. These questions sought to determine what the effect would be on Salem's spent fuel pool if an accident similar to that at Three Mile Island 2 were to occur at Salem. Finally, we held evidentiary hearings on April 28, 29, and 30, 1980 on still another question we posed. This last question sought to determine, in the event of a gross loss of water from the spent fuel pool, what the difference in consequences would be between those occasioned by the spent fuel pool with expanded storage and the present pool.

8. We have considered the entire record of this proceeding and all of the proposed findings of fact and conclusions of law submitted by the parties. Any proposed finding of fact or conclusion of law which is not incorporated in this initial decision is rejected as unsupported in law or in fact, or as unnecessary to this decision.

II. FINDINGS OF FACT

A. Colemans' Contentions 2 and 6

Colemans' Contentions 2 and 6 state:

2. The Licensee has given inadequate consideration to the occurrence of accidental criticality due to the increased density or compaction of the spent fuel assemblies. Additional consideration of criticality is required due to the following:

   A. deterioration of the neutron absorption material provided by the Boral plates located between the spent fuel bundles.

   B. deterioration of the rack structure leading to failure of the rack and consequent dislodging of the spent fuel bundles.

6. The Licensee has given inadequate consideration to qualification and testing of Boral material in the environment of protracted association with spent nuclear fuel, in order to validate its continued properties for reactivity control and integrity.

We consolidated the two Contentions for consideration (Board Order dated May 24, 1978) and treat them together here.

9. Evidence on these Contentions was presented by the Licensee and the NRC Staff. Mr. Edwin A. Liden, Mr. Robert P. Douglas, Mr. Warren S. Nechodom, and Mr. Thomas G. Eckhart appeared as witnesses on behalf of the Licensee. Dr. John Weeks, Mr. Gary Zech and Mr. Edward Lanz appeared as witnesses on behalf of the NRC Staff. The Colemans presented no testimony, although they and other parties conducted cross-examination.

10. As stated above, the Licensee proposes in this application to increase the storage capability of the spent fuel pool so as to allow the storage of 1170 spent fuel assemblies instead of 264. This would be accomplished by replacing the present spent fuel storage racks with new racks which enable the assemblies to be stored closer together. By storing the assemblies in this denser array, additional assemblies can be accommodated in the existing pool area. The new racks would decrease the spacing between assemblies from 21 to 10.5 inches center-to-center. The racks consist of an assemblage of hollow, open-ended double-walled stainless

steel cells. Each cell is a square 8.97 inches on a side and 14 feet long. Each cell will receive one spent fuel assembly in its cavity. In order to reduce the number of neutrons travelling from one spent fuel assembly to another, and prevent a self-sustaining chain-reaction within the pool, plates made of Boral (boron carbide and aluminum) are to be fitted and welded into the gap between the double stainless steel walls forming each of the four sides of the cells. Boral absorbs neutrons. The result of this construction is that each storage location would consist of a hollow square cell 14 feet long having a sheet of neutron-absorbing Boral enclosed within each of its four stainless steel sides (Exhibit 6-B, the Staff's Safety Evaluation, at 1-1, 2-17).

Criticality Calculations

11. Criticality is a measure of the capability of the neutron field within the pool to sustain a chain reaction. This is expressed by indicating the effective multiplication factor for neutrons (k_{eff}), which is the ratio of the number of neutrons produced from fissions in each generation to the number of neutrons produced in the preceding generation. To achieve criticality the k_{eff} must equal 1.0. The acceptance criterion established by NRC for spent fuel pools is a calculated k_{eff} of 0.95 or less (*id.* at 2-2).

12. The criticality calculations for this application were performed by Exxon Nuclear Company, which is responsible for supplying the new racks to the Licensee. The calculations indicated that, when loaded with not more than 44.7 grams of U-235 per axial centimeter, the proposed installation will produce a k_{eff} less than 0.95 (*id.* at 2-1 through 2-3). A technical specification on fuel loading will insure that this acceptance criterion will be met (*id.* at 2-3).

13. This calculation of the k_{eff} was made without considering the effect of the boric acid which will be contained in the water which surrounds the racks in the pool. (Tr. 596). In response to questions, the Licensee's witnesses stated that the boric acid concentration in the pool water is about 2000 ppm boron (Tr. 444-48, 736) and that a concentration of this amount would be adequate to prevent criticality even without the Boral plates and under the most disadvantageous fuel loading condition (Tr. 576-77). Also, the Licensee testified that even without boron in the water, and with an entire Boral plate missing in a 5 x 5 array, k_{eff} still would be less than 0.9 (Tr. 576). The NRC Staff testified that the overall results of the criticality calculations for the proposed racks compared favorably with those for other similar spent fuel pools (Exhibit 6-B at 2-2).

Deterioration of the Rack Structure

14. The Colemans' Contention 2 asserts that the above consideration of criticality is inadequate in light of the possibility that the Boral and the rack

structure could deteriorate in the pool environment. In response to this Contention, the Licensee's witnesses testified that the Type 304 stainless steel specified for the rack structure and the cell walls has been used widely in the nuclear industry, that it is the same material approved for use in fabricating the present Salem racks, and that it was chosen for its compatibility with water containing boric acid at 2000 ppm boron (Exhibit 2 at 2). The witnesses stated that they are unaware of any deterioration of this type of stainless steel in environments similar to the Salem spent fuel pool (Exhibit 2 at 2, Tr. 455-456).

15. Dr. John R. Weeks, who testified in behalf of the NRC Staff, stated that no significant deterioration of the racks would occur, and that the stainless steel is protected from corrosion by a tenacious passivating film (Affidavit of John R. Weeks, following Tr. 652 at 2, March 29, 1979). He also stated that corrosion rates of stainless steel in a spent fuel pool environment are too low to measure (*ibid.*). Although stress corrosion cracking near welds is possible because of sensitizing by heat (*id.* at 3), Dr. Weeks concluded that such a phenomenon would be rare and localized and unlikely to affect rack integrity in the fuel pool (*id.*). He reports that welded stainless steel liners have been in service for up to twelve years in borated spent fuel pools without failure through stress corrosion (*id.*). The Colemans did not file proposed findings of fact opposed to this testimony.

Deterioration of the Neutron Absorption Material (Boral)

16. In response to the assertion that the Boral itself may deteriorate, witnesses for the Licensee stated that the design of the new racks is such that the Boral sheets would be enclosed completely in the welded stainless steel cell walls so as to separate the Boral from the pool water and provide protection against corrosion (Tr. 443, 574). These witnesses also described manufacturing process controls and non-destructive testing of the finished cells which are designed to insure, at a 95% confidence level, that at least 95% of the cells will be leak-tight (Tr. 458, 492, 495, 616-618). In response to Board questions, the witnesses interpreted this statement as an estimate that no more than 20-30 cells would be expected to leak out of the total 1170 in the modified Salem pool (Tr. 770). Also, the quality assurance program would include inspection of the racks upon arrival at Salem to insure absence of damage during shipment (Tr. 494).

17. The witnesses generally agreed that the Boral would corrode if it came into contact with the pool water (affidavit of John R. Weeks, *supra*, at 4). To determine the extent of corrosion, the Licensee used data gathered during a one year test program and extrapolated to determine the corrosion rates to be expected over the life of the pool (*In Camera* Tr. 40). The Licensee's testimony indicated that the method of extrapolation used (semi-

logarithmic) is consistent with widely accepted practices in industry for determining long-term effects (Tr. 565-567). Dr. Weeks agreed, and stated that semi-logarithmic extrapolation may even be too conservative (Tr. 693-694).

18. The corrosion observed by the Licensee during the test program consisted of pitting, edge attack, and the formation of small bulges in the Boral sheet (Exhibit 2 at 4, Exhibit 5 at i, *In Camera* Tr. 22). None of this corrosion, however, would significantly reduce the capability of Boral to absorb neutrons because boron carbide is inert not only to the pool water (Affidavit of John R. Weeks, *supra,* at 4) but even to acid solutions which are much stronger than that of the pool (Tr. 664). When corrosion does occur the boron carbide particles, rather than falling away, become imbedded in the corrosion products and remain in place (Affidavit of John R. Weeks, *supra,* at 2; Exhibit 3 at 2-39). Thus, their neutron-absorbing capability is not appreciably reduced by corrosion.

Swelling of Cell Walls

19. The Licensee's testimony described an unfavorable incident which occurred at the Monticello facility. Leaks near the bottom of some of the fuel storage cells allowed water to enter the cells' walls. The water corroded the Boral, producing hydrogen gas. Pressure exerted by the gas caused the cell walls to swell inward (Tr. 439-440) to such an extent that a fuel assembly, if stored in one of these cells, could not be removed (Exhibit 6-B at 2-13). To alleviate this condition a small vent hole was drilled at the top of each storage cell to allow the gas to escape and to prevent similar pressurization in the future (Tr. 440). Subsequently, the vented cells at Monticello were used to store spent fuel (Tr. 608-609).

20. At Salem, a similar condition could arise if water leaked into the walls of the cells. Dr. Weeks testified that water entering the region in which the Boral is enclosed would corrode the Boral, produce hydrogen, and cause swelling of the stainless steel walls (Affidavit of John R. Weeks, *supra,* at 4). The Licensee's testimony indicated that the amount of gas pressure within the cell would depend upon the elevation of the leak, with maximum pressure in instances where the leak occurs at the bottom of the cell (Exhibit 2 at 5). This pressure could cause the inner wall of the cell to bulge toward the center of the storage cavity (*ibid.*) and, where no spent fuel assembly has been stored in the cell, deform the wall beyond the elastic limit of Type 304 stainless steel (Tr. 606). Under these circumstances, the inner wall would not return to its original shape after release of the internal pressure through venting (Tr. 607) so the cell would not be used for storage (Tr. 605). However, the stainless steel would not rupture (Tr. 607). The presence of a fuel assembly in the cell would prevent this deformation by obstructing the

inner wall's movement (Tr. 606-607). The force thus imposed on the fuel assembly, however, would not damage the spent fuel rods or their zircaloy cladding (Tr. 741-747).

21. The Licensee testified that if a leak develops in a cell already containing a spent fuel assembly, semi-remote tooling will be employed to drill vent holes, release the hydrogen, and prevent subsequent accumulation of gas, which is similar to the practice followed at Monticello (Exhibit 2 at 5, Tr. 440). Licensee and NRC witnesses agreed that the amount of hydrogen released would be too small to pose any risk of combustion or explosion (Tr. 595, 596, 611, 612, 691, 692). This venting procedure would be required only for those cases in which the fuel assembly could not be withdrawn from the cell by using a force within the allowable limits of the fuel-handling crane (Exhibit 2 at 5). Venting would release the pressure and permit routine removal of the assembly (*ibid.*). Because the assembly would prevent the inner cell walls from deforming past their elastic limit, the walls would return to their original shape. (Tr. 605-606). Thereafter, the cell would be available for further use (*ibid.*).

22. Although one could avoid any possibility of swelling by venting all of the cells before installation, the witnesses for the Licensee disagreed with those for the Staff as to whether such a step would be advisable. The Licensee's testimony was that it would be preferable to maintain water-tight integrity of the cells, so as to separate the Boral from pool water, as an added line of defense against possibly unknown corrosion effects. In return, the Licensee would be willing to accept the potential loss of some storage cells through swelling, and the possible burden of venting still other cells, should leaks develop (Tr. 619-631, 762-764). The NRC Staff testified that it would be more advisable to vent all of the cells initially to eliminate the risk of swelling because the disadvantages caused by swelling may exceed those of unknown corrosion effects. (Tr. 696-697, 708-727). However, the Staff testified further that venting before installation should not be required to insure safety, because the Licensee's capability for venting *after* swelling was adequate to deal safely with any condition which swelling might create. (Tr. 711-714, 730-734). The Staff concluded that swelling would be a disadvantage only from an operational, and not a safety, point of view (*ibid.*).

Qualification and Testing of Boral

23. Contention 6 asserts that inadequate consideration has been given to the qualification and testing of Boral in the spent fuel pool environment. As indicated above, both the Staff and Licensee presented extensive testimony showing how Boral behaves in contact with the water from the spent fuel pool, and describing the testing procedures which were used to arrive at the

data which was furnished. This testimony was not contradicted by any other testimony, nor seriously weakened by cross-examination.

24. In addition, the Licensee has committed itself to execute a long-term surveillance program involving the use of coupons to simulate spent fuel storage cells in the spent fuel pool (Exhibit 2 at 6, Tr. 497-499, 583-588). The coupons will be examined one year after rack installation and every two years thereafter. The Staff testified that this surveillance program is adequate to detect any degradation of the storage cells. (Tr. 683-685, 694-695).

Conclusions on Contentions 2 and 6

25. The Board finds, after evaluating the evidence above, that Contentions 2 and 6 are without factual merit. The evidence establishes that neither the rack structure nor the Boral will deteriorate, that accidental criticality will not occur, and that adequate consideration has in fact been given to the possibility of such occurrences. Also, we find that adequate consideration has been given to qualification and testing of the Boral to insure its continued integrity and ability to control reactivity in the Salem spent fuel pool environment. Testimony presented by Licensee and Staff proved that the Licensee's ability to vent any storage cell with spent fuel in it is adequate to protect the public health and safety even if a leak should develop in such a cell. The Board finds that the above evidence presented by the Licensee and Staff was convincing, and finds that the conclusions reached by their witnesses, and tested through examination by the parties and the Board, are sound. No direct testimony was introduced by the intervenors to refute any of the evidence, interpretations, or conclusions presented by the Licensee or the Staff.

26. Accordingly, the Board finds that no basis has been established for the allegation that inadequate consideration has been given to deterioration of the rack structure, or the Boral plates to be used as neutron absorbers. We find that, with respect to the issues raised by Colemans' Contentions 2 and 6, the spent fuel pool can be modified and operated as proposed without endangering the health and safety of the public.

B. Lower Alloways Creek Township's Contention No. 1

Lower Alloways Creek Township Contention No. 1 states:

> The Licensee has not considered in sufficient detail possible alterntives to the proposed expansion of the spent fuel pool. Specifically, the Licensee has not established that spent fuel cannot be stored at another reactor site. Also, while the GESMO proceedings have been terminated, it is not clear that the spent fuel could not by some arrangement with Allied Chemical Corp. be stored at the AGNS Plant in Barnwell, South Carolina. Furthermore, the

Licensee has not explored nor exhausted the possiblities for disposing of the spent fuel outside of the U.S.A.

27. The Environmental Impact Appraisal (EIA) prepared by the NRC Staff (Exhibit 6-C, dated January 15, 1979) states that the proposed increase in storage of spent fuel will cause no significant environmental impact. The impact, according to the Staff's testimony, will not be significantly greater than the impact originally described by the Final Environmental Statement for Salem 1 filed in April of 1973 (Exhibit 6-C at 27). If we accept as true the Staff's conclusion that the proposed increase in storage would have no significant impact, it follows that any alternative to the increase would have either a greater impact or one which is also insignificant. This was pointed out in a recent decision by the Atomic Safety and Licensing Appeal Board in *Portland General Electric Company* (Trojan Nuclear Plant) ALAB-531, 9 NRC 263, 266 (March 21, 1979). Under the holding of that case, there would be no need to consider alternatives if we accept the Staff's conclusion.

28. In this proceeding, however, our decision to consider Contention 1 preceded the Appeal Board's decision in *Trojan* (Memorandum and Order of April 26, 1978), and so did the Staff's decision to consider alternatives in the EIA (Exhibit 6-C, *supra,* dated January 15, 1979). In the EIA the Staff considered the alternatives of: (1) reprocessing spent fuel, (2) storing spent fuel at an independent spent fuel storage installation (ISFSI), (3) storing spent fuel from Salem Unit 1 in the pool at Salem Unit 2, (4) storing spent fuel from Salem at some other reactor site, and (5) shutting down the Salem Unit 1 facility when the racks in the existing pool have been filled (Exhibit 6-C at 12-19). Also, the Staff subsequently testified on the feasibility of storing spent fuel outside of the United States (Affidavit of Gary G. Zech, following Tr. 999). The alternatives of reprocessing spent fuel or shutting down the facility were not an explicit part of Contention 1. The Staff concluded in the EIA that reprocessing was not feasible because of the President's policy against it, and that the cost of shutting down the reactor would be far greater than any resulting benefit. These conclusions were fully supported by the Staff's testimony and were not effectively challenged.

Storage at an Independent Spent Fuel Storage Installation (ISFSI)

29. With respect to storage space which may now exist at independent storage installations, such as that at Barnwell, South Carolina, the Staff testified that such space was not available to Salem (Exhibit 6-C at 14-15). The Licensee's testimony concurred (Exhibit 2 at 10-11). This testimony was not contradicted.

30. With respect to storage in newly-contracted ISFSI's, the Township presented testimony by Dr. George Luchak, Professor of Civil Engineering at Princeton University (Testimony of Intervenor Township of Lower Alloways Creek in Respect to Contention No. 1, by George Luchak, Ph.D, following Tr. 918). Dr. Luchak testified that the Licensee had not indicated to what extent it had pursued the alternative of constructing an ISFSI in concert with other electric utilities. Also, he testified that a reasonable location for an ISFSI would be in a dry, unpopulated area, such as a desert, and that the Staff's EIA was deficient in failing to provide data on the cost and feasibility of such an ISFSI (*ibid.*). He stated that the proposed increase in storage at Salem would produce a larger inventory of long-lived radioactivity in the pool (Tr. 952) and that in the event of a severe reactor accident with loss of the pool water, this higher inventory could cause larger release of radioactivity toward the cities near Salem (Tr. 952-953).

31. Mr. Gary Zech, who testified on behalf of the NRC Staff, stated that the accident postulated by Dr. Luchak was not credible (Tr. 1042-1043). Mr. Zech described the pool's reinforced concrete construction, which is seismic category 1, as providing a very stable environment for spent fuel (Tr. 1047). He testified that there is no credible method for loss of water from the pool except possibly through slow evaporation (*ibid.*), that there are several sources of back-up water available at the pool, and that no credible accident could prevent maintaining water in the pool and cooling the spent fuel (Tr. 1047-1048). Mr. Zech also stated that increasing the storage capacity does not increase the short-lived radioactivity in the pool because the additional fuel is older fuel and the time elapsed since its removal from the reactor is adequate for decay of the fission products which are in gaseous form (Tr. 1050-1051).

32. We investigated, pursuant to a question of our own, the extent to which the consequences of a gross loss of water in the spent fuel pool would be affected by the proposed increase in the quantity of older fuel retained in the pool (*see* Part II(D), *infra*, "Board Question Concerning a Gross Loss of Water Accident"). We concluded, first, that neither we nor the witnesses who appeared were able to postulate a credible mechanism for a gross loss of water. Second, we concluded that even if a gross loss of water should occur, there would not be a great difference between the consequences occasioned by the proposed storage configuration and those occasioned by the present one. These conclusions were not affected by the testimony of Dr. Luchak who, we ruled, was not qualified to testify as to the probability of an accident in the Salem spent fuel pool or as to the consequences of such an accident (Tr. 913).

33. Dr. Luchak was unable to state when an ISFSI might be available. He relied upon published figures for his opinion that construction would

require five years (Tr. 980). He did not know of any pending applications for permits to construct ISFSI's (Tr. 981). The Staff testified that the availability of ISFSI's is uncertain for many reasons (Tr. 1005-1007), and that published estimates of the time needed to construct ISFSI's have been based on the assumption that licensing and environmental problems could be resolved expeditiously. (Tr. 1005-1006). The Staff concluded, after surveying the existing information available to it, that an ISFSI would not be available before 1985 at the earliest (Exhibit 6-C at 16). The Staff also testified that the environmental impacts associated with either storing the additional spent fuel at Salem or shipping it to another location would probably play no part in the decision to use an ISFSI because both are very small (Tr. 1053), and that storage at an ISFSI probably would not have a smaller impact on the environment than the proposed increase in storage capacity (Exhibit 6-C at 16).

34. The Staff estimated the cost of constructing an ISFSI at between $24 and $54 million, and the cost of the proposed increase in storage capacity at about $3 million (Exhibit 6-C at 13, 15-16). The Licensee did not carry out an independent cost analysis for constructing an ISFSI, either alone or with other utilities (Tr. 780-781, 798, 1009-1010) but, based on studies by others, concluded that it would be extremely costly (Tr. 833-835). Dr. Luchak did not challenge the Staff's cost estimate for constructing an ISFSI, but he did testify that the increase in storage capacity at Salem would result in higher costs for safeguards, security, and maintenance at Salem (Testimony of Intervenor Township, *supra,* at 3). He declined to estimate those costs in dollars (Tr. 970). The Licensee's testimony, in response, was to the effect that expenses for safeguards, security, and maintenance would be far higher at an ISFSI than at Salem because the ISFSI would be an entirely new facility (Tr. 835).

35. After a review of the above testimony, we conclude that construction and use of an ISFSI would be more costly than the proposed expansion at Salem, that it would produce environmental impacts as great or greater than the proposed expansion, that it would not reduce appreciably the risk or consequences of a gross loss of water in the spent fuel pool, and that it is unknown whether an ISFSI can or will be constructed in time to be available for storage of spent fuel from Salem Unit 1 when that storage is needed. We find that in view of these conclusions, the Licensee has considered this alternative in sufficient detail.

Storage of Spent Fuel from Salem 1 in the Pool of Salem 2

36. The spent fuel storage pool at Salem Unit 2 has been fully constructed (Tr. 811). The testimony of the Licensee and Staff agreed that, with the existing racks and under the best current estimates, the pool of

Unit 1 would be full after 1983 and the pool at Unit 2 would be full after the refueling outage in 1984 (Tr. 1026-1027, 1030, 1104-1105). Without arrangements for additional storage, it will be necessary for both Units to shut down. With the proposed higher density racks, the pool of Unit 1 would be full in 1999 and the pool of Unit 2 in 2000 (Tr. 1105).

37. If, after filling the present racks in the pool at Salem 1, spent fuel from Salem 1 were stored in the existing racks of the pool at Salem 2, the pool at Salem 2 would be filled by 1983 (Tr. 820). However, because the Licensee also plans to install higher density racks at Salem 2 (*ibid.*) it would be possible to store spent fuel from Salem 1 in the new racks at Salem 2 in such a fashion as to extend the storage capability of the combined facilities to 1991 or 1992, without installing new racks at Salem 1 (Tr. 1135). The Staff testified that this extension of storage would still not be long enough, however, to assure that the Licensee could obtain storage elsewhere (Tr. 1137-1138). In addition, the Staff testified that storing spent fuel from Salem 1 in the pool at Salem 2 would produce higher occupational exposures than the proposed reracking of Salem 1 because the spent fuel from Unit 1 would have to be loaded and transported to Unit 2, the spent fuel pools being in separate buildings (Exhibit 6-C at 17). This would require a license amendment (Tr. 1147). Further, if the pool at Unit 2 is filled with fuel from both Units before offsite storage is available, it would then become necessary to rerack the Unit 1 pool at a time it had been filled with spent fuel, which would produce a higher occupational exposure than would reracking it now, with only one annual discharge present, as proposed (Tr. 1144-1145). Finally, if such a belated reracking of Unit 1 became necessary, it would also be necessary to load and transport the spent fuel from Unit 2 back to Unit 1 in order to use Unit 1's increased capacity, and this would increase occupational exposures even more (Tr. 1151). In view of the uncertainty of off-site storage even by 1991 or 1992, and these higher exposures, we conclude that the alternative of storing spent fuel from Salem at 1 Salem 2 is not preferable to the proposed increase in storage at Salem 1.

Offsite Storage at Other Reactors

38. Hope Creek Units 1 and 2, which are currently under construction near Salem, are the only other nuclear facilities owned by the Licensee; these Units probably will not be completed before the existing pools are full at both Salem Units (Exhibit 6-C at 17-18). Hope Creek will use boiling water reactors which have fuel assemblies with dimensions different from the assemblies of the pressurized water reactors used at Salem (*ibid.*). To use the Hope Creek pools for Salem's fuel, it would be necessary to replace their racks (*id.*). To do so would reduce the storage capacity available for

the Hope Creek reactors (*id.*). The Staff cited a survey conducted by the Energy Research and Development Agency to the effect that up to 46% of the operating nuclear power reactors in the United States will lose the ability to refuel during the period from 1975 to 1984 unless storage capacity is increased in spent fuel pools or off-site storage is found (*id.*). The Staff concluded that under these circumstances, the Licensee could not prudently rely upon the Hope Creek units or any other power facility to provide additional storage when the Salem pool is filled. Since no testimony to the contrary was offered, we must agree with the Staff's conclusions.

Storage Outside the United States

39. The Staff testified that the possibility of disposing of spent fuel from Salem Unit No. 1 outside the United States is nonexistent because of the federal government's policy regarding nonproliferation of nuclear weapons. A large scale shipment of spent fuel to a foreign country by a utility company would not be permitted if that country engages in reprocessing (Affidavit of Gary G. Zech at 2, following Tr. 999). This alternative was not discussed further in the proceeding by any of the parties. The Board concurs that this is not a viable alternative to the proposed modification.

Conclusions on Contention 1

40. After evaluating the evidence before us, we conclude that the proposed increase in spent fuel storage capacity at Salem Unit 1 will not significantly increase the impact on the human environment caused by the Salem 1 reactor. We also conclude that storage outside the United States or at an existing independent spent fuel storage installation is not available, that construction of such an installation by the Licensee would not be an alternative preferable to the proposed increase, and neither would storage of spent fuel from Salem 1 at Salem 2 or at another reactor, if another reactor were available. In short, we find that Contention 1 has no factual merit in light of the evidence received, and that alternatives to the proposed action have been adequately considered.

C. Board Questions Concerning the Accident at Three Mile Island

41. The accident at the Three Mile Island Nuclear Station, Unit 2, occurred while this proceeding was pending. Because of the serious safety questions which this accident raised, we sought to determine what the effects would be on Salem's spent fuel pool if an accident similar to that at Three Mile Island were to occur at Salem. We asked the parties to respond to the following questions:

(a) To what extent did the accident at Three Mile Island affect the spent fuel pool at that site?

(b) If an accident such as the one at Three Mile Island occurred at Salem, to what extent would the accident affect the spent fuel pool? To what extent would it have mattered how much spent fuel was present at the pool at Salem?

42. Both the Staff and the Licensee introduced evidence on these questions. The Staff's testimony was given by Mr. Gary G. Zech and Dr. Jack N. Donohew, Jr. The Staff also offered Exhibit 12, a package of view plans showing radiation fields in the auxiliary building at Three Mile Island. The Licensee's testimony was given by Messrs. Robert P. Douglas, Edward A. Liden, and Robert A. Burricelli. No other party presented evidence on these questions; however, all parties and the Board examined the witnesses.

43. With respect to question (a), the Staff's witnesses testified that there was no spent fuel in the pool at Three Mile Island when the accident occurred, that even if there had been the accident would not have affected it (NRC Staff Response, In Part, to Board Questions, following Tr. 1133), and that the pool itself remained accessible despite levels of radiation which were higher than normal (Tr. 1236). The Staff also stated that the equipment for cooling the spent fuel pool and purifying its water was accessible at Three Mile Island after the accident (Tr. 1233-34). The Licensee's witnesses were in accord (Tr. 1291-92) although they were unable to state what the level of radiation actually was in the areas where the equipment was located (Tr. 1293). This uncertainty was cured by additional testimony from the Staff, which showed that the Staff arrived at its conclusions on accessibility by evaluating actual measurements of radiation fields at Three Mile Island shortly after the accident (Tr. 1324-1339; Exhibit 12).

44. With respect to question (b), the Staff testified that at Three Mile Island radioactive water was pumped automatically from the containment building, which houses the reactor, to tanks in the auxiliary building, which houses the spent fuel pool and the equipment needed to operate it. This water overflowed from the tanks into the auxiliary building, producing high levels of radioactivity there (NRC Staff Response, *supra.*). The Staff's testimony established that such an automatic transfer could not occur at Salem because valves in the lines leading from the containment to the auxiliary building at Salem close automatically on the safeguards signal (*id.* at 3). At Three Mile Island these valves were not designed to close (and did not close) upon the safeguards signal. The Staff further testified that even if these valves (which isolate the containment) did not work properly at Salem, and there were an inadvertent transfer of contaiminated water to Salem's auxiliary building, the operation of the spent fuel pool and its support systems would not be seriously affected (*id.*). At Salem some of the

support systems for the spent fuel pool (the cooling and purification systems) are located in the auxiliary building, which at Salem is a building separate from the building housing the spent fuel pool itself. Parts of the auxiliary building would be contaminated by radioactive water if Salem experienced an accident similar to that at Three Mile Island. However, at Salem the parts of the auxiliary building which would be contaminated are shielded from the support systems for the spent fuel pool to such an extent that the support systems would remain accessible for purposes of maintenance (*id.* at 5). This conclusion, made by the Staff, was based upon a comparison of the design of Salem's auxiliary building with that of Three Mile Island and, more specifically, on a study of the specific location of the spent fuel pool support systems at Salem, the location of areas which could be contaminated at Salem by an accident similar to that at Three Mile Island, and the radiation fields which existed in the contaminated portions of the auxiliary building at Three Mile Island after the accident (Tr. 1179; 1181). The Staff concluded that at Salem there would be higher dose rates than normal in the vicinity of the purification system but that the effect would not be serious (Tr. 1169). One source of make-up water for Salem's spent fuel pool could be restricted because of the expected contamination of the holdup tank for the chemical volume and control system, but other available sources would still exist (Tr. 1207). In addition, valves to provide make-up water to the spent fuel pool at Salem are located in the fuel handling building, so that make-up water would be available without ever having persons enter the auxiliary building (Tr. 1240).

45. The Licensee presented the testimony of Messrs. Liden, Douglas, and Burricelli on these same questions (Licensee's Response to Licensing Board's Question 1 and Part 1 of Question 3 Relating to Impact of a Three Mile Island Type Incident on the Salem Unit 1 Spent Fuel Pool, following Tr. 1264). These witnesses agreed with the Staff that both the spent fuel pool and its support systems would be accessible for maintenance if Salem experienced an accident in which contaminated water were transferred to the auxiliary building (*id.* at 3). In addition, these witnesses testified that the ventilation system in Salem's auxiliary building is designed to prevent the movement of airborne radioactivity from one area which might be contaminated to another (*id.*). This system, which is typical of most nuclear plants, brings air in through clean areas such as corridors and exhausts it through areas which might be contaminated (Tr. 1280). Thus, according to the Licensee, gaseous radioactivity in Salem's auxiliary building is not expected to contaminate areas containing the support equipment for the spent fuel pool (Licensee's Response, *supra,* at 3). This ventilation equipment, which is operated remotely from the control room, is located in a space between the containment building and the fuel handling building

(Tr. 1287). The equipment would be accessible for maintenance even in the event of an accident of the type at Three Mile Island, especially if temporary shielding were used to reduce radiation levels (Licensee's Response, *supra,* at 4).

46. In sum, the testimony by both the Licensee and Staff showed that the type of accident which occurred at Three Mile Island would not seriously affect the spent fuel pool at Salem or any of its supporting equipment. The Board finds this testimony to be convincing. No other party offered testimony on this point, nor did any other party propose a finding of fact or conclusion of law on this point. Also, there was no suggestion that any effect on the spent fuel pool which might occur from such an accident would depend on whether the pool contained the additional spent fuel assemblies sought to be authorized by this application. We find that if an accident of the type which occurred at Three Mile Island were to occur at Salem, there would be little, if any, effect on the spent fuel pool as now authorized, and little, if any, effect on the pool with the expanded storage capacity requested by the Licensee. We consider our questions concerning Three Mile Island to have been adequately answered.

D. Board Question Concerning a Gross Loss of Water Accident

47. In our Memorandum and Order of February 22, 1980 (LBP-80-10, 11 NRC 337, 346) we directed the parties to answer the following question:

> In the event of a gross loss of water from the storage pool, what would be the difference in consequences between those occasioned by the pool with the expanded storage and those occasioned by the present pool?

48. As we explained in that Memorandum and Order, our review of Commission policy on dealing with large accidents had led us to conclude that that policy, as it then stood, would require us to have on record further evidence of the consequences of such an accident in order that we might decide, as a threshold matter, whether the change induced in those consequences by the fuel pool expansion would require further evaluation in the form of an environmental impact statement (11 NRC at 346). To receive this evidence, we held evidentiary hearings in April, 1980.

49. Testimony was proposed by the Licensee, the Staff, and Lower Alloways Creek Township. We rejected the Licensee's testimony as not responsive to our question (Tr. 1376). We rejected the portion of the Township's proposed testimony prepared by Dr. Fankhauser as not sufficiently connected with the difference between the present and proposed storage configuration (*ibid.*). For reasons stated on the record, we struck substantial portions of the Township's proposed testimony prepared

by Dr. Webb (Tr. 1377-81 and 1679-82). We received the Staff's proposed testimony into evidence (Tr. 1387).

50. Dr. Richard C. Webb sponsored the Township's testimony concerning the consequences of a gross loss of water from the spent fuel pool (Testimony of Richard C. Webb, Ph.D., in Respect to Board Question #3, following Tr. 1697). Dr. Webb stated that if such a loss occurred the radioactivity in the pool could be dispersed over a very large area, such as the eastern seaboard of the United States (*id.* at p. 14). We asked Dr. Webb to explain the mechanism by which this dispersion could occur and the factual assumptions, if any, upon which his statement depended. Dr. Webb responded that he had reached his conclusion by calculations which simply assumed that a large amount of radioactivity would escape from the pool (Tr. 1699-1702). We then asked Dr. Webb whether he could identify any mechanism by which this assumed release of radioactivity could or would occur. He responded (Tr. 1706-1709) that this mechanism was described in Part II of his testimony of April 9, 1980 entitled *"Consequences of Zirconium Fire: Fission Product Release (Postscript)"* (following Tr. 1697). When asked to describe or state more specifically what mechanism he was referring to, he was unable to do so; he responded simply that there were "many factors" (Tr. 1708) and that the description of the mechanism was spread generally through the pages of Part II of his testimony (Tr. 1709). We also asked Dr. Webb to indicate to what extent this mechanism might depend upon or be influenced by the presence of spent fuel four years old or older (spent fuel in this category is the subject of the Licensee's application). Dr. Webb pointed to a statement in his testimony—made without any supporting analysis or data—that a zirconium fire "could conceivably spread to old spent fuel" [from fresher fuel], to another statement in his testimony that "one must assume that ...[a zirconium] fire will spread" (Tr. 1710-1711), and to an addendum in which he said he addressed a zirconium fire which had occurred at Bettis Laboratories (Tr. 1711). The first two statements are simply unsupported assertions, and Dr. Webb's testimony in the cited addendum does not in fact discuss the extent to which any mechanism for release of radiation is influenced by the presence of spent fuel four years old or older. It seems clear to the Board that Dr. Webb believes a zirconium fire could start in the pool if a gross loss of water should occur and that the fire could spread to fuel four years old or older. However, there is nothing specific to show whether such a fire could propagate or what specific difference the densification of storage would make. When Dr. Webb attempted to analyze this question for the existing (open) racks he could only conclude:

"Intensive efforts on my part...failed to solve this formidable mathematic problem." (Part III of Supplement of April 8-9, 1980 to February 27, 1979 testimony, at p. 1).

51. With respect to the probability of propagation, Dr. Webb did not offer any firm opinion. He stated:

"I considered the likelihood (probability) and I concluded that any judgment on likelihood is unscientific and pure speculation. So I considered the matter and disposed of it that way." (Tr. 1731).

He asserted in response to a Board question that he simply disagreed with the use of "probability" in making these calculations (Tr. 1732).

52. In the matter of dispersion of fission products once released from the pool, Dr. Webb's conclusions concerning the impacts of fission product releases depend upon a knowledge of meteorology. However, Dr. Webb is not a meteorologist (Tr. 1687), nor has he published any articles in meteorological journals (Tr. 1688). He testified that he had studied meteorology (Tr. 1697).

53. When one views Dr. Webb's testimony as a whole, it is impossible to glean from it any clear picture either of a mechanism by which a large amount of radioactivity could escape from the pool, or the assumptions of fact which might be appropriate to such a mechanism. Neither does the testimony discuss any clear relation between such a mechanism and the presence of spent fuel four years old or older in the pool.

54. In general, we found much of the testimony ill-organized and difficult to follow. It was unsuitable for assessing the probability that a serious accident could be caused by a substantial loss of water. It was of even less help in trying to determine whether the total risk presented by the fuel pool would substantially increase because of the proposed expansion.

55. The Staff's testimony was more productive. It was sponsored by Mr. Walter F. Pasedag, Environmental Evaluation Branch, Division of Operating Reactors, U.S. Nuclear Regulatory Commission. His professional qualifications appear at Tr. 1387. Dr. Allan S. Benjamin of Sandia Laboratories joined Mr. Pasedag in presenting the Staff's case. Dr. Benjamin's qualifications appear at Tr. 1389. Dr. Benjamin, one of the authors of what became known in the hearing as the "Sandia Report," acted as a consultant to Mr. Pasedag (Tr. 1390). The report (NUREG/CR-0649) is entitled "Spent Fuel Heatup Following Loss of Water During Storage" (Tr. 1399-1400).

56. Mr. Pasedag testified that, for fresh spent fuel, continued denial of water cooling in the spent fuel pool could lead to oxidation and failure of the clad, to overheating of the UO_2 fuel, and possibly to the release of fission

products into either the present or the proposed pool. (Direct Testimony of Walter F. Pasedag in Response to Board Question No. 5, following Tr. 1387, at p. 4). Also, in the new, denser storage configuration proposed by the Licensee, there would be less natural convection after a loss of water than there would be with the present, more widely spaced configuration. Thus, there would be a higher likelihood that the recently discharged fuel would reach oxidation temperatures (with possible clad melting) in the proposed configuration. (Further Testimony of Walter F. Pasedag in Response to Board Question No. 5, following Tr. 1387, at p. 2). The decay time required to assure that the fuel's decay heat generation would not result in oxidation temperatures (above 900°C) in the higher density storage configuration is about one year (*id.* at p. 1; Tr. 1441).

57. We pursued with Dr. Benjamin the notion of a possible fire in the pool after a gross loss of water. It appeared that he was the person upon whom the Staff relied most specifically in matters of heat transfer and oxidation (Pasedag Further Testimony, *supra,* at p. 1; Tr. 1390). Dr. Benjamin was familiar with the analytic techniques utilized in the heatup analysis contained in the Sandia Report. In general, we found his testimony to be cogent and well founded. According to Dr. Benjamin, it would not be possible to have "flames" in the spent fuel pool despite the high temperatures which would follow a gross loss of cooling water (Tr. 1393). The freshly discharged spent fuel would become hot, oxidize, glow, and emit heat by thermal radiation (Tr. 1393, 1394). The oxidation would not, however, spread from one spent fuel element to another by what is commonly thought of as a "fire"—a deflagration with rapid convection and spreading of flames; it could propagate only through a process in which heat radiating from the recently discharged spent fuel might raise the temperature of older spent fuel assemblies which had been stored nearby (Tr. 1391, 1392). Dr. Benjamin did not believe that one could rule out the possibility that this rise in temperature could cause these older assemblies to oxidize (Tr. 1392, 1399). Mr. Pasedag, however, testified that any oxidation of these older assemblies would be limited, and would not lead to a release of fission products substantially greater than those released by the recently discharged fuel (Pasedag, Further Testimony, *supra,* at p. 2). Both witnesses stated that the calculations required to form a solid conclusion on the propagation of oxidation were beyond the scope of the Staff's review of the application (Tr. 1391, 1418). According to Mr. Pasedag, one can nevertheless be confident that even if some oxidation of the older spent fuel assemblies occurred, the oxidation would be limited to those stored nearest the recently discharged assemblies, would probably not be sufficient to melt the clad, and would certainly not be sufficient to melt the fuel (Tr. 1448). If the clad were indeed to melt on the older assemblies (4 years old or older)

the radioactive release would be limited to the fission products contained in the gap between the clad and the fuel pellets (Tr. 1449). There would be essentially none of the more volatile fission products left in the gap of the older fuel—they would have decayed or plated out (*ibid.*). Altogether, the possibility of radioactive release from the older spent fuel is limited to a few isotopes and would be small even in the event thermal radiation should cause some of that fuel to oxidize (*id.*).

58. We find the above testimony by the Staff to be persuasive and not meaningfully contradicted by any other testimony. On cross-examination Dr. Benjamin stated that it would be possible through further analysis to predict more precisely whether oxidation could propagate to the older fuel, and that the calculations for such an analysis could be performed by one person in a few months (Tr. 1483). We do not believe, however, that further study is needed to reach our decision. Mr. Pasedag's testimony convinced us that even if oxidation did propagate to the older fuel the resulting radioactive release would not be significant in comparison to the radioactive release from the recently discharged fuel. When we consider that Dr. Webb was unable to describe any credible mechanism for propagation despite a specific invitation to do so, and consider that a gross loss of water is in itself an event of very low probability, we do not believe that further study of propagation is necessary to answer our question. We are satisfied that in the event of a gross loss of water from the spent fuel pool, there would not be a great difference between the consequences occasioned by the proposed storage configuration and those occasioned by the present one.

E. Class 9 Accidents

59. In the course of the hearing we asked the following question of the parties:

> The proposed Annex to Appendix D, 10 CFR Part 50, appears to define a Class 9 accident as a sequence of failures which are more severe than those which the safety features of the plant are designed to prevent. The sequence of failures at Three Mile Island produced a breach of the containment and a release of radiation which could not be prevented by the safety features. Was the occurrence at Three Mile Island therefore a Class 9 accident? Was the risk to health and safety and the environment "remote in probability," or "extremely low" at Three Mile Island, as those terms are used in the Annex? (Tr. 922-23).

60. When we asked this question, we were of the opinion that if in fact a "Class 9" accident had occurred after only a few hundred reactor-years of operation, this fact would be important in interpreting the meaning and scope of the policy contained in the proposed Annex. The Annex assumed

that Class 9 accidents, although severe, were so "remote in probability" that their environmental risk was "extremely low."

61. All parties replied to this question, the Intervenors generally taking the position that the accident was Class 9, the Licensee taking the position that it was not, and the Staff taking the position that it was, but notifying us of a Staff minority opinion that it was not.

62. In the time since we asked the question and received the replies, the Commission has revised its policy on review of Class 9 accidents. On June 9, 1980 the Commission published a statement of interim policy entitled "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 FR 40101 (June 13, 1980). In that statement the Commission withdrew the Annex and abolished the system of accident classification. The effect of this change is to moot our question, since no problem of applying or interpreting the proposed Annex can now arise. Even severe accidents may now be considered in the Commission's environmental review.

63. This new policy applies to cases in which the Commission's Staff has not completed its environmental impact statement. Thus, it does not apply to this case. It is worth noting, however, that our inquiry into the consequences of a gross loss of water from the spent fuel pool may have anticipated the change in policy. Or at least, objections to inquiries such as ours will no longer be made on the ground that certain accidents belong to a forbidden category. For the accident sequence which we investigated, we are satisfied that the record now contains an analysis which would be adequate even under the new policy.

III. CONCLUSIONS OF LAW

64. The grant of the license amendment requested in this proceeding is not a major Commission action significantly affecting the quality of the human environment. Therefore, it does not require the preparation of an environmental impact statement under the National Environmental Policy Act of 1969 (NEPA), 42 USC 4321, *et seq.*, or under Part 51 of the Commission's regulations. The basis for this conclusion is our review of the record of this proceeding, particularly the evidence supporting the Staff's Environmental Impact Appraisal (Exhibit 6-C). In the Appraisal, the Staff describes the environmental impact of the proposed modification, the need for the increase in storage capacity, the environmental impact of postulated accidents, alternative possibilities for spent fuel storage, and the overall balance of costs and benefits. The evidence adduced fully supports the Staff's conclusion that this action will not significantly affect the quality of the human environment. None of the testimony or cross-examination by

intervenors or interested states showed that the Staff's conclusion was incorrect, or that the evidence supporting that conclusion was inadequate.

65. As we pointed out above in our discussion of Contention 1, there is authority for the proposition that NEPA does not require us to consider the possible alternatives to a proposed action if that action is not one which will significantly affect the quality of the human environment. *Portland General Electric Company* (Trojan Nuclear Plant) ALAB-531, 9 NRC 263, 266 (1979). We have nevertheless considered the Township's Contention 1 and have found, as stated above in our Findings of Fact, that no alternative has been identified which would produce smaller environmental impacts than the action proposed by this application.

66. When the Commission published its "Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel," 40 FR 42801 (September 16, 1975), the Commission stated that five factors should be "applied, weighed and balanced" for particular license applications made while the Generic Statement was still under consideration. These five factors were considered by the Staff in its Environmental Impact Appraisal, but they were not directly made matters in controversy before us, and no evidence other than the Staff's Appraisal was introduced with respect to them. Upon a review of the evidence presented, we conclude that the Staff's conclusion regarding these five factors is fully warranted. Further, we note that the Staff published the Final Generic Environmental Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, NUREG-0575, in August of 1979. This final statement finds that, as a general matter, enlargements of storage capacity at spent fuel pools are economically and environmentally acceptable (NUREG-0575 at ES-10, ES-11).

67. The Commission's statement of interim policy entitled "Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969," 45 FR 40101 (June 13, 1980), which withdraws the proposed Annex to Appendix D to 10 CFR Part 50, does not affect this proceeding. As pointed out above in our discussion of Class 9 accidents, this new policy does not apply to proceedings in which the Staff has completed its environmental review. The new policy is not a basis for "opening, reopening, or expanding any previous or ongoing proceeding." 43 FR at 40103.

68. There is reasonable assurance that the activities authorized by the requested amendment to the operating license can be conducted without endangering the health and safety of the public.

69. The activities authorized by the requested amendment to the operating license will be conducted in compliance with the Commission's regulations.

70. The issuance of the requested amendment to the operating license will not be inimical to the common defense and security or to the health and safety of the public.

IV. ORDER

71. Wherefore, it is ORDERED, in accordance with the Atomic Energy Act, as amended, and the regulations of the Nuclear Regulatory Commission, and based on the findings and conclusions set forth herein, that the Director of Nuclear Reactor Regulation is authorized to make appropriate findings in accordance with the Commission's regulations and to issue the appropriate license amendment authorizing the requested replacement of spent fuel storage racks at Salem Station Unit 1.

72. It is further ORDERED in accordance with 10 CFR 2.760, 2.762, 2.764, 2.785, and 2.786, that this Initial Decision shall be effective immediately and shall constitute the final action of the Commission forty-five (45) days after the issuance thereof, subject to any review pursuant to the above-cited Rules of Practice.

73. Exceptions to this Initial Decision may be filed within ten (10) days after service of this Initial Decision. A brief in support of the exceptions shall be filed within thirty (30) days thereafter [forty (40) days in the case of the NRC 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.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD

Dr. James C. Lamb, III, Member

Frederick J. Shon, Member

Gary L. Milhollin, Chairman

Dated at Bethesda, Maryland
this 27th day of October, 1980.

Cite as 12 NRC 459 (1980) **LBP-80-28**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Marshall E. Miller, Esquire, Chairman
Dr. Cadet H. Hand, Jr.
Dr. Emmeth A. Luebke

In the Matters of

Docket No. 70-2623-OLA
(Amendment To Materials License SNM-1773 for Oconee Nuclear Station Spent Fuel Transportation and Storage at McGuire Nuclear Station)

DUKE POWER COMPANY
(Oconee/McGuire)

October 31, 1980

The Licensing Board denies an application for an amendment to a special nuclear materials license to allow the shipment of spent fuel from the licensee's Oconee facility for storage at its McGuire facility. In denying the application, the Board finds, *inter alia:* (1) the proposed shipments are part of a larger transportation plan for the future transshipment of spent fuel assemblies within the licensee's system; (2) the Environmental Impact Appraisal and Negative Declaration prepared by the staff are improperly segmented and are otherwise inadequate in complying with NEPA and the Commission's regulations thereunder; (3) the issuance of the license amendment and activity thereunder would significantly affect the quality of the human environment and therefore require the preparation of an environmental impact statement; and (4) there is no reasonable assurance that the activities that would be authorized by the sought license amendment could be conducted without endangering the public health and safety.

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

Where a proposed action is part of a broader plan or program, the proper scope of an environmental analysis under NEPA must be as extensive as the broader plan or program itself.

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

Until the Commission issues a generic environmental impact statement (GEIS) on the handling and storage of spent light water power reactor fuel, licensing actions intended to ameliorate a shortage of spent fuel storage capacity must be accompanied by an environmental impact statement or appraisal which applies, weighs and balances the five factors specified by the Commission in its notice of intent to prepare the GEIS. 40 FR 42801, 42802 (September 16, 1975).

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

An environmental analysis of a spent fuel shipment proposal must adequately consider, *inter alia,* the potential social consequences of transshipment including the psychological, sociological and political impacts of the proposal.

NEPA: CONSIDERATION OF ALTERNATIVES

An analysis of the alternative ways of accomplishing the objectives of a proposed action and the results of not accomplishing the proposed action is the "linchpin" of an environmental analysis under NEPA. *United States Energy Research and Development Administration* (Clinch River Breeder Plant), CLI-76-13, 4 NRC 67, 89 (1976).

REGULATIONS: INTERPRETATION (ALARA, 10 CFR 20.1(C))

The ALARA standard requiring persons engaged in activities under licenses issued pursuant to the Atomic Energy and Energy Reorganization Acts "to make every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as is reasonably achievable" contemplates a comparison of the proposed course of action with other alternatives to determine whether the proposed method does indeed maintain radiation exposures to levels "as low as is reasonably achievable."

LICENSING BOARDS: JURISDICTION (FULL-CORE RESERVE CAPABILITY)

The Commission neither requires nor prohibits utilities from maintaining a full-core reserve capability to operate their reactors; a licensing board

therefore does not have jurisdiction to find for or against the requirement of such a capability at a facility.

TECHNICAL ISSUES DISCUSSED:

Spent fuel: storage; transportation; alternatives to spent fuel pool expansion; radiation doses and health effects from storage and transportation; as low as reasonably achievable (ALARA); cask drop accident (radiation release, criticality); operational alternatives to minimize fuel discharge (effect on need for replacement power); full core reserve storage capacity; cost of replacement power.

APPEARANCES

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INITIAL DECISION

I. PRELIMINARY STATEMENT

A. Background

This Initial Decision involves an application for amendment of Special Nuclear Materials License SNM-1773 filed on March 9, 1978, with the Nuclear Regulatory Commission (NRC) by the Duke Power Company (Duke or Applicant). Special Nuclear Materials License No. SNM-1773, which was issued pursuant to 10 CFR Part 70, permits storage of new, unirradiated nuclear fuel at the McGuire Nuclear Power Facility[1] In its application for amendment of the license, Duke requested authorization to ship spent nuclear fuel from its Oconee Nuclear Station to the McGuire Nuclear Station for storage in the McGuire Nuclear Station, Unit 1 spent fuel pool commencing in early 1979.

Duke has licenses (Operating Licenses Nos. DPR-38, 47 and 55) to operate its Oconee Nuclear Station Units 1, 2 and 3, which consists of three 2568 MWt, 860 MWe, Babcock and Wilcox pressurized water reactor (PWR) units located on the shore of Lake Keowee in Oconee County, South Carolina. Oconee Units 1, 2 and 3 are presently operating.

Duke's application to amend the license sought authorization to store 400 spent fuel assemblies from the Oconee Facility in the McGuire Unit 1 spent fuel pool. On June 19, 1979, the Nuclear Regulatory Commission issued an amendment to the Oconee operating licenses Nos. 38 and 47 for the Units 1 and 2 spent fuel pool. This amendment authorized the expansion of spent fuel storage capacity in the Oconee Units 1 and 2 spent fuel pool by installation of high-density stainless steel racks.[2] The Unit 3

[1]Licensing of the operation of the William B. McGuire Nuclear Station, Units 1 and 2, Docket Nos. 50-369, and 50-370 is the subject of an Initial Decision (Operation License Proceeding) issued by the McGuire Atomic Safety and Licensing Board on April 18, 1979. Duke Power Company (William B. McGuire Nuclear Station, Units 1 and 2), LBP-79-13, 9 NRC 489 (1979). That Atomic Safety and Licensing Board decision made findings of fact and conclusions of law on matters actually put into controversy by the parties to that proceeding. However, the Atomic Safety and Licensing Board stayed the effect of its decision until further order following the issuance of a supplement to the NRC Staff's Safety Evaluation Report addressing the significance of any unresolved generic safety issues relative to operation of McGuire, Units 1 and 2. 9 NRC at 547-48.

[2]On March 6, 1979, the Commission issued a "Proposed Issuance of Amendments to Facility Operating Licenses," (44 FR 12303). That Notice stated that the U.S. Nuclear Regulatory Commission was considering issuance of amendments to facility operating licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units Nos. 1, 2, and 3. The amendments would revise the Oconee Station's common technical specifications to permit the expansion of the spent fuel capacity at the Oconee Units 1 and 2 common spent fuel pool from 336 to 750 storage locations, in accordance with the Licensee's application for amendments

Oconee spent fuel pool was expanded from 216 to 474 storage racks by the issuance of Amendment No. 14, to the Oconee Unit 3 facility operating license, DPR-55.

B. Parties

On July 28, 1978, the NRC issued a notice of "Opportunity for Public Participation in Proposed NRC Licensing Action for Amendment to Materials License SNM-1773 for Oconee Nuclear Station Spent Fuel Transportation and Storage at McGuire Nuclear Station." This notice provided that persons whose interests might be affected by the Licensee's request could file a petition to intervene and request a hearing (43 FR 32905).

Petitions for leave to intervene were filed in accordance with the above *Federal Register* notice, and the following parties were admitted as intervening parties pursuant to 10 CFR 2.714: Carolina Environmental Study Group (CESG); Carolina Action (CA); Safe Energy Alliance (SEA); Davidson College Chapter of the North Carolina Public Interest Research Group[3] (PIRG); and Natural Resources Defense Council (NRDC),[4] In addition, the State of South Carolina was granted leave to participate as an "interested state" pursuant to 10 CFR 2.715(c).

On February 23, 1979, the Board issued an order admitting Contentions 1-3 of CESG, Carolina Action, and Safe Energy Alliance and Contention 4

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dated February 2, 1979. That Notice provided the opportunity to intervene and request a hearing. There was no intervention and no hearing in that proceeding. 44 FR 40457 (July 10, 1979). *See:* Applicant Exh. 30, at 1 (Bostian Testimony, following Tr. 4799). On September 22, 1980, the Commission issued a "Proposed Issuance of Amendments to Facility Operating Licenses" (45 FR 62948), stating that NRC was considering issuance of amendments to expand Units 1 and 2 spent fuel storage capacity from 750 to 1,312 storage locations. No petitions to intervene or requests for hearing were filed by the October 22, 1980 deadline.

[3]Duke Power Company (Amendment to Materials License SNM-1773 for Transportation of Spent Fuel From Oconee Nuclear Station for Storage at McGuire Nuclear Station), ALAB-528, 9 NRC 146 (1979). With respect to NRDC and PIRG, *see. also* "Supplemental Order Ruling on Petitions for Leave to Intervene," Duke Power Company (Amendment to Materials License SNM-1773 for Oconee Nuclear Station Spent Fuel Transportation and Storage at McGuire Nuclear Station), LBP-79-2, 9 NRC 90 (1979); and LBP-79-3, "Order Denying Objections of Natural Resources Defense Council to Supplemental Prehearing Conference Order," 9 NRC 159 (1979). *See* Order Following Prehearing Conference dated November 2, 1978.

[4]A timely petition filed by the Natural Resources Defense Council (NRDC) was denied by the Licensing Board by Order of November 2, 1978. That denial was overturned by the Atomic Safety and Licensing Appeal Board in an unpublished Order entered on February 13, 1979 and the Atomic Safety and Licensing Appeal Board granted intervention to NRDC on a discretionary basis.

of Carolina Action. CA, SEA,[5] and PIRG were dismissed when they failed to respond to interrogatories, to answer pleadings, or to appear by attorney or *pro se* at the commencement of the hearing.[6]

A prehearing conference was held by the Board in Bethesda, Maryland on March 13, 1979 relative to the admission of contentions of NRDC. By Order of March 16, 1979, the six contentions of NRDC were admitted by the Atomic Safety and Licensing Board (Licensing Board).[7]

On December 29, 1978, the Nuclear Regulatory Commission Staff (Staff) issued a "Negative Declaration Regarding Proposed Amendment to Materials License SNM-1773" in Docket No. 70-2623 (43 FR 61057).[8] Based on the analysis in the Environmental Impact Appraisal (December 1978).[9] for the proposed amendment, the Negative Declaration stated that an Environmental Impact Statement for the particular action was not warranted. A Safety Evaluation Report (SER) was issued by the Staff in January 1979 on the proposed action examining the health and safety aspects of the proposed action.[10] It concluded that the issuance of the license amendment would not be inimical to the common defense and security and would not constitute an undue risk to the health and safety of the public. The SER further concluded that the request for the license amendment met the requirements of the Atomic Energy Act of 1954, as amended, and the regulations of the Commission, including specifically 10 CFR 70.23(a).[11]

Hearings in this proceeding were held in Charlotte, North Carolina on June 23, 1979; June 25-June 29, 1979; August 6-9, 1979; in Bethesda, Maryland on September 10-13, 1979; and in Charlotte, North Carolina on April 28-29, 1980. The hearing record was closed on April 29, 1980. All parties of record as of the date of close of the hearing called witnesses and filed proposed findings of fact and conclusions of law.[12] The State of South Carolina, participating pursuant to the provisions of 10 CFR 2.715(c), did not file proposed findings of fact and conclusions of law.

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[5]SEA had adopted the CESG contentions as its contentions in this proceeding. Thus, it had no separate contentions that were dropped when it was dismissed from the proceeding.

[6]*See* Board Orders, respectively, of May 23, 1979; April 12, 1979 and June 1, 1979, at Tr. 337-38.

[7]"Order Regarding Contentions of Natural Resources Defense Council" (March 16, 1979).

[8]Staff Exh. 35 (Tr. 4651).

[9]Staff EXh. 3 (Tr. 4649).

[10]Safety Evaluation Report (SER) Staff Exh. 28 (Tr. 4649).

[11]*Ibid.*, at 10-1.

[12]"Natural Resources Defense Council's Proposed Findings of Fact and Conclusions of Law in the Form of an Initial Decision" (May 29, 1980); "CESG's Proposed Elements of Fact and Conclusions of Law Toward An Initial Decision" (May 28, 1979).

C. Contentions and Issues

Eleven contentions were initially admitted by the Board in this proceeding.[13] Two of those contentions were dismissed when the parties raising them were dismissed or defaulted in this proceeding for failure to participate.

An additional contention involving a postulated drop of the truck cask used to transport Oconee spent fuel was admitted by the Licensing Board at the request of CESG at the September 11, 1979 hearing.[14]

Evidence on the contentions in issue was presented by Duke, by the Staff, and by the Intervenors, NRDC and CESG. Extensive cross-examination of the witnesses of each party was undertaken.

The following contentions were admitted by the Board:

NRDC Contentions

1. The proposed action is a step in a proposed program to handle the shortage of spent fuel storage space by shipping and storing spent fuel away from the reactor where it was generated. The proposed action has no independent value in solving the spent fuel storage problem and is inherently premised on the near-term construction of an interim away-from-reactor storage facility. The proposed action, if taken, will bias the final decision on whether to approve the program by foreclosing at-reactor options at both Oconee and McGuire. The proposed action is therefore inconsistent with the conditions 1 and 2 laid down by the NRC in promulgating the criteria for approval of interim spent fuel storage (40 FR 42801). Thus, the proposed action cannot be acted upon until completion of impact statements on the proposed program now being conducted by DOE (Storage of U.S. Spent Power Reactor Fuel (DOE/EIS-0015-D) August 1978, and Supplement, December 1978; Storage of Foreign Spent Fuel (DOE/EIS-0040-D) December 1978; Preliminary Estimates of the Charge for Spent-Fuel Storage and Disposal Services (DOE/ET-0041-D) December 1978) and NRC (Draft Generic Environmental Impact Statement on Handling Storage of Spent Light Water Power Reactor Fuel (NUREG-0404)) (Tr. 7-48).

2. The proposed action is a major federal action significantly affecting the quality of the human environment and cannot be acted upon until preparation of a final environmental impact statement (Tr. 48-60).

3. The following alternatives to the proposed action have not been adequately considered:

   a. Using Oconee as a last-on, first-off, base-loaded plant to reduce spent fuel discharge requirements.

[13] "Order Following Prehearing Conference" (November 2, 1978); ALAB- 528, *supra*, 9 NRC 146 (1979); "Order Regarding Contentions of Natural Resources Defense Council" (March 16, 1979); "Order Concerning Discovery, Contentions and Scheduling" (February 23, 1979).
[14] Tr. 4181.

b. Expanding spent fuel pool capacity at Oconee until the spent fuel can be shipped to a legally approved permanent storage facility for nuclear wastes.

c. Compaction of spent fuel in existing pools at Oconee.

4. The proposed action increases the exposure to radiation of workers and the general public beyond what is ALARA:

   a. ALARA can be achieved by on-site expansion of spent fuel pool storage capacity at Oconee, including building another spent fuel pool.

   b. The residual health risks which remain even if the present NRC regulations on exposures to workers are met are major costs of the proposed action which tip the balance against the proposed action (Tr. 77-85).

5. Applicant overstates the need for action at this time by using the one-core discharge capacity reserve standard as if it were a requirement where in fact it is not a requirement of NRC regulations. Either Applicant should be bound to comply with the one-core discharge capacity standard or it should have to demonstrate on a cost/benefit basis that holding that capability is more valuable than the costs of shipment off-site of one core of spent fuel (Tr. 85-127).

6. Applicant has failed to demonstrate that it is in compliance with applicable Commission regulations with regard to safeguarding spent fuel shipments.

CESG Contentions

1. CESG alleges that shipment of Oconee spent fuel to McGuire for storage is unacceptable as compared to other alternatives:

   a. Modification of the existing Oconee spent fuel pools to provide additional storage capacity;

   b. Construction of a new and separate spent fuel storage facility at the Oconee site;

   c. Construction of a new and separate spent fuel storage facility away from the Oconee site, but other than McGuire.

2. CESG alleges that transportation of spent nuclear fuel from the Oconee Nuclear Station for storage at the McGuire Nuclear Station will create an unacceptable hazard by significantly increasing the radiation doses to persons in the region near the proposed transportation routes between the two facilities. Specifically:

   a. There will be an unacceptable incremental burden of radiation dose to persons living in the vicinity of the transportation routes.

   b. There will be an unacceptable incremental burden of radiation dose to persons traveling over the transportation routes concurrently with spent fuel shipment.

c. There is likely to be an unacceptable incremental burden of radiation dose to persons in the vincinity due to an accident or delay in transit.

2A. With respect to case three of the cask drop analysis of Applicant's FSAR, 9.1.2.3.2, submitted involving a postulated cask drop accident at the spent fuel pool, the Applicant's analysis and Staff's review are inadequate. Case three involves tipping or dropping and tipping the cask, located above the floor or in contact with the floor level of the pit wall opposite the fuel pool side.

3. Factors set forth in items 1 and 2 above require the preparation of an Environmental Impact Statement because the proposed action is a major federal action of the Commission significantly affecting the quality of the human environment.

D. Motions for Summary Disposition

Motions for Summary Disposition were filed in this case by Duke, the NRC Staff, NRDC and CESG. Duke's Motion for Summary Disposition and Motion to Dismiss for failure to participate in the proceedings were granted by the Board against CA, SEA and the PIRG.[15] The motions of the Applicant and the Staff with respect to summary disposition of the contentions of NRDC and the contentions of CESG were denied.[16] The summary disposition motions of NRDC and CESG with respect to their contentions were also denied.[17]

The record in this proceeding consists of all the pleadings filed, the transcripts of the prehearing conference, the transcripts of the evidentiary hearings, and all exhibits received during the course of and after the hearings. A list of exhibits appears in Appendix A attached to this Initial Decision.

In making findings of fact and conclusions of law in this Initial Decision, the Board reviewed and considered the entire record and the proposed findings of fact and conclusions of law submitted by the Staff, by Duke, by NRDC and by CESG. The findings of fact and conclusions of law not incorporated directly or inferentially herein are rejected as being unsupported by the evidence of record, or as unnecessary to the rendering of the Initial Decision.

[15]Tr. 594-96.
[16]Tr. 294-95, 336, 595-96, 596-617.
[17]Tr. 340-41.

II. FINDINGS OF FACT ON CONTROVERTED ISSUES

A. Cascade Plan

Contention No. 1 of NRDC asserts that the proposed action of Duke is a first step in a proposed program or plan to handle the shortage of spent fuel storage space by shipping and storing spent fuel away from the reactor where it was generated.[18] The existence and nature of the so-called "Cascade Plan" was the subject of evidence addressed to this contention. Duke denied that it had a cascade program, and contended that the proposed action involved only the shipment of 300 spent fuel assemblies from Oconee to McGuire.[19] The Staff argued that the proposed transshipment is not part of a larger Duke program for the future storage of spent fuel being generated by operating reactors.[20]

We find that the proposed action involving the transfer of 300 spent fuel assemblies from Oconee to McGuire, is actually the first step in a plan or program to ship excess spent fuel from older nuclear reactors in Duke's system to newer reactors. This so-called Cascade Plan was developed and that name adopted by Duke about 1975.[21] Cascading, as defined by Ralph W. Bostian, manager of Duke's spent fuel storage options,[22] meant "that we would move fuel from an operating reactor to another reactor storage pool and upon perhaps filling of that, on to the next pool."[23]

Duke generated a number of internal memoranda and documents concerning its Cascade Plan. For example, a cost comparison was prepared October 17, 1978, concerning "Reracking Costs" and "Cascade Costs."[24] In December 1978, a memorandum on alternatives to keep Oconee operating stated that "Duke's plan to alleviate the problem of an overabundance of spent fuel assemblies, until the government develops a program of its own, is to ship these assemblies to the most recently completed Duke facility."[25] In a Duke memorandum dated April 26, 1979, entitled "Subject: Cascade Program Cost," it is stated that "The attached tables show our present transfer plans between Oconee, McGuire and Catawba."[26]

However, it appears that Duke was somewhat less than candid, if not actively devious, in not disclosing its Cascade Plan to the NRC. At a Duke

[18]Contentions, p. 7., *supra.*
[19]Applicant's Proposed Findings of Fact and Conclusions of Law, pp. 20-21, 61-68.
[20]NRC Staff Proposed Findings of Fact and Conclusions of Law, pp. 27-28, 120-122.
[21]Tr. 419, 544, 547.
[22]Tr. 405.
[23]Tr. 418.
[24]NRDC Exh. 9; Tr. 1140-47.
[25]NRDC Exh. 3; Tr. 1202.
[26]Tr. 444-51.

spent fuel storage review held on August 11, 1976, it was reported that "Transportation aspects should be handled internally and should not be addressed in discussions of expansion plans with NRC.... No mention of the cascade approach in licensing documents.[27]

Duke's frame of mind is also illuminated in a memorandum to high-ranking corporate officials from R.W. Bostian on November 10, 1977, regarding a letter from Congressman John E. Moss concerning spent fuel storage information. It was observed that an enclosed questionnaire "goes into considerable detail regarding past and future spent fuel storage plans and also touches on spent fuel shipping programs" for each reactor on the Duke system. The memorandum then stated that "A number of the staff people on the [Moss] Subcommittee are antinuclear and it is quite possible that the information requested by the questionnaire could be used by intervenor groups. I am particularly concerned that our response to the questionnaire will give information on our shipping program providing for transfer of spent fuel assemblies from Oconee to McGuire and from McGuire and Oconee to Catawba."[28]

In determining the existence and scope of a Cascade Plan or program involving multiple transshipments of spent fuel assemblies, it is necessary to evaluate the weight of the evidence and the credibility of witnesses and testimony. The Board was also able to observe the appearance and demeanor of witnesses in determining credibility. Duke's denial of a Cascade Plan rested largely on the testimony of a panel of witnesses consisting of Ralph W. Bostian, H.T. Snead and R.M. Glover.[29] Although these witnesses attempted to deny that Duke had developed and was pursuing the Cascade Plan, we do not find such denials to be credible or presuasive. In some instances, these witnesses attempted to give a strained meaning to such terms as "plan" or "program" in order to avoid their usual meaning in documents.[30] Such an expression as "our present transfer plans between Oconee, McGuire and Catawba" became very imprecise when the witness who had used the words in a memorandum, sought in testimony to avoid their normal meaning.[31] Such present self-serving characterizations cannot be permitted to distort the plain meaning of various documents.

It is often difficult in litigation to ascertain corporate purpose and intent. We therefore regard the actions approved by a management group on

[27]App. Exh. 4; Tr. 1004.
[28]NRDC Exh. 1; Tr. 441-43.
[29]Tr. 403 et seq. Mr. Bostian was Manager of the System Results and Fuel Management Group of the Steam Production Department (App. Exh. 3); Mr. Snead was Manager of the Nuclear Fuel Services Section working directly for Mr. Bostian (Tr. 405); and Mr. Glover was an Engineer in the Nuclear Fuel Services Section, reporting directly to Mr. Snead (Tr. 406).
[30]Tr. 442-43, 451, 504-05.
[31]Tr. 446-51.

August 11, 1976, reported by a Memorandum For File dated August 16, 1976,[32] as rather enlightening in this regard. The attendees at this meeting included highest level Duke officers, such as three members of its Executive Committee.[33] This meeting did not concern the musing or dreams of mid-level employees, but it directly involved Duke's corporate decision-makers. It was thus reported that "Management concurred with the study group recommendation of adding additional spent fuel storage to the system."[34] The approved method of expanding the Catawba pool was subsequently adopted. It was stated that "If possible, the Perkins and Cherokee units are to be isolated from the remainder of the system as far as spent fuel storage is concerned." However, it was further stated that "Fuel handling equipment at McGuire Nuclear Station should be modified to accept Oconee fuel. In the case of Cherokee and Perkins, contingency plans should be developed."[35]

Finally, we draw a strong negative inference from the statements indicating deliberate nondisclosure of these plans to NRC, as described above. Such statements as "Transportation aspects should be handled internally and should not be addressed in discussions of expansion plans with NRC," cannot be glossed over nor ignored by us. And we regard as disingenuous, if not downright misleading under all the circumstances, the further note that "Each plant is expanded solely on the basis of meeting its own need for storage space. No mention of the cascade approach in licensing documents."[36] Although copies of this Memorandum For File were sent to the attendees and other officers of Duke, there was never any corporate disavowal of its contents, which were thus concurred in by its President and Senior Vice Presidents.[37] The Cascade Plan, whether revealed to NRC or not, has continued to be a Duke policy or program. The latter-day use of euphemisms such as "keeping our options open"[38] does not alter the nature and scope of this program.

[32]App. Exh. 4; Tr. 1004.
[33]W.S. Lee, President of Duke; A.C. Thies, Senior Vice President in charge of production; and W.H. Owen, Senior Vice President of engineering and construction, Tr. 476, 634.
[34]App. Exh. 4.
[35]*Id.*
[36]*Id.*
[37]*Id.*
[38]Tr. 547-48.

B. NEPA Considerations

1. Scope of Environmental Analysis

The National Environmental Policy Act of 1969 (NEPA) requires in Section 102(2)(C)[39] the preparation and circulation of a detailed Environmental Impact Statement on all major Federal actions significantly affecting the quality of the human environment. The Commission's Regulations in 10 CFR Part 51 implement NEPA "in connection with the Commission's licensing and regulatory activities."[40] It is stated that the "principal objective of [NEPA] is to build into the agency decision making process an appropriate and careful consideration of environmental aspects of proposed actions."[41] These Regulations further specify types of actions that require either an environmental impact statement, a negative declaration supported by an environmental impact appraisal, or no environmental analysis at all.[42]

If the proposed action is a major Federal action significantly affecting the quality of the human environment, then there must be a "detailed statement by the responsible official on —

(i) the environmental impact of the proposed action,
(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity, and
(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."[43]

If the foregoing section of NEPA is applicable, the Commission's Regulations implement its requirements by providing that the NRC Staff prepare and circulate a draft environmental impact statement (DES), followed by publication of a final environmental impact statement (FES).[44]

NEPA further provides that all agencies of the Federal Government shall "(E) study, develop and describe appropriate alternatives to recom-

[39] 42 USC Section 4332(2)(C).
[40] 10 CFR Section 51.1(b).
[41] 10 CFR Section 51.1(a).
[42] 10 CFR Section 51.5.
[43] 42 USC Section 4332(2)(C).
[44] 10 CFR Section 51.5.

mend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources...."[45] This Section E has been held to complement the provisions of Section 102(2)(C)(iii) above, and to require Federal agencies to consider alternatives without regard to the necessity of filing an environmental impact statement under the latter section.[46]

In making an evaluation of the environmental impact of proposed action under NEPA, the scope of the environmental statement or appraisal must be at least as broad as the scope of the action being taken.[47] Thus, in determining whether segments of a federal aid highway project were sufficiently extensive for NEPA evaluation, it has been held that "the EIS must therefore take a pragmatic and realistic view of the scope of the action being contemplated. The view must be one neither confined by the literal limits of the specific proposal nor one unbounded except by the limits of the designer's imagination."[48]

The Appeal Board has had occasion to consider the question whether "in the totality of present circumstances, both the Staff and the Licensing Boards too narrowly drew the outer boundaries of the safety and environmental inquiries."[49] The *Prairie Island* and *Vermont Yankee* proceeding involved requests to expand spent fuel storage capacity by the installation of new, closer spaced spent fuel racks. The Intervenors contended that there was no reasonable assurance that offsite spent fuel repositories would be available when the facilities' operating life came to an end, and therefore the safety and environmental assessment must take account of the possibility that the expanded pools would become long term repositories (7 NRC at 46). The Applicants and the NRC Staff insisted there (as in the instant proceeding),

> "that we need not go beyond *Kleppe* v. *Sierra Club,* 427 U.S. 390 (1976), in quest of that answer. We are reminded that all that the applicants' operating licenses (as amended to enable enlargement of spent fuel pool capacity) authorize is the storage of the spent fuel in the pool for the license term. Any further period of storage would necessitate an additional authorization. We

[45]Section 102(2)(E), 42 USC 4332(2)(E). This section was originally enacted as Section 102 (2)(D) of NEPA. After adoption of another amendment, this provision although unchanged was renumbered as 102(2)(E).

[46]Hanly v. Kleindienst 471 F.2d 823, 834-5 (2nd Cir. 1972), *cert. denied* 412 U.S. 908 (1973); Trinity Episcopal School Corporation v. Romney, 523 F.2d 88 (2nd Cir. 1975).

[47]Swain v. Brinegar, 542 F.2d 364, 367 (7th Cir. 1976).

[48]*Id.* at 369. *See also* Indian Lookout Alliance v. Volpe, 484 F.2d 11, 18-20 (8th Cir. 1973); Named Individual Members of San Antonio Conservation Society v. Texas Highway Dept., 446 F.2d 1013 (5th Cir. 1971); Thompson v. Fugate, 347 F. Supp. 120, 124 (E.D. Va. 1972).

[49]Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2) and Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), ALAB-455, 7 NRC 41, 45 (1978).

are told that *Kleppe* teaches that the assessment of the environmental impacts associated with that additional authorization can abide the event of the filing of the application for the authorization. By a parity of reasoning, the safety evaluation could likewise be deferred until that time. We find that line of argument unpersuasive" (7 NRC at 47).

The Appeal Board stated that, based upon the assumption that there would be no offsite spent fuel repositories, the Intervenors were not asking for an appraisal of relative costs and benefits of two different future courses of action (continued onsite storage or offsite shipment). Rather, they sought an evaluation of the unavoidable consequence of the indefinite presence onsite of an increased quantity of spent fuel. The Appeal Board went on to state:

"Upon due recognition of these considerations, it becomes equally apparent that *Kleppe* is entirely inapposite. What the Supreme Court there held was that, in connection with its proposed issuance of four short term coal mining leases in the Northern Great Plains region, the Department of the Interior was not required by the National Environmental Policy Act to prepare an environmental impact statement on the entire region. In reaching that conclusion, the Court relied on the fact that Section 102(2)(C) of NEPA provides that the statement must be addressed to the environmental impact of the proposed action — including, *inter alia,* any adverse environmental effects which cannot be avoided should the proposal be implemented. There was, of course, no suggestion that implementation of the action proposed by Interior — the issuance of a limited number of short term coal leases — might entail environmental impacts of a regional scope. *And, as the Court noted, the District Court had expressly found that there was no existing or proposed plan or program* on the part of the Federal Government for the regional development of the area described in the [plaintiffs'] complaint. 427 U.S. at 400." (7 NRC at 47-8) (Emphasis Supplied)

As indicated above, *Kleppe* v. *Sierra Club,* 427 U.S. 390 (1976), involved the necessity of a regional environmental impact statement regarding the development of coal leasing, where there were impact statements for coal leases on both a local and a national scope. The Court found no evidence that the individual coal development projects proposed by private industry and public utilities were integrated into a regional plan or otherwise interrelated. Where no regional plan existed, there "would be no factual predicate for the production of an environmental impact statement of the type envisioned by NEPA." 427 U.S. at 402. The Court continued at footnote 14:

"In contrast, with both an individual coal-related action and the new national coal leasing program, an agency deals with specific action of known dimensions. With appropriate allowances for the inexactness of all predictive ventures, the agency can analyze the environmental consequences and describe alternatives as envisioned by Section 102(2)(C)...." 427 U.S. at 402.

It has been judicially held that environmental impact statements covering an entire coal lease area may be required where the scope of possible projects could involve environmental consequences, even though each mining plan for tracts within the leased area was to a significant degree an independent project.[50] The former Federal Power Commission was required to take into account the environmental costs of a coal gasification project as a whole, even though it had jurisdiction only over a lesser portion of the tap and valve facilities involved.[51] And an impact statement for the liquid metal fast breeder reactor research and development program as a whole was required by NEPA, rather than simply for individual facilities.[52]

In the instant proceeding, the Staff erred in limiting its NEPA review and analysis only to the environmental impacts associated with the shipment of 300 spent fuel rods from the Oconee to the McGuire nuclear plant. The proper scope of the environmental review should have been the Cascade Plan of multiple transshipments (Section IIA, *supra*) and the alternatives to it. The Staff made its environmental evaluation by means of a negative declaration supported by an environmental impact appraisal (EIA), under the provisions of 10 CFR Sections 51.5(c) and 51.7. The appropriateness of this procedure is considered *infra* in Section IIC.

We have expressly found that this application implementing the Cascade Plan is the first step in a plan or program to transship excess spent fuel from older to newer reactors in Duke's system.[53] Duke's plan is to alleviate the problem of excess spent fuel assemblies, "until the government develops a program of its own," by shipping those assemblies to the most recently completed Duke facility.[54] The existence of the Cascade Plan distinguishes the factual situation in this proceeding from that found by the Court in *Kleppe, supra,* where the District Court had "expressly found that there was no existing or proposed [regional] plan or program...."[55] As a result of the Cascade Plan, the proper scope of a NEPA evaluation must be as extensive as the scope of the Cascade Plan itself.[56]

The Cascade Plan as described by Duke is essentially a transportation plan or program. The scope of the NEPA analysis must therefore be as

[50]Cady v. Morton, 527 F.2d 786, 795 (9th Cir. 1975).
[51]Henry v. FPC, 513 F.2d 395, 407 (D.C. Cir. 1975).
[52]Scientists' Institute for Public Information, Inc. v. Atomic Energy Commission, 481 F.2d 1079, 1085-93 (D.C. Cir 1973). (SIPI)
[53]Section IIA, Cascade Plan, *supra.*
[54]NRDC Exh. 3; Tr. 1202.
[55]Kleppe v. Sierra Club, 427 U.S. 390, 400 (1976).
[56]Swain v. Brinegar, 542 F.2d 364, 367 (7th Cir. 1976); Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2) and Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), ALAB-455, 7 NRC 41, 47-48 (1978).

broad as the program itself, which proposes multiple future transshipments of spent fuel assemblies within the Duke system successively from the older to the newer reactors.[57] This transportation plan or program is like a game of musical chairs, which goes on and on until the government develops and provides nuclear waste storage facilities.[58] In the meantime, numerous spent fuel assemblies are to be transported by truck on the highways of South Carolina and North Carolina. However, this larger Duke plan or program has not been analyzed as such by the Staff in performing its NEPA review.[59] The public interest in knowing the full dimensions and implications of such a proposed transportation program has not been satisfied. Such a result is apparently intentional, because the instant limited application for a license amendment to permit shipment of spent fuel from Oconee to McGuire, follows the blueprint set forth in the Duke Memorandum For File dated August 16, 1976.[60] As there recommended, there is "no mention of the cascade approach in licensing documents." And the admonition that "Transportation aspects should be handled internally and should not be addressed in discussions of expansion plans with NRC," has been sedulously heeded.

Finally, this appears to be the only opportunity for a NEPA review of the entire Cascade highway transportation of spent fuel program. The Staff's witness who was the project manager for the Duke licensing action (Brett S. Spitalny), testified that if the Catawba license application was approved, Catawba in the future could receive Oconee spent fuel and there would be no need to have a proceeding such as this.[61] If NRC is to take the "hard look"[62] that NEPA is designed to require of Federal decision makers, then it must at some point look at the entire program together with its necessary ramifications. The NRC should not frustrate a fair NEPA review in reasonable depth by permitting any licensee to truncate or fragment the area of inquiry by a crabbed definition of the proposed action.

2. Five-Factor Balancing Test

In 1975 the Commission, pointing to a possible future shortage of spent fuel storage capacity, announced its intention to prepare a generic environmental impact statement (GEIS) on the subject to enable it to

[57]NRDC Exh. 3 and 9; Tr. 418, 444-451, 1202.
[58]NRDC Exh. 3; Tr. 541-42.
[59]Tr. 576-79; NRC Staff Proposed Findings of Fact and Conclusions of Law, pp. 27-28, 120-22.
[60]App. Exh. 4.
[61]Tr. 588, 590-92; Staff Exh. 16A, at 3.
[62]Kleppe, *supra*, 427 U.S. at 410, footnote 21; SIPI, It supra, 481 F.2d at 1086-89; NRDC v. Morton, 458 F.2d 827, 838 (D.C. Cir. 1972).

examine in a broad context the various alternatives for increasing that capacity.[63] Although noting that the shortage would occur at individual reactors and that the issues involved in alleviating it could be addressed in individual licensing reviews, the Commission determined that "from the standpoint of longer range policy, this matter can profitably be examined in a broader context."[64]

The Commission also considered whether licensing actions designed "to ameliorate a possible shortage of spent fuel storage capacity, including such actions as the issuance of operating license amendments to permit increases in the storage capacity of reactor spent fuel pools...or the licensing of independent spent fuel storage facilities" should be deferred pending the issuance of the GEIS.[65] The Commission concluded that there should be no general deferral of licensing actions, based on its evaluation of the following five specific factors:

(1) It is likely that each individual licensing action of this type would have a utility that is independent of the utility of other licensing actions of this type;

(2) It is not likely that the taking of any particular licensing action of this type during the time frame under consideration would constitute a commitment of resources that would tend to significantly foreclose the alternatives available with respect to any other individual licensing action of this type;

(3) It is likely that any environmental impacts associated with any individual licensing action of this type would be such that they could adequately be addressed within the context of the individual license application without overlooking any cumulative environmental impacts;

(4) It is likely that any technical issues that may arise in the course of a review of an individual license application can be resolved within that context; and

(5) A deferral or severe restriction on licensing actions of this type would result in substantial harm to the public interest. As indicated, such a restriction or deferral could result in reactor shutdowns as existing spent fuel pools become filled. It now appears that the spent fuel pools of as many as ten reactors could be filled by mid-1978. These ten reactors represent a total of about 6 million kilowatts of electrical energy generating capacity. The removal of these reactors from service could reduce the utilities' service margins to a point

[63]Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, 40 FR 42801-02 (September 16, 1975).
[64]40 FR at 42802.
[65]*Ibid.*

where reliable service would be in jeopardy, or force the utilities to rely more heavily on less economical or more polluting forms of generation that would impose economic penalties on consumers and increase environmental impacts."[66]

It was further stated:

> "The Commission expects that any licensing action intended to ameliorate a possible shortage of spent fuel storage capacity during this interim period would be accompanied by an environmental impact statement (10 CFR Section 51.5(a)) or impact appraisal (10 CFR Section 51.5(c)) tailored to the facts of the case. Since the Commission's general conclusions with respect to the five factors, as set forth above, may not fit the factual circumstances of particular licensing actions, the five factors will be applied, weighed and balanced within the context of these statements or appraisals in reaching licensing determinations."[67]

In order to evaluate the impact of these five factors on the "factual circumstances" of this particular case, we must apply and weigh these factors to the situation as it exists in the real world. The Licensing Board notes that the Staff issued its "Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel" (FGEIS), NUREG-0575, in August 1979. However, we further note, as the Applicant points out, that the Commission has not yet acted on this subject.[68] As the FGEIS itself states, "The Final Environmental Statement prepared by the staff is submitted to the Commission for its consideration" (Foreword p. i). We also note the Staff's prior position that a June 1, 1979 letter from NRDC counsel to the Commission could postpone "issuance of the final Commission GEIS" to a later date (Nuclear Regulatory Staff Response in Opposition to Natural Resources Defense Council Motion for Suspension of Hearing Schedule, dated June 15, 1979, p. 13). The NRDC June 1, 1979 letter to the Commission challenged the "validity and objectivity of the generic review" by the Staff because of its adversary position in this and other cases. The Commission was therefore requested to act itself upon the final GEIS, working with its General Counsel and the Office of Policy Evaluation (page 5, footnote 2 and attachment to NRDC Motion for Suspension of Hearing Schedule, dated June 1, 1979).[69] Accordingly, we reject the Staff's argument that its issuance of a proposed

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[66]*Ibid.*

[67]*Ibid. See also* Portland General Electric Company (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 269-71 (1979).

[68]Applicant's Proposed Findings, p. 5, footnote 3; Applicant's Response to NRDC's Proposed Findings, p. 2, footnote 2.

[69]Cf. Commission's Memorandum and Order regarding Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit 2), Docket No. 50-320, (October 16, 1979, CLI-80-25, 11 NRC 781 (1980); Negative Declaration of the Commission, 44 FR 61279 (October 24, 1979).

FGEIS renders unnecessary any further consideration of the five-factor balancing test.[70]

a. **Independent Utility**

The first element to be considered is the Commission's Factor 1, which states:

> "It is likely that each individual licensing action of this type would have a utility that is independent of the utility of other licensing actions of this type."

The Commission has addressed this issue of the independent utility of proposed actions in connection with the March 28, 1979 accident at Three Mile Island Unit 2 Nuclear Power Plant (TMI-2).[71] Substantial amounts of radioactively contaminated waste water had been collected in tanks at the facility. The Staff recommended that the licensee be permitted to operate a filtration and ion exchange decontamination system (EPICOR-II) to decontaminate intermediate-level radioactive waste water held in the auxiliary building tanks.

The Commission directed the technical staff, pursuant to NEPA, to prepare an environmental assessment of the use of EPICOR-II. At page 4 of the Slip Opinion, the Commission said:

> "Based on Commission review of the facts and analysis in the staff's environmental assessment [NUREG-0591] and written and oral discussion of the comments, the Commission has determined that the proposed operation of EPICOR-II will not have a significant effect on the environment. Pursuant to 10 CFR 51.7 and 51.50(d) the staff is directed to issue a negative declaration stating that an environmental impact statement for the proposed action will not be prepared." (*See also* Negative Declaration of the Commission, 44 FR 61279 (October 24, 1979)).

With respect to the independent utility question, it was further stated:

> "In reaching this conclusion the Commission has taken note of comments which argue that the Commission has violated NEPA by considering the impact of EPICOR-II separately and apart from the overall impact of a complete program for decontamination of TMI-2. The Commission does not believe this 'illegal segmentation' argument is well-founded in this case. In meeting NEPA requirements an agency may focus on the impact of a single action, even when it is arguably a segment of a larger program, when the action has independent utility. See *e.g., Lookout Alliance* v. *Volpe,* 484 F.2d 11 (8th Cir. 1973); *Friends of the Earth* v. *Coleman,* 513 F.2d 295 (9th Cir. 1975). The Commission finds that use of EPICOR-II meets this test."

[70]Staff's Proposed Findings, pp. 129-30.

[71]Commission's Memorandum and Order regarding Metropolitan Edison Company (Three Mile Island Nuclear Station Unit 2), Docket No. 50-320 (October 16, 1979).

It was noted that the Council on Environmental Quality had found that the prompt decontamination of the intermediate-level waste water through the EPICOR-II system was an operation necessary to control the immediate impacts of an emergency situation (40 CFR Section 1506.11), without passing upon the legality of the Commission's actions under NEPA (*Ibid.*). The Commission continued:

> "The independent utility of EPICOR-II is emphasized by the fact that decontamination of the intermediate-level water appears by a considerable margin to be the best available response to the impending accumulation of intermediate-level waste water in excess of adequately shielded storage capacity.... These benefits of EPICOR-II operation, together with the reduction of occupational exposure to workers in the auxiliary building, establish the independent utility of the system, thereby confirming that pursuant to NEPA environmental aspects of EPICOR-II may be evaluated separately from an overall programmatic analysis of cleanup at TMI-2."

Subsequently, the Commission decided to prepare a programmatic environmental impact statement on the decontamination and disposal of radioactive wastes at TMI-2. In its Statement of Policy and Notice of Intent to Prepare a Programmatic Environmental Impact Statement (44 FR 67738 (November 27, 1979)), it stated:

> "The Commission does recognize, however, that as with its EPICOR-II approval action, any action taken in the absence of an overall impact statement will lead to arguments that there has been an inadequate environmental analysis, even where the Commission's action itself is supported by an environmental assessment."

The TMI-2 EPICOR-II controversy has also been before the courts. In *Susquehanna Valley Alliance* v. *Three Mile Island,* 619 F.2d 231 (3rd Cir. 1980), it was alleged that the NRC, by fragmenting its consideration of the intermediate-level contaminated water without preparing an environmental impact statement, had violated its NEPA duty. The Court of Appeals stated that "Segmentation of a large or cumulative project into smaller components in order to avoid designating the project a major federal action has been held to be unlawful" (*Ibid.* at 240). The lower Court's dismissal of this court of the complaint for lack of subject matter jurisdiction was held to be in error. However, this holding did not necessarily mean that injunctive relief should be granted on remand, because it "may be that NRC will convince the court that its fragmentation of the contaminated water problem was entirely proper, or at least within the range of permissible agency discretion on the timing of environmental impact statements" (*Ibid.* at 241). The reviewing court further held that it had no occasion to determine what effect the NRC's November 21, 1979 Statement of Policy and Notice of Intent to Prepare a Programmatic Environmental Impact

Statement, *supra,* might have on the proper disposition of this issue (*Ibid.* at 242).

The highway segmentation cases have discussed NEPA issues arising from the noncomprehensive consideration of larger highway projects divisible into smaller parts. It has been held that segments that fit into an overall highway plan should be as large as feasible under usual construction and financing practices, and at least have an independent utility by meaningful terminal points.[72] The scope of an environmental impact evaluation should be at least as broad as the action being taken, and piecemealing should be avoided so that an assessment of the impact will be meaningful.[73] But if a section of highway has local utility and connects logical termini, it is not necessary to have a corridor EIS for a much larger stretch of highway.[74]

The segmentation of a larger plan or program into smaller components was held to be an evasion of NEPA requirements, where the postal service considered only the impact of constructing a new mail facility about seven miles from an old facility, without considering the environmental impact of abandonment of the old facility.[75] Environmental impact statements have been required for overall projects where individual actions were related to them logically or geographically.[76] This was true even where the federal agency only had jurisdiction over a lesser portion of the project.[77] However, separate phases of large dam projects have been held to be essentially independent, so that impact statements were permitted as to the individual projects.[78]

The "factual circumstances" in the instant proceeding show that Duke's multiple spent fuel transshipment or Cascade program does not have independent utility within the meaning of Factor 1. The Commission decided that there should be no "general deferral, and that these related licensing actions may continue," for the time required to prepare a generic statement (40 FR at 42802). The "related licensing actions" that may continue were defined as "licensing actions intended to ameliorate a possible shortage of spent fuel storage capacity, including such actions as

[72]Indian Lookout Alliance v. Volpe, 484 F.2d 11, 19 (8th Cir. 1973); Named Individual Members of San Antonio Conservation Society v. Texas Highway Dept., 446 F.2d 1013 (5th Cir. 1971); Thompson v. Fugate, 347 F. Supp. 120 (E.D. Va. 1972).
[73]Swain v. Brinegar, 542 F.2d 364, 367-68 (7th Cir. 1976).
[74]Conservation Society of Southern Vermont v. Secretary of Transportation, 531 F.2d 637 (2nd Cir. 1976).
[75]City of Rochester v. United States Postal Service, 541 F.2d 967, 972-73 (2nd Cir. 1976).
[76]Susquehanna Valley Alliance v. Three Mile Island, 619 F.2d 231, 240, fn. 11 (3rd Cir. 1980); SIPI, *supra,* 481 F.2d 1079, 1086-89.
[77]Henry v. FPC, 513 F.2d 395, 407 (D.C. Cir. 1975).
[78]Sierra Club v. Froehlke, 534 F.2d 1289 (8th Cir. 1976); Trout Unlimited v. Morton, 509 F.2d 1276 (9th Cir. 1974). *See also* Friends of the Earth v. Coleman, 513 F.2d 295 (9th Cir. 1975).

the issuance of operating license amendments to permit increases in the storage capacity of reactor spent fuel pools or reprocessing plant spent fuel storage pools, or the licensing of independent spent fuel storage facilities" (*ibid.*). The three[79] ameliorative licensing actions included in the above description, wherein the Commission considered the question of deferral, were discussed in the context of the Commission's concern that the "generic impact statement should not serve as a justification for a fait accompli" (40 FR at 42802). The carefully chosen language used by the Commission regarding the avoidance of a *fait accompli,* is especially apt when applied to the described "related licensing actions," which include the enlargement of spent fuel pool capacity or the construction of independent spent fuel storage facilities. These types of construction could indeed constitute accomplished facts by the time a generic impact statement was approved, if it were not for the Commission's general findings of independent utility under Factor 1 and a favorable balancing of the other four factors.

The Commission's reasoning justifying the licensed enlargement of the capacity of spent fuel pools does not appear to be applicable to multiple transshipment schemes such as the Cascade Plan. It is true that in describing the projected generic environmental impact statement, the alternatives to be addressed under paragraph (2) included:

"(d) Storage of spent fuel from one or more reactors at the storage pools of other reactors" (*Ibid.*).

However, such an alternative to be considered in the generic environmental impact statement was not given the Commission's seal of approval any more than another alternative that immediately followed it, namely:

"(e) Ordering that generation of spent fuel (reactor operation) be stopped or restricted" (*Ibid.*).

The Duke Cascade Plan, standing alone, does not have independent utility. It merely transports spent fuel from older to newer reactors in sequence, but its utility is interdependent with other factors. While its first step may temporarily remove spent fuel assemblies from Oconee units 1, 2 and 3, this is accomplished only at the expense of prematurely using up equivalent spent fuel storage space at the McGuire facility. This multiple transshipment process goes on and on, involving the premature using up of

[79]On April 7, 1977, President Carter announced the indefinite deferral of all civilian reprocessing of spent nuclear fuel, so the second licensing action described above is not presently available (Tr. 4515). Applicant has a contract with Allied General Nuclear Services to reprocess Oconee spent fuel at the proposed reprocessing plant in Barnwell, South Carolina, Tr. 411 and App. Exh. 2 at p. 1-1.

storage space at Catawba and possibly the Perkins and Cherokee facilities as well.[80]

In addition to the interdependence of Oconee and the various other Duke spent fuel pools, the Cascade Plan also depends upon the interim or ultimate availability to Duke of government waste management or storage facilities. As an internal memorandum aptly put it, "Duke's plan to alleviate the problem of an overabundance of spent fuel assemblies, until the government develops a program of its own, is to ship these assemblies to the most recently completed Duke facility."[81]

The Cascade Plan is essentially a nuclear waste transportation and transshipment program. It does not involve the independent utility of increases in or enlargement of the onsite storage capacity of reactor spent fuel pools, as contemplated by the Commission, [82] and often approved in NRC proceedings.[83] As the Commission has stated, there "appear to be a number of possible alternatives for increasing spent fuel storage capacity including, among other things, increasing the storage capacity at present reactor sites, and construction of independent spent fuel storage facilities" (40 FR at 42802). These possible alternatives possess the requisite independent utility; the Cascade Plan does not.

The other type of individual licensing action which would have independent utility under Factor 1 is illustrated by the TMI-2 decision concerning EPICOR-II, *supra.* There, the decontamination of intermediate-level waste water had the independent utility of reducing or eliminating the radioactivity of the water in the auxiliary building. This prevented the accumulation of waste water in excess of adequately shielded storage capacity, and reduced the occupational exposure to workers in the auxiliary building. This was independently beneficial, regardless of whatever other programmatic cleanup actions were taken in the future.

Obviously the multiple transshipments of the Cascade Plan do not operate to reduce or eliminate radioactive waste. Transporting spent fuel elements about the country does not significantly alter their form or change their quality. A juggler with many balls in the air may give the illusion of purposeful motion, but the number of balls for which he or she is ultimately responsible is not changed. We hold that the transshipment of spent fuel

[80]App. Exh. 4.
[81]NRDC Exh. 3; Tr. 1202, 4763.
[82]40 FR at 42802.
[83]Dairyland Power Cooperative (LaCrosse Boiling Water Reactor), LBP-80-2, 11 NRC 44 (1980); Portland General Electric Company (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979); Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2) and Vermont Yankee Power Corporation (Vermont Yankee Nuclear Station), ALAB-455, 7 NRC 41 (1978).

elements from Oconee to McGuire does not have independent utility under Factor 1.

b. **Foreclosure of Alternatives**

The Commission's Factor 2 provides:

> "It is not likely that the taking of any particular licensing action of this type during the time frame under consideration would constitute a commitment of resources that would tend to significantly foreclose the alternatives available with respect to any other individual licensing action of this type" (40 FR at 42802).

The commitment of both material and nonmaterial resources must be considered in connection with the Duke transshipment plan. Material resources would include spent fuel shipping casks, trucks fuel, men and materials, use of space and environmental resources (air, aquatic and terrestrial resources), equipment modification and construction and operation of fixed-base facilities.[84] While not insignificant, it is not likely that the commitment of such resources in the physical sense would tend to significantly foreclose available alternatives.[85]

However, it is likely that the Duke plan would foreclose alternatives by the commitment of nonmaterial resources. If transshipments were licensed, it is probable that Duke would simply pursue its Cascade Plan, and would not adopt other alternatives available to it. For example, although reracking of Oconee spent fuel pools was a viable alternative to increase storage capacity,[86] Duke has always been reluctant to do so. In 1975, it felt that "it was impractical" to rerack the Oconee Units 1 and 2 pool.[87] In March 1978, Duke asserted that "Since space for interim storage of the fuel in the Oconee 1 and 2 pool is not available this option [reracking] is not considered viable."[88] But in February 1979, Duke conceded that "If licensing delays do not extend beyond the June time frame requested reracking can proceed without necessitating shipment of spent fuel off site" (letter to Harold Denton from William O. Parker, Jr., dated February 2, 1979).[89]

The Staff's Environmental Impact Appraisal (EIA), dated December 1978, stated that such reracking was a viable alternative, but accepted the excuse that the "time required to rerack the basin, 15 months, is greater

[84]Staff Exh. 16A, pp. 4-5.
[85]Staff Exh. 3 (EIA), p. 63.
[86]*Id.*, at 56.
[87]Tr. 419 (Bostian).
[88]Information Supporting Storage of Oconee Spent Fuel at McGuire, March 9, 1978, pp. 18-22, cited in NRDC Motion for Suspension of Hearing Schedule, dated June 1, 1979, p. 4.
[89]*Id.*, p. 4.

than the time remaining before the shortage of spent fuel storage space at Oconee impacts on production of electricity."[90] A Duke witness later testified that "we believed high density racks were a licenseable means of storage in October 1978."[91]

In spite of those erroneous negative representations and excuses for not taking action, Duke did in fact finally perform the high density reracking of the Oconee Units 1 and 2 spent fuel pool, and prior to November 21, 1979, eleven of the fourteen modules were in place.[92] Duke is also in the process of seeking an amendment to its Oconee license to authorize installation of poison racks at the Units 1 and 2 pool.[93]

In a curious twist in reasoning, Duke now asserts that "Clear indications that spent fuel storage options have not been foreclosed are evidenced by Applicant's subsequent application for high density reracking and its stated intent to seek approval of poison reracking for its Oconee Units 1 and 2 pool."[94] However, the opposite inference appears to be more plausible. These actions demonstrate that it was the lack of a transshipment license approval which compelled Duke, reluctantly and belatedly, to rerack and thereby extend its on-site storage capacity to 1991 (App. Exh. 30).

A decision-date report that was provided to the Licensing Board in the instant proceeding on September 13, 1979, showed that Duke would be at a decision point regarding poison rack installations at Oconee by December 1979. When asked why Duke had decided to seek approval for reracking with poison racks, the Duke witness (Ralph W. Bostian) testified:

> "Principally for the same reasons we chose to install high density racks. We were at a key decision point and there were uncertainties associated with the alternatives. As an insurance measure we felt it necessary to take this step. Although it too would be subject to the uncertainties of the licensing process."[95]

The Staff's witness (Brett S. Spitalny) testified similarly that "As a result of delays in this proceeding and the need to acquire additional storage space, Duke has exercised their option to use these alternatives, as evidenced by their recent actions."[96]

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[90]Staff Exh. 3, pp. 53, 56.
[91]App. Exh. 30, p. 2 (Bostian).
[92]App. Exh. 30, p. 1 (Bostian); Applicant's Response to NRDC's Proposed Findings (June 13, 1980), p. 6.
[93]App. Exh. 30, p. 2.
[94]Applicant's Proposed Findings, p. 22, footnote 18; *Cf.* NRC Staff's Proposed Findings, para. 63, p. 40.
[95]App. Exh. 30, p. 2 *Cf.* Tr. 4767.
[96]Staff Exh. 36, p. 4.

It is thus reasonable to infer that Duke's various reracking decisions have been made reluctantly, as late as possible, and probably under the impact of the perceived "delays" and "uncertainties of the licensing process" in connection with the instant spent fuel transportation proceeding. It is therefore likely that licensing the Duke transshipment plan would tend to significantly foreclose other alternatives, and that the Cascade Plan would be pursued by it as a "quick fix" preferred to other available alternatives.[97]

c. **Cumulative Environmental Impacts**

The Commission's Factor 3 states:

> "It is likely that any environmental impacts associated with any individual licensing action of this type would be such that they could adequately be addressed within the context of the individual license application without overlooking any cumulative environmental impacts" (40 FR at 42802).

Inasmuch as the evaluation of potential environmental impacts has been limited to the transportation of 300 spent fuel assemblies from Oconee to McGuire, any "cumulative environmental impacts" which could be associated with the Duke Cascade Plan, *supra,* have been overlooked by the Staff within the meaning of Factor 3.[98] No attempt has been made to address possible cumulative impacts associated with future multiple transshipments of spent nuclear fuels, contrary to the requirements of Factor 3.

d. **Resolution of Technical Issues**

Factor 4 was stated to be:

> "It is likely that any technical issues that may arise in the course of a review of an individual license application can be resolved within that context" (40 FR at 42802).

The likelihood that technical issues could not be resolved in the course of a licensing review is not a significant factor, as the projected transshipments do not present technical issues that cannot be resolved in this proceeding.[99]

e. **Risk of Reactor Shutdowns**

> "A deferral or severe restriction on licensing actions of this type would result in substantial harm to the public interest. As indicated, such a restriction or deferral could result in reactor shutdowns as existing spent fuel pools become

[97] *Cf.* Commission's Memorandum and Order regarding Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit 2), Docket No. 50-320 (October 16, 1979), Portland General Electric Company (Trojan Plant), ALAB-531, 9 NRC 263, 268 (1979).
[98] Staff Exh. 3, pp. 63-4; Tr. 576-79; NRC Staff Proposed Findings, pp. 120-22.
[99] NRDC'S Proposed Findings, p. 14, footnote 11; Applicant's Response to NRDC's Proposed Findings, p. 9.

filled. It now appears that the spent fuel pools of as many as ten reactors could be filled by mid-1978. These ten reactors represent a total of about 6 million kilowatts of electrical energy generating capacity. The removal of these reactors from service could reduce the utilities' service margins to a point where reliable service would be in jeopardy, or force the utilities to rely more heavily on less economical or more polluting forms of generation that would impose economic penalties on consumers and increase environmental impacts."

Denial of licensing of spent fuel assembly multiple transshipments will not jeopardize the continued operation of the Oconee nuclear facility. Duke has recently completed the installation of eleven modules for the high density reracking at the spent fuel pool for Units 1 and 2.[100] A decision was made by it not to install the three remaining modules yet because of the likelihood that poison racks would be installed there in the near future, and hence it would be less expensive to rerack once instead of twice.[101] The effect of this high density reracking is to provide Oconee spent fuel storage capacity until September 1982, including sufficient capacity for a Full Core Reserve (FCR).[102]

The installation of poison racks for the Oconee 1 and 2 pool has been the subject of the letting of bids by Duke, under which the work is scheduled for completion by March-April 1981, assuming timely regulatory approval. The record does not show any objections to the increase of onsite storage capacity by poison reracking, nor any likelihood of licensing delays. Intervention petitions must be filed by October 22, 1980 (45 FR 62948). This action will provide 1,312 storage locations, which will allow Oconee to maintain FCR storage capacity through November 1986. This modification will also defer loss of all onsite storage to September 1987.[103] In addition, the poison reracking of Unit 3 spent fuel pool would extend Oconee FCR storage capacity to April 1991.[104]

Although Duke contends that offsite transshipment of spent fuel assemblies from Unit 3 is necessary for poison reracking, there is some evidence that onsite transfers from pool 3 to pool 1 and 2 could be accelerated, possibly to 50 transfers in a 25-workday month.[105] If necessary, the working month could be increased to 30 days. At that rate, poison racks could be installed in pool 3 by the middle of 1983, and storage capacity thereby extended to 1991. It therefore appears that a denial of a transshipment license will not result in a shutdown of the Oconee reactors

[100]Applicant's Exh. 30.
[101]*Ibid.*
[102]Tr. 4761.
[103]Staff Exh. 36, p. 4; Licensee Exh. 30, p. 2; Tr. 4750, 4762.
[104]Staff Exh. 36, Enclosure 2.
[105]Tr. 4779-83.

within the meaning of Factor 5, nor in consequential harm to the public interest.

The Commission further stated, with regard to the five-factor balancing test.

> "Since the Commission's general conclusions with respect to the five factors, as set forth above, may not fit the factual circumstances of particular licensing actions, the five factors will be applied, weighed and balanced within the context of these statements or appraisals in reaching licensing determinations" (40 FR at 42802).

In applying the five factors to the circumstances of the instant proceeding, upon balance the Duke multiple transshipment plan should be denied. The licensing action would not have independent utility, and it is likely that it would constitute a commitment of resources that would tend to significantly foreclose available alternatives. Possible cumulative environmental impacts have not been adequately considered, and a denial of the licensing action would not cause a shutdown of the Oconee reactors.

C. Adequacy of Environmental Impact Appraisal

The Commission's Notice of Intent to Prepare Generic Environmental Impact Statement further provided:

> "The Commission expects that any licensing action intended to ameliorate a possible shortage of spent fuel storage capacity during this interim period would be accompanied by an environmental impact statement (10 CFR 51.5(a)) or impact appraisal (10 CFR 51.5(c)) tailored to the facts of the case" (40 FR at 42802).

The Staff determined that an environmental impact statement under NEPA, Section 102(2)(C) need not be prepared because "the impacts will not significantly affect the quality of the human environment."[106] The Staff therefore prepared only a negative declaration and an environmental impact appraisal (EIA).[107] However, the Staff failed to take into account or to adequately evaluate certain significant aspects of Duke's multiple transshipment plan, and thereby failed to produce an impact statement "tailored to the facts of the case" (40 FR at 42802).

In the first place, the Staff wholly failed to consider in its EIA the Duke Cascade Plan or multiple transshipment program or scheme. The Staff's witness testified that he was aware of at least some aspects of the Cascade

[106]Staff Exh. 3 (EIA), pp. IV and V, 65.
[107]*Ibid.*

Plan 6 or 7 months prior to issuance of the EIA, but chose to permit segmentation of the plan by Duke.[108] However, this decision and the basis for it were not disclosed or discussed in the EIA (*Ibid.*). The evidence concerning the existence and scope of the Cascade Plan has been discussed above (Sections II, A and B11, pp. 10-24, *supra*), and will not be repeated here.

Next, the unusual if not unique nature of even the Oconee to McGuire segment of the transshipment plan was not adequately identified or analyzed in the EIA. The proposed transportation of spent fuel assemblies from Oconee to McGuire would involve a distance one way of about 170 miles (270 Km), or a 340-mile round trip for each truck cask.[109] The Staff assumed that on each trip the "two drivers would probably not spend more than five hours in the truck cab" (EIA, 5.3.1, p. 30). Oddly, the Staff also assumed that each shipment "would travel the 270 km (170 mi) in 6 hours" (*Ibid.*, 5.3.2, p. 31). In any event, it was proposed that 300[110] such shipments of high-level radioactive waste would be made in the period of one year,[111] at a frequency of one per day.[112] The number of round trips between Oconee and McGuire per month for the transportation of spent fuel was testified to be 25.[113] Duke owns one truck cask, which it intends to use for the 300 shipments of spent fuel assemblies from Oconee to McGuire.[114]

It is apparent that an unusually intensive shipping program is to be established by Duke. Some 300 shipments are to be made within a year, at the rate of 25 per month. To the extent that the same primary routes are used, this means that every day for a six-day work week for a year, a large truck loaded with a spent fuel cask carrying radioactive materials will pass each house, building or establishment located on that highway. There will be round trips of the spent fuel cask each day in every city, county or rural area through which such routes pass.

The Staff's witnesses testified that spent fuel casks have been allowed in the public transportation system for the past 30 years, and that as of 1972,

[108]Tr. 572-74, 576 (Brett S. Spitalny); Staff Exh. 36, p. 4.
[109]Staff's Proposed Findings, para. (61), p. 39.
[110]Duke's application to amend the license (Special Nuclear Materials License SNM-1773) seeks authorization to store 400 spent fuel assemblies from the Oconee facility to the McGuire spent fuel pool (Staff's Proposed Findings, p. 2). However, the Staff's witness testified that it proposed a license condition to limit the number of transported fuel assemblies to 300 (Tr. 572).
[111]Staff's Proposed Findings, para. 118, p. 69.
[112]Tr. 571.
[113]Tr. 4753 (Ralph W. Bostian); 4781 (R.M. Glover).
[114]Staff Exh. 36, p. 2, Enclosure 1.

about 3,600 shipments had been made with two reported highway accidents.[115] The annual shipping rate for spent fuel in the United States was estimated for 1975 as about 270 shipments per year.[116]

At the rate of 300 spent fuel shipments in one year, the Oconee to McGuire transportation alone would be greater than the annual total of all such shipments in the entire country. It would also be almost 10 per cent of all shipments of spent fuel for 30 years prior to 1972. It is likely that such an unusual concentration of shipments in a period of one year might or could intensify some of the risks and problems associated with the transportation of high-level radioactive waste or spent fuel.[117] However, the EIA does not even identify this unusually intensive use of the public highways in North and South Carolina, let alone analyze it or evaluate its ramifications in relation to possible environmental or safety impacts.

The Commission has indicated that impact statements concerning the handling and storage of spent reactor fuel should include an analysis of "Environmental, social, and economic costs and benefits" (40 FR at 42802). However, the instant EIA does not adequately consider the potential social consequences of transshipment. The social impact categories involved in an analysis of the highway transportation of radioactive materials could reasonably be expected to include psychological, sociological and political impacts.

The question of NRC consideration of community fears and psychological stress under NEPA has assumed special significance following the Three Mile Island accident on March 28, 1979,[118] The Commission considered the subject in a proceeding before it involving a Staff recommendation that the licensee be authorized to commence a controlled purging of TMI-2 reactor building atmosphere in order to remove the remaining radioactive Krypton-85. The Staff had prepared a draft Environmental Assessment, which had received numerous public comments which were included in the final draft. The Commission stated:

> "The Environmental Assessment contains ample evidence to show that risk to physical health from the proposed purge or from any of the alternative decontamination methods considered by the staff would be negligible. See Table 1.1, NUREG-0662. The assessment also addresses the effects on the psychological well-being of persons living in the vicinity of TMI. The staff

[115]Staff Exh. 9, p. 5.

[116]*Ibid.*

[117]Based on the above history of two reported accidents in 3,600 shipments, the probability of a highway accident involving a spent fuel shipment can be calculated to be about 5.6×10^{-4} per shipment. If each of Duke's proposed shipments is exposed to an equal risk, the probability of one accident occurring in 300 shipments would be about 1.7×10^{-1}, or one in six.

[118]Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit 2), CLI-80-25, 11 NRC 781 (1980).

concluded that psychological stress resulting from the proposed venting of Kr-85 will be less than from any of the alternatives including the alternative of taking no action. Testimony at the June 5, 1980 oral briefing by expert consultants on the question of psychological stress supported this conclusion and indicated that purging the containment should have the net effect of reducing the stress which otherwise would occur if positive steps are not taken promptly to proceed with decontamination and reduce uncertainty about the present and future condition of TMI-2" (*Ibid.* at 783).

The Commission concluded that the purging should be carried out promptly, and the "[p]hysical health impacts will be negligible, and a long term reduction in the sources of psychological stress is expected."[119] Although the Commission has not yet acted with finality on the psychological impact issue, we note that the Staff made such a study and evaluation in TMI-2, even where it concluded that an environmental assessment was sufficient and that health risks would be negligible.

In the instant proceeding, there were limited appearance statements from the following local government representatives, organizations and individuals:

Local Government

Charlotte City Council
County Commissioner of Mecklenburg County
Gaston County Board of Commissioners
Gaston County Manager
Greenville County Council
Lincoln County, N.C. Board of County Commissioners
Mayor, Charlotte, North Carolina (Eddie Knox)
Mayor, Greenville, South Carolina (Max M. Heller)

Organizations

Carolina Action
Gaston Taxpayers Association
League of Women Voters of North Carolina
Palmetto Alliance
Safe Energy Alliance
Sierra Club
Student Legislature of UNCC

[119] *Ibid.* at 786. In footnote 9, the Commission noted that it has not yet determimed whether psychological stress is a health concern under the Atomic Energy Act and/or an environmental impact cognizable under NEPA, and that it is presently considering those issues in connection with the TMI-1 restart proceeding.

Individuals

Belk, Donald R.
Dalton, H. McRae, Jr.
Dalton, Rebecca E.
Douglas, J. Scott
Dykes, Virginia
Ervin, Louise G.
Kelley, Ella
Kennerly, Fred M.
Kiefer, Nancy R.
McIntosh, W. Guy
Mando, Anna
Roberts, Carcos
Robinson, Fay S.
Setzer, Bobby R.
Sife, Mimi
Sparge, Linda

As the Applicant notes, the primary concerns of those persons related to accidents and the radiological consequences thereof.[120] Concerns were expressed by governmental bodies through whose territory the spent fuel casks would pass, such as the City of Charlotte and the Counties of Mecklenburg, Lincoln and Gaston. Such limited appearance statements are not evidence and we do not take them as proof of the matters asserted. However, such statements do reflect substantial public interest in and concern over the proposed highway shipments of spent fuel. We do not consider such statements to be read as requiring that "federal law yield to local resolutions," as Duke fears.[121] But to reflect in an EIA appropriate appreciation of apprehensions expressed by the public, does not ask too much of the Staff in tailoring its environmental review to the facts in this particular case.

It is interesting to note that a Duke witness (Ralph W. Bostian) testified several times that the changing political climate was a factor to be considered in evaluating transshipment of spent fuel.[122] He testified:

"Question. Can you tell me what are the political considerations you had reference to?

[120]Applicant's Response to CESG's Proposed Findings, p. 3.
[121]*Ibid.* at 4.
[122]Tr. 424, 453, 512-13.

Answer. (Witness Bostian) The political considerations are the local concerns that have been expressed to us by cities and counties along the transfer route.

Question. Are those considerations such that if you could rerack Oconee 1 and 2 in time to not lose full core reserve that you would abandon transshipping between Oconee and McGuire?

Answer. I don't think that I could answer that yes or no at this point. I think we will have to see the implications of the new NRC regulations [concerning safeguards], see to what degree they allay the concerns of the communities through which this will be going. If the opposition that we have seen developing subsides, then we would certainly consider transshipment, but if it continues to develop we would certainly have to consider other alternatives."[123]

In spite of the logical concern of Duke over these political and social impacts, the EIA does not analyze or adequately consider them. The EIA is inadequate and insufficient to support a negative declaration under NEPA and 10 CFR Sections 51.5, 51.7.

D. Consideration of Alternatives

The pertinent statutory provisions with regard to consideration of alternatives appear in NEPA, Section 102 (42 U.S.C. Section 4332) as follows:

"The Congress authorizes and directs that, to the fullest extent possible:

...(2) all agencies of the Federal Government shall — ... (C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment a detailed statement by the responsible official on — ...(iii) alternatives to the proposed action, ...(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal, which involves unresolved conflicts concerning alternative uses of available resources."[124]

It has been observed that Paragraph (iii) of NEPA, Section 102 (2)(C) "is a terse notation for: 'The alternative ways of accomplishing the

[123]Tr. 454. This testimony was given on June 20, 1979. Most of the limited appearance statements described above were given or filed subsequent to that date.

[124]Prior to 1975 (P.L. 94-83), subpart (E) of Section 102(2) was lettered as subpart (D). The wording of the subpart was not changed by that amendment.

objectives of the proposed action and the results of not accomplishing the proposed action.' "[125] An analysis of such alternatives has been held to be the "linchpin" of environmental analysis.[126]

The legislative history of NEPA indicates the importance of the consideration of alternatives by the statement that "...the agency shall develop information and provide descriptions of the alternatives in adequate detail for subsequent reviewers and decision makers, both within the executive branch and the Congress, to consider the alternatives along with the principal recommendations,"[127]

The alternatives available here to Duke, in addition to multiple highway transshipments, include compacting spent fuel by reracking Oconee pools with stainless steel racks, or poison racks, or pin compaction, and the construction of an Independent Spent Fuel Storage Installation (ISFSI).

I. Reracking Spent Fuel Pools

Additional spent fuel storage capacity can be obtained at Oconee 1 and 2 pool by reracking with high-density stainless steel racks, to provide 414 additional spaces (Staff Exh. 13, 750-336 = 414). The Staff's EIA states that "This [reracking] option is technically viable but does not meet the immediate needs of the applicant."[128] That conclusion was based on the EIA statement in 1978 that "The time required to rerack the basin, 15 months, is greater than the time remaining before the shortage of spent fuel storage space at Oconee impacts on production of electricity" (*Ibid.* at 53, 56). However, that erroneous conclusion was overtaken by events. The stainless steel reracking option was not only "technically viable," but it was in fact completed by Duke prior to November 21, 1979, as described in Section B2e, pages 41-4, *supra.* [129] Thus, the EIA excuse for not adopting this alternative has vanished, and the negative conclusion should likewise vanish. Duke has thereby extended its storage capacity at least to September 1982, including full core reserve. Obviously, this is a preferable alternative because it eliminates any risk, however small, of radioactive

[125]Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 833 (D.C. Cir. 1972).
[126]United States Energy Research and Development Administration et al. (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67, 89 (1976). See also Monroe County Conservation Society, Inc. v. Volpe, 472 F.2d 693, 697-98 (2nd Cir. 1972).
[127]S. Rep. No. 91-296, 91st Cong., 1st Sess., 21. *See also* Trinity Episcopal School Corporation v. Romney, 523 F.2d 88, 93 (2nd Cir. 1975); Hanly v. Kleindienst, 471 F.2d 823, 834-35 (2nd Cir. 1972), *cert. denied* 412 U.S. 908 (1973); Calvert Cliff's Coordinating Committee v. AEC, 449 F.2d 1109, 1114 (D.C. Cir. 1971).
[128]Staff Exh. 3, p. 58.
[129]Applicant's Exh. 30.

releases to the public from the proposed intensive highway transshipment of spent fuel.

It also appears that the capacity of Oconee 1 and 2 pool will be further increased to 1,312 spaces by the installation of poison racks for which Duke has already contracted, thereby extending FCR storage capacity to 1991 (*Ibid.*). There are additional ways to further increase the storage capacity of the Oconee spent fuel pools, including pin compaction and dry storage.[130] Although these methods were sometimes referred to rather disparagingly by the Staff and and Duke as "emerging technologies,"[131] at other times they were described as promising future developments which could relieve Duke of the necessity to build an ISFSI.[132] We note that the original testimony herein was subsequently amended to indicate that the Maine Yankee Atomic Power Company has now filed an application for an amendment to its operating license (44 FR 61273), to authorize expansion of its onsite storage capacity through a modified pin storage concept.[133]

The evidence shows that the expansion of spent fuel storage capacity at Oconee by the various methods discussed above is both viable and preferable to the proposed alternative of intensive highway transportation by truck of the spent fuel assemblies.

2. Independent Spent Fuel Storage Installation (ISFSI)

Another alternative or option available to Duke to resolve its spent fuel storage problem is the construction of an independent spent fuel storage installation (ISFSI). This method is one of the alternatives expressly described by the Commission as "licensing actions intended to ameliorate a possible shortage of spent fuel storage capacity."[134]

There is no dispute that construction of an ISFSI, either onsite or offsite, is feasible and was considered by Duke as an alternative.[135] Although spent fuel storage facilities that are not part of reprocessing plants do not now exist, there have been proposals by private industry to construct and operate them. In 1974, E.R. Johnson Associates, Inc. and Merrill, Lynch, Pierce, Fenner and Smith, Inc. issued a series of joint proposals to a number electric utility companies, offering to provide such facilities.[136] That proposed ISFSI project was presented at the American Nuclear Society

[130]Applicant's Exh. 3, at 8.
[131]Tr. 1155-60; Staff's Proposed Findings, pp. 23, 26, fn. 89; Applicant's Proposed Findings, p. 33, fn. 25.
[132]Tr. 2806; Staff's Proposed Findings, p. 26; Applicant's Proposed Findings, p. 20.
[133]Staff Exh. 36, at 2; Applicant's Proposed Findings, p. 33, fn. 25.
[134]40 FR at 42802.
[135]Staff Exh. 3, at 52.
[136]*Ibid.*, at 51.

meeting in November 1975. The construction cost was estimated at $9,000 per spent fuel assembly (*Ibid.*).

Stone and Webster had also developed a standard design for an ISFSI which Duke was previously aware of and had evaluated.[137] The cost was $10,000 per assembly, not including the costs of additional supporting systems, equipment and structures (*Ibid.*).

The Staff's estimate for the construction of an ISFSI onsite at Oconee, consisting of 1,500 assemblies, was $37,500,000 or $25,000 per assembly. Duke's corresponding estimates were $51,750,000 or $34,500 per assembly. An offsite ISFSI of the same capacity was estimated by the Staff at $38,250,000 or $27,500 per assembly. Duke's comparable estimate was $52,488,000 or $36,961 per assembly.[138]

3. Comparison of Alternatives

The EIA does not objectively appraise and evaluate the alternatives available to Duke to avoid extensive highway transshipments of radioactive spent fuel. As discussed above, the EIA persists in concluding that despite reracking options, the "most preferred alternative" is the transshipment of spent fuel.[139] This conclusion apparently has not changed even though the stated fears of reracking time delays, impacting on electric power generation at Oconee, have proven to be erroneous.[140] Likewise, the Staff's concerns about reracking costs and occupational exposure appear to have been elimated by Duke's completed installation of stainless steel high density racks and its firm decision and contract for the installation of poison racks.[141]

The principal objections to the ISFSI relied on by Duke[142] and the Staff[143] concern the projected cost and length of time required for construction. However, there were wide variations in cost estimates for 1,500 assemblies, ranging from $15,000,000 (Stone and Webster, Staff's Proposed Findings, at 21 and 27), to $37,500,000 (*Ibid.*, Staff), to $51,750,000 (*Ibid.*, Duke). These cost estimates have also been put at $55-61 million dollars by the Staff (*Ibid.*, at 23) and by Duke at the same figures (Applicant's Proposed Findings, at 31) or at $55,824,000 (*Ibid.* at 50).[144]

[137]Tr. 1119-26; NRDC Exh. 4, 5, 10; Staff Exh. 3, at 52 and 58.
[138]Staff Exh. 13; Staff's Proposed Findings, p. 21.
[139]Staff EXh. 3, at 53, 56, 57.
[140]Section IID1, pages 53-5, *supra;* Applicant's Exh. 30.
[141]Staff Exh. 3, at 53, 56, 59; Applicant's Exh. 30.
[142]Applicant's Proposed Findings, pp. 31, 49-50.
[143]Staff's Exh. 3, at 50-52, 58; Staff's Proposed Findings, pp. 23-27.
[144]There were further variations in cost estimates for 1,500 assemblies and 2,300 assemblies described by Staff witnesses Clayton L. Pittiglio, Jr. (Staff Exh. 27A, pp. 1, 5), and Darrell A.

It appears likely that these various cost figures were bandied about to give an illusion of precision, but that the Staff never gave this matter a "hard look" in depth. Little or no effort was apparently made to explore the Stone and Webster proposals in a meaningful manner. The EIA analysis of the Applicant's construction of an ISFSI was superficial.[145] The Staff also rather curiously stated, "Moreover, the environmental impacts to the air and aquatic and terrestrial environment resulting from construction of an ISFSI are not evaluated in this proceeding but are likely to be significant."[146] In any event, in weighing alternatives the cheapest is not necessarily the best or the safest. The cost of an ISFSI was compared to the costs of transshipment, but no consideration was given to comparing such costs to the many hundreds of millions of dollars that Oconee or other Duke nuclear facilities have cost or will cost.

The impact of the time (45-60 months) required to bring an ISFSI on line has also been the subject of horror stories. The EIA assumed that approximately five years would be required for the approval, construction and completion of an ISFSI. On that basis, it then concluded that "The earliest an ISFSI could be built by the applicant is 1984; well beyond the date when storage shortage at Oconee will force its shutdown."[147] This dire assumption of a shutdown is of course not correct, as reracking can extend Oconee storage capacity to 1991,[148] but nevertheless the Staff's resolute opposition to an ISFSI alternative has remained steadfast.

The evidence in this proceeding was not persuasive in proving, by statistical analyses or engineering studies, that serious spent fuel transportation accidents or malevolent conduct could not occur. For example, the EIA analysis of possible sabotage of spent fuel in transit was rendered at least partially obsolete and invalid by the Commission's subsequent (June 15, 1979) actions instituting regulations requiring safeguard measures to be applied to spent fuel shipments.[149] Subsequent to that institution of regulations, the Commission on June 3, 1980 approved additional amendments to the interim regulations, further specified types of safeguards

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Nash (Staff Exh. 26A and B). For example, Duke's cost estimate of $51,689,000 consisted of structure (5,964,000); equipment ($17,106,000); engineering labor and overhead ($14,384,000); and unspecified contingencies at 25%; plus interest during construction ($14,235,000). Duke has the capability of constructing its own nuclear facilities, and of being its own architect/engineer and constructor (Staff Exh. 27A, pp. 1, 5; Applicant's Exh. 7, Table 4).

[145]Staff Exh. 3, pp. 50-52.

[146]Staff's Proposed Findings, p. 27, para. 37.

[147]Staff Exh. 3, at 52.

[148]Applicant's Exh. 30, *See also* Section D1, Reracking Spent Fuel Pools, pp. 53-55, *supra.*

[149]44 FR 34466 (June 15, 1979). *See also* Staff's Proposed Findings, at 84.

required for spent fuel highway shipments (amendments to 10 CFR Sections 73.1, 73.37, 73.72; Appendix D of 10 CFR Part 73).[150]

The factors to be considered in analyzing the risks involved in spent fuel shipments were thus described by the Commission:

> "The NRC continually reexamines the adequacy of its regulations for the protection of the public health and safety against deliberate acts. Part of this reexamination consists of studies and research projects. One of these studies, conducted by Sandia Laboratories and published in draft form in May 1978 as SAND-77-1927, concluded that serious public health consequences could result in the event of successful sabotage of a spent fuel shipment in a heavily populated area.... NRC has not pursued quantitative risk studies for safeguards because of extreme difficulty in adequately quantifying the various factors contributing to risk. This view was expressed in the Reactor Safety Study (WASH 1400) and sustained by the Lewis panel's peer review of that document. The Lewis Panel Report (NUREG/CR-0400) states: 'The risk from sabotage was not calculated in the Reactor Safety Study. The omission was deliberate, and proper, because it was recognized that the probability of sabotage of a nuclear power plant cannot be estimated with any confidence.' Similarly, estimates of the probability of successful sabotage of spent fuel shipments cannot be made with any confidence."[151]

As to the possible consequences of successful sabotage of spent fuel shipments, the Commission further said:

> "The Commission frequently uses the concept of risk in its deliberations concerning the need for new regulations and did so in this case. The Commission found that the likelihood of successful sabotage is uncertain inasmuch as the existence of a credible adversary organization cannot be ruled out and the response of spent fuel and spent fuel casks to credible explosive sabotage is subject to large uncertainty. With respect to consequences, it appears that the release of a small fraction of the inventory of a spent fuel cask as respirable particles could produce serious consequences in a heavily populated area."[152]

Similarly, in analyzing occupational radiation exposures expected to result from the alternatives being considered (transshipment, reracking, or ISFSI) by the Staff, it was indicated that such calculations were substantially lacking in precision or certainty. In this regard the Staff stated:

> "There would be no basis, therefore, for concluding that any of the three actions is clearly to be preferred from the point of view of radiation risk because of the inexact nature of the estimating process.... Estimates of radiation dose for actions involving handling radioactive materials are very imprecise."[153]

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[150]45 FR 37399 (June 3, 1980). *See also* NUREG-0561, Rev. 1.
[151]45 FR at 37402.
[152]45 FR at 37402-403.
[153]Staff's Proposed Findings, para. 77-78, pp. 48-49.

The risks of truck highway accidents involving some release of radioactive materials likewise cannot be ruled out solely by statistical analyses or engineering studies. It is not enough in weighing alternatives simply to conclude that spent fuel casks "would not breach in most accident situations,"[154] or that the "probability of the accident occurring is remote,"[155] or "the likelihood of a severe accident involving a cask is remote."[156] There have been two reported serious truck accidents in about 3,600 highway shipments of radioactive spent fuel, fortunately neither involving radioactive releases.[157] The accident probabilities suggested by two highway accidents per 3,600 shipments are not insignificant (Section C, fn. 117, p. 47, *supra*). The possibility of highway accidents must also be viewed in the context of Duke's intensive shipment schedule of 300 casks in one year from Oconee to McGuire, to say nothing of the larger Cascade Plan.

One of the disturbing characteristics of accidents is that they often involve an unusual combination of low probability factors to produce a wholly unexpected result, as the Three Mile Island accident proved so dramatically and unhappily. Serious accidents unfortunately cannot be warded off by some statistical magic wand, as the very first or second shipment could be that "remotely probable" event. As a responsible regulatory agency, the NRC must be sensitive to public health and safety as well as environmental factors in weighing alternatives. Even Duke's representative took account of social and political impacts involved in licensing the transportation of radioactive nuclear waste. Mr. Ralph W. Bostian testified that local concerns had been expressed to Duke by cities and counties along the transfer route, and that if "the opposition that we have seen developing subsides, then we would certainly consider transshipment, but if it continues to develop we would certainly have to consider other alternatives."[158] Surely NRC should be no less sensitive in considering alternatives which eliminate highway spent fuel transportation risks.

On balance, the evidence shows that the alternatives of reracking or construction of an ISFSI are preferable to Duke's transshipment proposals, whether involving the Cascade Plan or the one-a-day transportation of 300 casks of spent fuel in one year.

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[154]*Ibid.*, para. 132, at p. 75.
[155]Staff Exh. 3, p. 37.
[156]Staff's Proposed Findings, para 138, p. 78.
[157]*Ibid.*, para. 135, at p. 77. *See also* Staff's Exh. 9, at 5-6.
[158]Tr. 454.

E. ALARA

One of the questions involved in this proceeding concerns the issue of whether the transshipment action would result in radiation exposures that are not as low as is reasonably achievable (ALARA) when compared to the other spent fuel storage options available to Duke. The ALARA principle is set forth in 10 CFR 20.1(c) as follows:

> "In accordance with recommendations of the Federal Radiation Council, approved by the President, persons engaged in activities under licenses issued by the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974 should, in addition to complying with the requirements set forth in this part, make every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as is reasonably achievable. The term 'as low as is reasonably achievable' means as low as is 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."

NRDC raised the ALARA issue by its Contention 4, which stated:

> "The proposed action increases the exposure to radiation of workers and the general public beyond what is ALARA.
>
> a. ALARA can be achieved by on-site expansion of spent fuel pool storage capacity at Oconee, including building another spent fuel pool.
>
> b. The residual health risks which remain even if the present NRC regulations, on exposures to workers are met, are major costs of the proposed action which tip the balance against the proposed action" (Tr. 77-85).

As a threshold matter, we consider the arguments of Duke[159] and the Staff[160] that the ALARA concept does not apply to the alternatives to spent fuel storage, but rather applies only when the appropriate alternative has been selected. All parties cite *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2) and *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), ALAB-455, 7 NRC 41 (1978), as supporting their respective positions. Those cases involved the expansion of spent fuel storage capacity by the removal and disposal of the existing fuel storage racks in the pools and the substitution of new racks. The licensing board on its own initiative examined whether the proposed method of rack disposal (racks cut into

[159]Applicant's Proposed Findings, p. 36-37; Applicant's Response to NRDC's Proposed Findings, pp. 12-13.
[160]Staff's Proposed Findings, pp. 116-19.

pieces and placed in drums) met ALARA standards when compared to an alternative method (racks crated and shipped offsite intact). The Appeal Board held that "whether a particular method of rack disposal meets the ALARA test does not hinge entirely upon the existence or nonexistence of some alternative, feasible method which would occasion a lesser amount of radiation exposure" (7 NRC at 56). A footnote further stated that "It bears emphasis that the ALARA standard comes into play only after it has been determined that the applicant's proposal will comply with all other requirements imposed by Part 20, including the *absolute* limitations on permissible doses, levels and concentrations set forth in 10 CFR 20.101 *et seq." (Ibid.,* fn. 13).

That case does not preclude an ALARA analysis of the viable alternatives here for spent fuel transshipment, namely reracking of Oconee pools or construction of an ISFSI. Rather, ALARA contemplates a comparison with other alternatives to determine whether a proposed method of handling spent fuel storage does indeed maintain radiation exposure to levels "as low as is reasonably achievable."

Applicant reviewed and estimated the doses associated with the proposed action and the alternatives thereto as follows:

Viable Alternatives	Total Dose (person-rem)	Dose Differences (person-rem)
1. Modification of Existing ONS Spent Fuel Pool, Unit 1-2	84	35
2. Installation of Poison Racks, Units 1, 2 and 3	107	58
3. Construction of Separate Fuel Storage Facility at Oconee	49	0
4. Construction of Separate Fuel Storage Facility away from Oconee but not at McGuire	72	23
5. Shipping Storage at McGuire	65	16

(Applicant's Exhibit
15, p. 3)

The Staff also evaluated the alternatives to transshipment and storage at McGuire, and applied the guidelines of Regulatory Guide 8.8 (Revision 3, June 1978) ("Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable"), in its evaluation. The additional options evaluated included reracking the Oconee spent fuel pool with stainless steel racks, reracking the Oconee pools with poison racks, and construction of an ISFSI at the Oconee site. The comparisons of the one-time doses and the doses per year for continued operation and storage of the spent 300 fuel assemblies were as follows: (Staff Exh. 11A, 11C and 20).

ESTIMATED DOSE FROM OPTIONS

Alternative	(Per 300 Fuel Assemblies) One-Time Doses	Doses Per Year Thereafter
Transshipment to McGuire	30 person-rems (handling fuel) 15.6 person-rems (driving) 45.6 person-rems	9.3 person-rems/yr (operating pool)
Re-racking (Oconee pool)	76 person-rems (pool work)	18.6 person-rems/yr (operating pool)
Re-racking Oconee Pool (with poison racks)**	76 person-rems (pool work)	18.6 person-rems/yr (operating pool)
New pool at Oconee	30 person-rems (handling fuel)	9.3 person-rems/yr (operating pool)
New pool at any other site	30 person-rems (handling fuel) 15.6 person-rems (drivers)*	9.3 person-rems/yr (operating pool)

* Would depend upon distance to be travelled.

** Would involve extensive time delays (Staff Exh. 11-A)

The Staff found that the total man-rem doses projected to result from comparison of the alternatives would be the same general dose range over a period of years, and there is therefore no reason to conclude that any of the

actions is clearly to be preferred based on radiation risks. The "inexact nature" of the estimating process produces this result (Staff Exh. 11A, Tr. 2627; Exh. 20). The choices among the alternatives considered must be made on a basis other than radiation doses, since the record shows that the alternatives do not differ much among themselves in this respect,[161] because accurate estimates are very difficult to make.[162]

NRDC's Contention 4.b asserts that there are substantial residual health risks that tip the balance against the proposed action even if the action complies with Commission regulations. Residual health risks from exposure to ionizing radiation are genetic risks and may be expressed in subsequent generations as congenital abnormalties, constitutional and degenerative diseases and other illnesses having some degree of genetic determination. The cancer risk from exposure to ionizing radiation is of concern to NRDC.

The Staff's witnesses testified that the health effects, both somatic and genetic, projected from conservative estimates of dose exposure, either in terms of occupational exposure or in terms of public exposure, would be negligibly small (Staff Exh. 10A, 10B; Tr. 2459, 2627, 3055). Such testimony was based on the assumptions that somatic risks (i.e., the risk of cancer) and a significant portion of the genetic risks of health effects from ionizing radiations, are directly and linearly proportional to radiation dose and dose rate.

Genetic effects for the range of doses involved were based on the 1972 National Academy of Science Report of the Committee on the Biological Effects of Ionizing Radiation (BEIR). The risk of cancer was based on updated BEIR-III data. Projections of health risk were based on a range of doses extending from 80 to 150 man-rems for two options, reracking and transshipment. Those doses are quite small (0.2% to 0.3%) compared to the expected normal operational occupational exposure at Oconee Units 1, 2 and 3 over the assumed thirty-year facility lifetime. The testimony showed that the proposed action would not represent a major genetic health cost because of the small number of genetic effects.

GENETIC EFFECTS COMPARISON FOR TWO OPTIONS

Option	Dose (Man-rem)	Genetic Effects First Generation	Total Genetic Effects at Equilibrium
1	80-150	0.002 - .004	0.02 - 0.03
2	120	0.003	0.02

[161]Staff Exh. 20, at 4-5.
[162]Staff Exh. 11A, at 5; Exh. 20, at 4-5.

Option 1 is reracking at Oconee.

Option 2 is transshipment to McGuire.

Even if the dose estimates are low by a factor of 10, it results in a maximum equilibrium estimate of 0.3 effects.[163]

The cancer effects are projected as:

CANCER CASE COMPARISON FOR TWO OPTIONS

(Single Exposure)

Option	Dose (Man-rem)	Total Incidence	Fatal
1 (Reracking Oconee)	80-150	.04 - .08	.01 - .02
2 (Transshipment to McGuire)	120	.06	.0002[164]

For a single exposure to low-level radiation, the maximum estimate of total cancers, assuming BEIR-III was low by a factor of 10, would be 0.8, and the estimate for fatal cancers would be 0.2. For the reracking case at Oconee and the transshipment to McGuire case, the estimates for total incidence and fatal cancers, and for genetic effects are very low and within the same range (Staff Exh. 10A). Although there is general agreement that a significant proportion of somatic and genetic health risks are directly proportional to the magnitude of the radiation dose, there is controversy over the magnitude of the dose-effect response at low-radiation dose and dose rate. This controversy is based on the results of studies of various exposed populations. These studies report that exposure to low-level radiation may be about an order of magnitude (about 10 times) more effective in producing health effects than the estimates given in the BEIR Report. Applying the factor of 10 to the estimates of genetic effects results in a maximum equilibrium estimate of 0.3 effects. The Staff concludes that, even if the BEIR estimates were low, this action does not represent a major genetic health cost.

Based on the record, the Board finds that there is no basis for NRDC's Contention 4.b since there are virtually no health effects from routine transshipment actions. The somatic effects and genetic effects of uneventful transportation actions are negligible.

[163]Staff Exh. 10A, at 3; Table II as revised.
[164]Staff Exh. 10A, Table IV as revised.

F. Routine Transportation Dose Impacts

The issue involving projected dose impacts resulting from the routine or uneventful transportation of Oconee spent fuel was raised by CESG Contention 2. That contention stated:

> "CESG contends that transportation of spent nuclear fuel from the Oconee Nuclear Station for storage at the McGuire Nuclear Station will create an unacceptable hazard by significantly increasing the radiation doses to persons in the region near the proposed transportation routes between the two facilities. Specifically:
>
> a. There will be an unexceptable incremental burden of radiation dose to persons living in the vicinity of the transportation routes.
>
> b. There will be an unacceptable incremental burden of radiation dose to persons traveling over the transportation routes concurrently with spent fuel shipment.
>
> c. There is likely to be an unacceptable incremental burden of radiation dose to persons in the vicinity due to an accident or delay in transit."

CESG Contention 2 (a)

The Staff testified that the incremental radiation dose from routine transportation to persons living in the vicinity of transportation routes would be small. This radiation dose was calculated with data presented in "Environmental Survey of Transportation of Radioactive Materials to and From Power Plants," WASH 1238. Additional Staff analyses based on "The Transportation of Radioactive Material by Air and Other Modes," NUREG-0170, corroborated the analysis based on WASH 1238. The analysis determined that for 300 shipments passing 42,000 people living near the route, the group dose to the population along the route was 0.1 man-rem, which constitutes 0.0024 percent of the dose received from annual background radiation. This value was not significantly affected by changes in routing due to the application of new safeguards regulations (Staff Exh. 6, 37).

The Staff analyzed the effect of routine transportation upon the maximally dosed individual (called the maximum individual), a person defined as standing 30 meters from the roadway as each of the shipments passed, and determined that such an individual would receive a dose of 0.02 mrem, which is the equivalent of 0.02 percent of the dose received annually from naturally occurring sources. The dose to the maximum individual was affected by changes in routing, as the dose of 0.02 mrem increased to 0.3 mrem due to travel through small towns. This 0.3 mrem dose is equivalent to 0.3 percent of the dose received annually from naturally occurring sources (Staff Exh. 37).

The Staff analyzed the radiation doses to persons present at truck stops at the same time as spent fuel shipments, as CESG Contention 2(a) could be interpreted to include such individuals. A scenario considering a person one meter from the cask for three minutes, a condition not normally expected, was examined. In this instance, the individual would receive a dose of 0.0013 rem, which would be 1.3 percent of the dose received from annual background radiation. This dose is not dependent on routing. The Staff concluded that health effects associated with population doses resulting from routine or uneventful transportation were too small to estimate (Staff Exh. 6, 37).

The Applicant's testimony also stated that doses to the public from routine transportation along the transportation route would be small fractions of the doses received annually from natural background radiation, and that the health effects associated with radiation doses to persons living in the vicinity of the transportation routes would be small (App. Exh. 8, 9, 12, 15; Tr. 1265, 2877, 1824).

CESG witness Riley testified that, in general, distances between the radioactive source and the public or workers would be smaller than those represented in the Applicant's and Staff's testimony, and radioactive exposures would therefore be larger (CESG Exh. 5, 9). Calculations by Staff of dose to persons along the route assumed the maximum exposed individual at 30 m. distance. CESG testified that there are places of business along interstate 84 which are closer and that habitations along secondary roads are closer (Tr. 2393, 2413-14). The shorter distance was not numerically specified. Even if the maximum individual were postulated to be only three meters from the roadway as each of the 300 shipments passed, the dose to that person would increase by a factor of 100 to 2 mrem. This dose is still only two percent of the dose received annually from naturally occurring sources (Staff Exh. 6, App. Exh. 12).

New Commission regulations became effective dealing with the safeguarding of spent fuel shipments after the filing of the Staff's EIA and its Exhibits 6 and 9 relative to CESG Contention 2. The new safeguards regulations (45 FR 37399), specifically 10 CFR Sections 73.1, 73.37 and 73.72, went into effect on July 3, 1980. Additional testimony was presented discussing the effect of changes in potential routing. The Staff determined that the doses from routine transportation remained similar to those originally developed, based upon trade-offs in speed of transport, distance traveled, type of roadway and population density along the routes (Staff Exh. 37).

Total estimated doses to the public from routine transport did increase from 0.08 man-rem to as much as 0.3 man-rem, depending on the change in routes. These increases in estimates were mostly due to an increase in dose

to persons traveling the same direction as the spent fuel shipments. The largest of these doses, about 0.3 man-rem, represents 0.04 percent of annual background population dose. Routing changes also affected the dose to the maximum individual along the route due to increases in travel through small towns. The dose to this hypothetical individual from 300 shipments would be 0.3 mrem instead of the 0.02 mrem presented in the EIA. The 0.3 mrem dose is equivalent to 0.3 percent of the dose received annually from naturally occurring sources. This dose is within the range of normal fluctuations in background radiation.[165]

Based on the testimony relative to the effect of changed routing on the issues raised by CESG Contention 2, the Board finds that such routing changes have only a small effect on route-related impacts. The Board finds that the incremental radiation doses from routine transportation both to the population at large and to a postulated maximum individual are small when compared to the dose levels of background radiation which are encountered annually by the population at large. The Board finds that health effects associated with the small increased doses to persons living in the vicinity of the transportation routes are within acceptable limits, if transshipment is necessary and if there are no preferable alternatives.

CESG Contention 2(b)

The Staff has examined the radiation dose to persons traveling over the transportation routes concurrently with the spent fuel shipments. The doses were calculated based on NUREG-0170, Appendix D. For travel in the direction opposite to that of the shipments, the cumulative population dose, assuming 300 shipments in one year, was calculated to be about 0.04 man-rem. The average dose to an individual per shipment would be 0.00000003 rem, and the dose to a hypothetical individual who passed each of the 300 shipments would be about 0.00001 rem. This latter dose represents about 0.01 percent of the background dose received by such an individual during one year. These impacts are not affected by routing changes (Staff Exh. 6, 37).

The cumulative dose to persons traveling in the same direction and at the same speed as the shipment was calculated to be about 0.8 man-rem. Changes in routing increase this value by a factor ranging from 1.2 to 4, depending on the route analyzed. The increase is due primarily to the slower, closer-following traffic assumed on the alternative routes. The largest of these doses, about 0.3 man-rem, represents 0.04 percent of the annual background population dose. The Staff has examined the case of a

[165]Staff Exh. 37. *See also* Applicant's Exh. 24, 25, 32.

car following the spent fuel shipment at a distance of approximately 100 feet for a period of four hours. The individual dose in this case would be 0.00036 rem per occupant of the vehicle, or 0.36 percent of the dose received from annual background radiation. These values would not be changed by alternative routing.

CESG's witness disagreed with the Staff's assumption for a tail-gater traveling at a separation distance of 100 feet from the spent fuel cask, and testified that the following distance should more nearly approximate 10 feet, producing doses about 100 times those found by the Staff in its EIA (CESG Exh. 5). This was contradicted by CESG's oral testimony that the "following distance" distribution would peak at about 30 to 40 feet (Tr. 2415). This would cause doses a factor of 10 higher than those calculated by the Staff; 3.6 mrem instead of 0.36 mrem to each occupant or approximately 0.36 percent of the annual dose received from naturally occurring sources. Even if this dose were increased by a factor of 100 in CESG's worst case, each occupant would receive 36 mrem if he were to travel 10 feet directly behind the truck carrying the spent fuel cask for a 4-hour period. This dose amounts to approximately 36 percent of the dose received annually from naturally occurring sources.

Forty students in a school bus stopped in a traffic jam alongside a shipment of spent fuel for three hours would receive a total exposure of 3 man-rem (CESG Exh. 5). Cross-examination revealed these calculations to be unrealistic in several respects (Tr. 2430-42).

Based on this record, the Board finds that the radiation doses to persons traveling over the transportation routes concurrently with spent fuel shipments are small when compared with the annual background radiation doses which are received by the population at large. The health effects associated with these doses are correspondingly small and are considered to be within acceptable limits, provided that transshipment is necessary and that there are no preferable alternatives.

CESG Contention 2(c)

The Staff analyzed the increase in radiation doses to persons in the vicinity of a spent fuel shipment during a delay in transit. CESG alleged that such doses would be unacceptably large. The Staff examined the case where a traffic jam occurs, extending for a period of three hours, in an area with a population of 10,000 persons per square mile, uniformly distributed. Population dose in this case would be less than 0.2 man-rem and the maximum exposed individual three meters from the cask would receive a dose of 15 mrem. These doses were calculated applying a regulatory limit of 10 mrem per hour at two meters from the vehicle. Operating experience has indicated that dose rates would be significantly lower. The population dose

constitutes 0.02 percent of the dose received from annual background radiation (Staff Exh. 6).

The designs of spent fuel casks are regulated by the Department of Transportation and by the Nuclear Regulatory Commission. Spent fuel shipping casks are massive, durable, heavy casks. Such casks are generally cylindrical in shape and about 20 feet long. The basic components include a steel inner vessel which contains the fuel elements, which is surounded by several inches of shielding encased in a steel jacket. Several inches of hydrogeneous material, such as water, surround the steel inner jacket and a steel outer jacket completes the package. A cask may also be equipped with sacrificial impact limiters to absorb forces involved in impact accidents (Staff Exh. 9).

The Staff testified that the casks are designed to withstand, without release of radioactive material in excess of the regulatory limits specified in 10 CFR Part 71.36(a) (2), a severe accident damage test sequence simulating the effects of severe impact, puncture, fire and immersion in water as specified in Appendix B of 10 CFR Part 71. The test sequence includes:

(1) a free fall from a height of 30 feet onto an essentially unyielding horizontal surface, striking the surface in a position for which maximum damage is expected;

(2) a free drop of 40 inches striking (in a position which is expected to cause maximum damage) the top end of a vertical, cylindrical steel bar six inches in diameter and at least eight inches long, mounted on an essentially unyielding horizontal surface;

(3) a thermal test in which the cask is exposed to a heat input equivalent to that of an oil fire (1,475 degrees F. for 30 minutes); and

(4) immersion in water to the extent that all portions of the cask are under at least three feet of water for a period of not less than eight hours. These test conditions provide reasonable assurance that the cask will withstand the most severe transportation accidents without the release of significant radioactivity.

CESG testified that the spent fuel shipping casks that were tested at the Sandia Laboratories were not the same as the casks to be used in the Oconee to McGuire transfer. The design and dimensions of the Sandia-tested casks were different from the NFS-4 (Sandia 77-0270; 77-1462c; Applicant's Exh. 21). The NFS-4 casks have not been subject to any physical tests, including those of 10 CFR Section 70 Appendix A. It was determined analytically that the cask design was adequate to pass the test and meet Certificate No. 6698 requirements. The capacity of the NFS-4 cask to meet these requirements is a matter of engineering judgment, however reasonable (Tr. 1299).

The Board finds there is no real assurance that a severe spent fuel transport accident cannot occur. The NFS-4 shipping casks to be used have not been tested for severe accident conditions. Consequences of an accident could be significant. Even if it is a "safe" accident, i.e., the radioactive exposure to workers and the public falls within regulatory limits, it could as shown by the TMI experience become a widely publicized media event with serious social, political and economic consequences for the public as well as the entire industry.

G. Cask Drop Accident

CESG was permitted to amend its Contention 2 to encompass cask drop accidents. The amendment to Contention 2 reads as follows:

> "With respect to case three of the cask drop analysis of Applicant's FSAR 9.1.2.3.2, submitted involving a postulated cask drop accident at the spent fuel pool, the Applicant's analysis and Staff's review are inadequate. Case three involves tipping or dropping and tipping the cask, located above the floor or in contact with the floor level of the pit wall opposite the fuel pool side" (Tr. 4181).

An overhead crane brings the shipping cask to and lowers it into a special water-filled pit near one end of the fuel storage building. Here the fuel assemblies are placed into and taken out of the shipping cask under water used as shielding. It is during this cask handling operation that the question arises of possible inadvertent cask drop into the fuel storage pool. Case three postulates that the cask is dropped so that it catches the far edge of the cask pit and then falls toward the spent fuel pool. Applicant testified that in a case three tipping incident the spent fuel cask would not fall into the spent fuel pool. Administrative controls to be implemented by the Applicant are designed to make it highly unlikely that the cask would ever be in a position to tip into the storage pool (Applicant's Exh. 27, 28; Tr. 4332-33, 4339-41, 4347).

The Staff has analyzed the cask drop accident for both NFS-4 and NLI-1/2 casks at the McGuire spent fuel pool. The Staff testified it did not have sufficient detail regarding Applicant's calculations to positively confirm the energy-absorbing qualities of the cask and concrete wall to prevent the cask from pivoting about the dividing wall and tipping into the spent fuel pool. The Staff, therefore, accepted an administrative control restricting the traveling path of the cask to ensure that the cask would not fall into the spent fuel pool. The admininstrative control limits the path of travel such that any drop of the cask would not result in its falling into the spent fuel pit. The Staff proposed a license condition incorporating the administrative control to preclude the possibility of a spent fuel cask entering the spent

fuel pool. The license condition proposed by the Staff would read as follows:

> "Handling spent fuel at the McGuire Nuclear Facility is limited to the NFS-4 and NLI-1/2 spent fuel casks and crane travel is to be restricted by administrative controls to the path presented in Exhibit 1 when spent fuel casks are being handled" (Staff Exh. 33).

CESG testimony challenged the conclusions reached by the Applicant that, even if the scenario in case three were to happen, i.e., that the crane cable would fail so that the cask is dropped and catches the far edge of the cask pit and then falls forward toward the spent fuel pool, there would be sufficient energy absorption to prevent the cask from falling into the spent pool. In the initial position least favoring gyration into the pool, about 60% of the potential energy would have to be absorbed to prevent the drop. CESG, after confirming the drop with crude models, built a more dimensionally accurate model, with the exception of a collapsible neutron shield, and found that the cask gyrated into the pool. A demonstration from the least favorable initial position was witnessed by Staff and Applicant. The fall across the fuel pool wall was recorded on videotape. This demonstration confirmed CESG testimony that the situation is sufficiently complex that a model could provide guidance. Cross-examination revealed that there were sufficient differences between the models and the actual cask and walls as to call the results of the test into question (CESG Exh. 13, 15; Tr. 4462-95, 4877-92).

The parties were asked by the Board to provide numerical analyses of the consequences of an assumed incident involving a cask dropped into the McGuire spent fuel pool with respect to (1) the effects of the resulting radioactive releases on the general public and plant operating personnel, and (2) the potential for achieving criticality in the pool. Applicant and Staff provided testimony in this regard (App. Exh. 33 and Staff Exh. 40, 41, 42, 43 and 44).

Applicant testified that there would be local bending of the fuel storage racks when the 25-ton cask dropped into the pool. The Oconee fuel protrudes above the top of the fuel racks and would be damaged by the dropping of the cask. It was determined that approximately sixty fuel assemblies would be damaged resulting in some radioactive releases to the building and into the atmosphere. Applicant concluded that there would be no offsite radiation exposure in excess of the guidelines of 10 CFR 100, and would be well within the guidelines of that document (App. Exh. 33).

The Staff evaluation showed the possibility of 76 spent fuel assemblies being damaged by the cask drop. The radiological releases would be within 10 CFR Part 100 limits. In addition, the Staff performed analyses for the

McGuire spent fuel pool considering both Oconee and McGuire spent fuel assemblies. The Staff examined the potential consequences of damaging 500 Oconee spent fuel assemblies aged for 270 days, as well as the consequences of damaging McGuire spent fuel aged 40 days or one year. In all cases, the potential consequences were fractions of the exposure guidelines of 10 CFR Part 100.

The Staff examined the occupational doses to plant employees in the event of a cask drop accident. Regardless of whether one is postulating the rupture of Oconee or McGuire spent fuel assemblies, the doses to workers would be within the exposure guidelines of 10 CFR Part 100 for accidents (i.e., 25 rem whole body and 300 rem thyroid). For McGuire fuel, which is the worst case, exposure to workers in the vicinity of the spent fuel pool would be less than 100 mrem whole body and less than 300 rem thyroid. The whole body doses would also be a small fraction of the quarterly limit (i.e., 3 rem) for occupational exposure to workers in 10 CFR Part 20 (Staff Exh. 43, 44).

With regard to criticality, Staff witnesses testified that such a hypothetical cask drop incident on Oconee or McGuire spent fuel would result in a k effective of approximately 0.92, well below the value of 1.0 necessary to achieve criticality. Applicant's testimony with regard to Oconee spent fuel gave a similar result, a k effective of approximately 0.95. With respect to McGuire new fuel, Staff testified that without taking into account realistic conditions, the k effective associated with a cask drop of such fuel could be as high as 1.06. However, taking into account the actual situation at the McGuire spent fuel pool, including separation between fuel assemblies, actual enrichment percent of fresh fuel, angle iron separating assemblies, and burnable poisons and considering a 2% factor for uncertainties, the calculations would result in a k effective of 0.98. Staff testified that a reactor completely shut down has a k effective of approximately 0.94-0.95. A k effective of 0.98 is considered a safe value in that each succeeding generation of neutrons would result in a smaller and smaller value of k effective. The Staff testified that in the event of such an incident, the fuel pins would probably be damaged and the lattice structure of the assemblies would be disrupted, resulting in a large decrease in k effective. The Staff concluded that even if a cask fell into the McGuire spent fuel pool impacting McGuire fresh fuel, it is highly unlikely that criticality would be achieved (Staff Exh. 40; App. Exh. 33; Tr. 4943-47, 4978-88).

The criticality evaluations depend on the concentration of boron in the spent fuel pool. It was assumed to be 2,000 parts per million (ppm) in their calculations. A decrease by 100 ppm would result in an approximate increase in k effective of 1%. Hypothetically then, criticality could be achieved if there was a significant reduction in the boron concentration at

the same time that the cask fell into the McGuire spent fuel pool, compacting spent fuel contained therein. Applicant's witness testified that the boron concentration in the spent fuel pool is governed by station limits set at 2,000 ppm plus or minus 5 ppm. Surveillance requirements mandate that such concentrations be checked twice a week. Applicant's witness testified that, during the operation of the Oconee Units, the boron concentration in the spent fuel pools has never been out of specification. The McGuire spent fuel pool is essentially the same as the Oconee spent fuel pool, and thus similar results should be expected. Applicant's witness also testified that the only method of lowering the boron concentration would be to dilute the spent fuel pool water with unborated water. However, level alarms on the pool would alert the operator in the event of such an occurrence. Applicant concluded that a decrease in the concentration of boron in the spent fuel pool was highly unlikely. Staff testimony was consistent with this conclusion (Tr. 4973, 4985, 5075-92).

The Board finds that if a spent fuel shipping cask were dropped into the storage pool, at the very least, it would result in a release of radioactivity into the building and the atmosphere. The evaluations show that resulting worker doses and general population doses are expected to be below regulatory criteria. Nevertheless, such an incident could become a matter of great concern. As to a criticality accident, it would be a close call in the case of dropping the cask on new fuel in storage. It could create a large radioactive mess in an uncontained building. Avoidance of criticality would depend mainly on having the boron level in the pool water (as a neutron absorber or "poison") at or very near the specified level of 2,000 parts per million. A criticality event in an open building could be very serious.

The Board finds that the most effective remedy to avoid these undesirable circumstances would be not to transship the spent fuel. If it must be done in spite of our adverse holding herein, emphasis should be placed on using a physical barrier to positively prevent casks from dropping into the fuel pool.

H. Other Contentions

Most of the issues raised by the admitted contentions have been considered above, either directly or by necessary implication. However, the following contentions are specifically addressed here for the sake of completeness of review:

NRDC Contention 3

"The following alternatives to the proposed action have not been adequately considered:

a. The alternative of using Oconee as a last-on, first-off, base loaded plant to reduce spent fuel discharge requirements is not considered.

b. The alleged economic cost of increased purchases of power if Oconee is shut down is speculative because there is insufficient information to justify the conclusion."

Regarding Contention 3(a), Applicant testified that the Oconee units are not designed for cyclic operation, and are constrained by operating limits. The transient thermal conditions shorten the life of the turbine rotors. The build-up of Xenon in the reactor core under these operating conditions has been well documented. The high Xenon level delays the return to full load. From an operating standpoint, the units could not follow the system load, should such an attempt be made. Operation in a cyclical manner would be very costly in terms of system production expense. Operating the Oconee units in base yields the lowest total system production cost. Operation in any other mode requires more energy to be produced from units burning coal, at a considerably higher fuel cost.[166]

With regard to Contention 3(b), cost of purchased power, Applicant stated that the shutdown of Oconee would become expensive in terms of replacement power in two ways. The energy not produced by Oconee would have to be replaced so far as possible by energy produced from other generating units on the Duke system, which burn either coal or oil. That energy which could not be provided from within the Applicant's system would have to be purchased from sources external to the system.

The cost to produce the replacement energy can be determined with a considerable degree of certainty. The average variable operating, maintenance and fuel costs for Applicant's base-load units have been calculated to be the following in 1979:[167]

	Cost in $/Mwh	
Unit(s)	Variable O & M	1979 Average Fuel
Belews Ck. 1 & 2	.192	12.80
Marshall 1 & 2	.366	16.55
Marshall 3 & 4	.431	16.28
Allen 5	1.082	13.66
Oconee 1, 2 & 3	.525	4.44

[166]Applicant's Exh. 13 at 3-4.
[167]*Ibid.*

The cost to purchase energy is speculative in the sense that Applicant has no contract at present by which such energy could be purchased. However, based on experience with short term power purchases which have been made in the past, a reasonable estimate of the cost of purchased power can be made. The probable cost of firm capacity would be between $3.25 and $3.75 per kW-month, plus the cost of energy which would be no less that 20 mills per kWh. Based on an average value of $3.50 per kW-month, the cost of a one-year contract to replace the Oconee capacity would be $108,360,000. Assuming a minimum energy cost equal to that of the Applicant's fossil-fuel units, the cost of purchased energy would be $257,514,000. The total cost of purchased power to replace Oconee for one year would be $365,874,000. There is no assurance that firm power could be contracted for at any price when needed (Applicant Exh. 13).[168]

Based on the evidence regarding NRDC Contention 3a, the Board finds that the Oconee units are not designed for cyclic operation and the alternative of using Oconee as a last-on, first-off plant is not acceptable.

NRDC Contention 5

> "Applicant overstates the need for action at this time by using the one-core discharge capacity reserve standard as if it were a requirement where in fact it is not a requirement of NRC regulation. Either Applicant should be bound to comply with the one-core discharge capacity standard or it should have to demonstrate on a cost/benefit basis that holding that capability is more valuable than the costs of shipment off-site of one core of spent fuel" (Tr. 85-127).

Applicant testified that during a three-year period beginning in 1974 all Oconee units made at least one full core discharge. In each of four defuelings during that period of time, full core storage space was available and no added cost was incurred for replacement power because of the lack of Full Core Reserve (FCR). In each of these four defuelings, there would not have been a hazard to the public health and safety had the FCR not been available. Had the FCR not been available, the fuel would have remained in the core with the unit out of service until the FCR was restored in the pool or sufficient storage space secured elsewhere.

As a general rule, an additional 8,000 tons of coal will be burned each day an Oconee unit is idle if there is sufficient coal-fired capacity in reserve. If not and if purchase power is unavailable, it is then necessary to operate oil-fired combustion turbines. Applicant's twenty-four combustion turbines consume 930,000 gallons of No. 2 fuel oil per day when operated at full

[168] *Ibid.*

load. Applicant testified that the minimum cost of not operating an Oconee unit is $165,000 per day (Applicant Exh. 3, 13; Tr. 1677-78).

Applicant testified that it was preferable to maintain a FCR discharge capacity for each unit or for each of the Oconee pools. The current plan is to maintain at least one FCR discharge at each site (Tr. 753, 756, 761, 774, 1036).

The Staff testified that the Commission does not require a full-core reserve capacity at a reactor site. It recognizes the benefits of having storage capability such as a full-core reserve, and would encourage the licensee to have it. The NRC previously considered and rejected the addition of a regulation requiring a FCR. None of the postulated situations presented any compelling safety basis for requiring maintenance of a full-core reserve, but lack of such capability could be costly in terms of extended outage time. The benefits from prudent design, in availability of the facility and reduction of man-rem exposures for inspections and repairs, are self evident and the licensing staff points out these benefits to applicants and licensees, but has not established a basis for imposing a requirement to maintain full core reserve fuel storage capability (Tr. 2676-77; Staff Exh. 18A).

The Commission neither requires that utilities maintain a FCR capability, nor prohibits utilities from using a FCR capability to operate their reactors. It is not within the jurisdiction of the Board to find for or against the requirement of FCR capability at the Oconee plant. It would not be the basis for selecting any of the alternatives to spent fuel storage expansion.

III. CONCLUSIONS OF LAW

The Board makes the following Conclusions of Law, based upon the entire record and all the evidence in this proceeding, including our consideration and evaluation of the Staff's Safety Evaluation Report, Environmental Impact Appraisal, and Negative Declaration, and the application for license amendment submitted by Duke on March 9, 1978, the written and oral testimony of all of the witnesses, the answers elicited from those witnesses by questions from the Board and cross-examination by the parties, the exhibits admitted into evidence, the Rules of Practice of the Commission, the Atomic Energy Act of 1954 as amended, the National Environmental Policy Act as amended, and relevant NRC decisions and case law.

1. There is not a reasonable assurance that the activities authorized or encompassed by the license amendment can be conducted without endangering the health and safety of the public.
2. The issuance of the license amendment could be inimical to the health and safety of the public.

3. The issuance of the license amendment and activity thereunder would significantly affect the quality of the human environment, and therefore require the preparation of an environmental impact statement, consideration of alternatives pursuant to Sections 102(2)(C)(iii) and 102(2)(E) and preparation of a cost-benefit balance under the National Environmental Policy Act of 1969 as amended (42 USC 4332), and Part 51 of the Commission's Regulations (10 CFR, Part 51).
4. The Staff's Environmental Impact Appraisal and Negative Declaration are improperly segmented and unduly limited in scope, inadequate in the consideration of reasonably predictable environmental impacts, and fail to properly evaluate and give weight to preferable alternatives, as required by NEPA and the Commission's Regulations.
5. The appropriate course of action from an environmental and safety viewpoint is the denial of the requested license amendment.

IV. ORDER

It is ORDERED, in accordance with the Atomic Energy Act as amended, the National Environmental Policy Act as amended, and the Regulations of the Nuclear Regulatory Commission, and based on the findings of fact and conclusions of law set forth herein, that the requested license amendment be and the same is hereby DENIED.

In accordance with 10 CFR 2.760, 2.762, 2.764, 2.785 and 2.786, this Initial Decision shall constitute the final action of the Commission forty-five (45) days after the issuance thereof, subject to any review pursuant to the above-cited Rules of Practice. Exceptions to this Initial Decision may be filed by any party within ten (10) days after service of this Initial Decision. A brief in support of the exceptions shall be filed within thirty

(30) days thereafter (forty (40) days in the case of the NRC Staff). Within thirty (30) days of the filing and service of the brief of the appellant (forty (40) days in the case of the NRC 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. Cadet H. Hand, Jr., Member

Dr. Emmeth A. Luebke, Member

Marshall E. Miller, Chairman

Dated at Bethesda, Maryland
this 31st day of October 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-327**
(10 CFR 2.206)

TENNESSEE VALLEY AUTHORITY
(Sequoyah Nuclear Plant, Unit 1)

October 8, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 which requested revocation of the low-power testing license for the Sequoyah Unit 1 plant and other appropriate action on the basis of concerns related to the integrity of the facility's containment.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated May 29, 1980, "The Nuclear Regulatory Commission" (TNRC, a five-member musical group) requested that the Nuclear Regulatory Commission (NRC) revoke the license issued to conduct the low power test program at the Sequoyah facility in order to protect the public health and safety. The petition also requested such other action as may be proper. This request has been considered under the provisions of 10 CFR 2.206 of the Commission's regulations. Notice of receipt of the petition was published in the *Federal Register* on July 3, 1980 (45 FR 45429).

TNRC's concern with respect to low power operation was based upon the potential failure of the ice-condenser pressure suppression containment system employed at the Sequoyah facility. Containment integrity is not a safety concern during the conduct of low power testing. The issue of containment integrity during low power testing was examined by the NRC staff. The staff considered whether a loss-of-coolant accident from low power operations would likely lead to significant metal-water reaction (and hydrogen generation) even under severely degraded ECCS conditions. It

was concluded that there is time available to take corrective action to cool the core before there is any substantial hydrogen generation.[1] Also, the potential for the release of radioactivity, should the containment fail, is virtually non-existent since the power levels during low power testing do not exceed five percent of full power and the one-week test program would produce insignificant amounts of radioactivity. This program has been completed at the Sequoyah facility without endangering the public health and safety.

TNRC also expressed a concern in its petition that the Sequoyah containment building could provide inadequate protection in the event of a TMI-2 type incident. A TMI-2 type incident could produce large amounts of hydrogen in the Sequoyah containment. Should a combustion pressure spike of the magnitude experience at TMI-2 occur, the Sequoyah containment pressure rating could be exceeded resulting in a loss of containment. TNRC noted in its petition that, in light of operating experience obtained at TMI-2, a multiple-failure accident sequence with significant core damage, hydrogen liberation and combustion, and major metal-water reactions, must be regarded as a plausible occurrence.

This concern was intensively studied by the NRC staff, the Advisory Committee on Reactor Safeguards (ACRS) and the Commission prior to the issuance of the Sequoyah full power license which occurred on September 17, 1980. Specifically, the Commission had before it:

1. SECY 80-107, Proposed Interim Hydrogen Control Requirements for Small Containments, dated February 22, 1980.

2. SECY 80-107A, Additional Information Re: Proposed Interim Hydrogen Control Requirements, dated April 22, 1980.

3. SECY 80-107B, Additional Information Re: Proposed Interim Control Requirements, dated June 20, 1980.

4. Supplement No. 1 to Safety Evaluation Report Related to Operation of Sequoyah Nuclear Plant Units 1 and 2 (Page 11.B-1), dated February 1980. (NUREG-0011)

5. Supplement No. 2 to Safety Evaluation Report Related to Operation of Sequoyah Nuclear Plant Units 1 and 2 (Page 22.2-27), dated August 1980. (NUREG-0011)

[1]Supplement No. 1 to Safety Evaluation Report related to operation of Sequoyah Nuclear Plant, Page 11.B-1

6. Supplement No. 3 to Safety Evaluation Report Related to Operation of Sequoyah Nuclear Plant Units 1 and 2, dated September 1980. (NUREG-0011)

7. ACRS letter on Sequoyah Nuclear Plant, dated September 8, 1980.

Copies of these documents are attached.

These documents and reports embrace the concerns raised by TNRC in its petition. The conclusion reached by both the NRC staff and the ACRS was that full power licensing of Sequoyah facility need not await completion of ongoing work related to hydrogen control measures for the Sequoyah-type of containment.[2]

After due consideration of this issue, the Commission approved on September 17, 1980 the issuance by the Director of the Office of Nuclear Reactor Regulation of a full-power facility operating license for Sequoyah Nuclear Plant, Unit 1, subject, however, to the following conditions relative to hydrogen control measures:

(a) By January 31, 1981, TVA shall by testing and analysis show to the satisfaction of the NRC staff that an interim hydrogen control system will provide with reasonable assurance protection against breach of containment in the event that a substantial quantity of hydrogen is generated.

(b) For operation of the facility beyond January 31, 1982, the Commission must confirm that an adequate hydrogen control system for the plant is installed and will perform its intended function in a manner that provides adequate safety margins.

(c) During the interim period of operation, TVA shall continue a research program on hydrogen control measures and the effects of hydrogen burns on safety functions and shall submit to the NRC quarterly reports on that research program.

In my judgment, the analyses performed by the NRC staff and accepted by the Commission, as described in the documents referenced above, in conjunction with the license conditions imposed on the Sequoyah facility, adequately address the concerns raised in your petition and, on these bases, I deny your petition.

A copy of this Decision and its attachments 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 Sequoyah

[2]Supplement 3 to Safety Evaluation Report related to operation of Sequoyah Nuclear Plant (Page 22.2-1) and ACRS letter of September 8, 1980

facility, located at the Chattanooga Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

A copy of this Decision will also be filed with the Secretary for 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 twenty (20) days after the date of issuance, unless the Commission, on its own motion, institutes a review of this Decision within that time.

Dated at Bethesda, Maryland
this 8th day of October, 1980

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. STN-50-484**

NORTHERN STATES POWER COMPANY, *et al.*
(Tyrone Energy Park, Unit 1)

November 3, 1980

The Commission denies the request of an intervention petitioner (Dakota Commissions) for (1) a hearing on an order issued by the Director of Nuclear Reactor Regulation to the licensee to show cause why the construction permit for the Tyrone facility should not be revoked; and (2) a twelve-month deferral of Commission action on revocation of the permit.

ORDER

On June 16, 1980, the Director of the Office of Nuclear Reactor Regulation issued to NSP an Order to Show Cause why the construction permit for the Tyrone Energy Park should not be revoked. (45 FR 42093, June 23, 1980). In this Order the Director stated that the licensee had informed NRC of its decision to cancel the Tyrone project and had requested NRC to terminate all proceedings in the Tyrone docket. The Director had subsequently received a petition from the Badger Safe Energy Alliance which requested, pursuant to 10 CFR 2.206, a proceeding to revoke the Tyrone permit on the basis of the announced cancellation. The Order provided that if a hearing were requested the issue would be "Whether, on the basis of the Licensee's announced decision to cancel construction of the Tyrone Energy Park, Unit 1 facility, this Order should be sustained."

Dakota Commissions, in a filing dated July 11, 1980, requested leave to intervene out of time, to file comments, and to request a hearing, and moved for a 12-month deferral of Commission action on the revocation of the permit. The basis for these requests was asserted to be that some portion of the substantial costs of the cancellation of the project, estimated to

exceed $100 million, would be passed on by NSP to Dakota ratepayers, a result which might be avoided if NSP successfully pursued its application for a Certificate of Need in Wisconsin, the "only major regulatory approval needed prior to construction of the Tyrone Unit." (Petition at 4). Revocation, the Dakota Commissions argued, would foreclose this possibility by deterring NSP from continuing with the project even if a change in the Wisconsin regulatory climate should occur. Dakota Commissions requested a hearing only if the Commission were unable to grant the deferral request on the record then before it. (Petition at 5). The suggested basis for Commission action was, in the view of Dakota Commissions, "the Commission's exclusive authority over construction operation (sic) and licensing of nuclear plants, and the Commission's interest in promotion and development of atomic energy nationwide..." (Petition at 6).

NSP opposed the Commissions' request in a filing dated July 22, 1980. In regard to the cancellation itself, the NSP Answer stated that NSP had cancelled, or was in the process of cancelling, all Tyrone-related contracts, and that NSP had "no further intention ever to construct Tyrone Energy Park under such Construction Permit." (NSP Answer at 4). NSP also questioned whether the Dakota Commissions had standing to request a hearing, citing to NRC cases holding that an interest in electric rates does not fall within the zone of interests protected by the Atomic Energy Act.

Intervenor Northern Thunder, in comments filed July 23, 1980, argued on various grounds that the requests of the Dakota Commissions should be denied, and urged that the NRC proceed with revocation.

The Answer of the NRC staff, filed July 30, 1980, focused on the standing question. In the staff's view, the Dakota Commissions did not have the requisite interest in the proceeding to support a claim of standing, nor had the Commissions satisfied the "injury in fact" aspect of standing. The staff opposed the granting of a hearing as a matter of discretion, and set forth reasons why, in its view, the revocation should not be deferred, *inter alia,* that no factual basis existed for the possibility that NSP would actually pursue the project further. (Staff Answer at 8).

On August 18, 1980, the Dakota Commissions submitted a second filing which contested the standing issue raised by NSP and the staff, and argued that the NRC was required to take into account the economic implications of its actions, in this case the effect of the revocation on power supply and cost to electric consumers in the affected region. This filing concluded by clarifying that the Commissions sought a hearing only if needed to examine the merits of the deferral proposal.

For reasons explained below, the Commission declines to defer revocation of the Tyrone permit and denied Dakota Commissions' request for hearing.

Separate opinions by Chairman Ahearne and Commissioner Hendrie, and Commissioners Gilinsky and Bradford are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
the 3rd day of November 1980

VIEWS OF CHAIRMAN AHEARNE AND COMMISSIONER HENDRIE

I. Standing

The Commission's previous decisions establish that judicial concepts of standing will be applied to determine intervention and hearing rights. *Public Service Company of Indiana,* (Marble Hill Nuclear Generating Station, Units 1 and 2) CLI-80-10, 11 NRC 438, 439 (1980). To have standing a petitioner must show injury attributable to the action proposed, and the interest alleged by the petitioner must fall within the zone of interests protected by NEPA and the Atomic Energy Act. *Portland General Electric Company,* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 613 (1976). We find that in this case Dakota Commissions fail to meet either of these tests.

The Commission has traditionally looked to the decisions of the Supreme Court of the United States for guidance in applying judicial standing doctrines. We find one of those decisions especially relevant to application of the "injury in fact" test in this matter. In *Simon* v. *Eastern Kentucky Welfare Rights Organization,* 426 U.S. 26 (1976), the Court phrased this test in the following terms:

> In sum, when a plaintiff's standing is brought into issue, the relevant inquiry is whether, assuming justiciability of the claim, the plaintiff has shown an injury to himself that is likely to be redressed by a favorable decision. Absent such a showing, exercise of its power by a federal court would be gratuitous and thus inconsistent with the Art III limitation. (426 U.S. at 38).

In the case now before the Commission, the Dakota Commissions allege that economic injury to their ratepayers will result from the termination of the Tyrone Energy Park. We take this as given. This injury derives, however, not from the proposed revocation of the license but from the termination of the project. Deferral of the revocation would not redress the harm alleged.

Even if deferral of the revocation could in some way encourage revival of the project, the NRC cannot base its actions upon such a promotional rationale. We need not belabor the point that the NRC is a licensing and regulatory agency, entrusted with the public health and safety and the protection of the environment. Whether or not to pursue a particular nuclear power project is a decision left to the licensees, and to other government agencies having a proper interest in power supply and electric rates. The NRC cannot order that a plant be built. Thus, it cannot fashion relief which would in any way redress the harm to Dakota ratepayers

caused by the cancellation of the Tyrone project. The reasoning of the Supreme Court in *Welfare Rights* persuades us that the Dakota Commissions lack standing in this case because any permissible exercise of our licensing authority would indeed be "gratuitous."

Dakota Commissions also rely upon 10 CFR 2.715(c), which permits "interested State[s]" to participate in licensing hearings without assuming full-party status. We find this position inapplicable in the circumstances of this case. Section 2.715(c) grants states and state agencies special status in NRC proceedings. However, a request under this section does not itself trigger a hearing.

II. Discretionary Hearing

We would decline to order a hearing on the deferral question as a matter of discretion. The Order to Show Cause makes clear that the Director is convinced the Tyrone Project is terminated, and we have no evidence before us to the contrary, despite the speculation of the Dakota Commissions that the licensee may yet make use of the construction permit. The licensee's filing before us is unequivocal that the project is abandoned. We are certain that if the licensee harbored any intent to pursue this project at some near future date, it would vigorously oppose revocation of the construction permit, which could only be reacquired through the full process of re-application and hearings. On the record before us if we find that a hearing on whether revocation should be delayed would serve no useful purpose.

CONCURRING VIEWS OF COMMISSIONERS GILINSKY AND BRADFORD:

We agree that these requests should be denied. If the Nuclear Regulatory Commission were to grant the relief sought, it would not redress the injury alleged. NRC cannot force a licensee to build a nuclear facility. In this case, the licensee has unequivocally stated that it has no intention to construct the Tyrone facility. Thus, our treatment of the CP will have no effect on the ultimate fate of the project and the treatment of cancellation costs. For the same reasons, it is equally clear that the decision to terminate the Tyrone CP is not a "major federal action significantly affecting the quality of the human environment" for the purposes of the National Environmental Policy Act of 1969.

Cite as 12 NRC 528 (1980) **CLI-80-37**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. RM 50-7**

AUTHORITY FOR ACCESS TO OR CONTROL OVER SPECIAL NUCLEAR MATERIAL **November 17, 1980**

The Commission concludes a rulemaking on a system of personnel security clearances for access to special nuclear material by individuals in the licensed nuclear industry, and decides to institute the traditional government program for granting security clearances only with regard to formula quantities of special nuclear material at fuel cycle facilities and in transit. The Commission also announces its intention (1) to develop and publish for comment a proposed rule providing guidelines for an industry-conducted clearance program for use at power reactors; and (2) to defer its decision with respect to research reactors pending completion of a separate, ongoing review of total safeguards requirements at such facilities.

DECISION

This decision concludes a rulemaking begun over three years ago in which the Commission has considered whether and how to provide for a system of personnel security clearances for access to special nuclear material. Security clearances were proposed in order to provide additional protection in the aspect of the Commission's safeguards program that endeavors to reduce the risks that insiders will facilitate the theft or diversion of special nuclear material for uses inimical to the common defense and security. As a part of the rulemaking, the Commission requested public comment, convened a public hearing, and entertained recommendations from its hearing board. Finally, the Commission bal-

anced in light of the entire record and established Commission policies the competing considerations that have made the resolution of this matter so protracted and difficult. Our decision, which we explain in more detail below,[1] accepts the proposed traditional clearance program for use to grant access to or control over those materials in the nuclear fuel cycle presenting the most serious safeguards risks, and announces the agency's decision to develop and publish for comment a proposed rule for broader use throughout the nuclear industry that embodies concepts widely advocated by nongovernment participants in the hearing.

Background

On March 17, 1977 the Commission caused to be published for public comment a clearance rule to govern access to or control over special nuclear material by individuals in the licensed nuclear industry.[2] The proposed rule provided for an access authorization program graded in scope of background investigation[3] and employing as guidelines for granting clearances government-wide criteria currently in use for NRC clearances for access to information.[4] The coverage of the rule included licensed fuel cycle facilities, power reactors, and research reactors as well as transportation of special nuclear material associated with these licensed activities. It was stated that Section 161i(2) of the Atomic Energy Act of 1954 as amended provided authority for the promulgation of the proposed rule.

The public expressed considerable interest in the Commission's proposal. In light of the number of comments and in response to specific requests for a hearing, the Commission decided to provide a modified legislative type public hearing to afford greater opportunity for comment and enable expansion of those views already made known to the Commission in comment. The hearing was to be informal and "oriented toward additional information as well as further comment on policy issues." 42 FR 64703, 64704 (1977). The scope of the hearing was "to encompass all relevant

[1]Further detailed explanation of the rule itself is provided in the statement of supplementary information of the Federal Register publication of the rule we have adopted and which is attached hereto as Appendix A. *See* 45 FR 76968 (November 21, 1980).
[2]42 FR 14880 (1977).
[3]Less sensitive clearances were to be based on investigative data derived from a National Agency Check while more sensitive clearances would require a full field investigation. Applicants for both types of clearances would be considered in the light of the same criteria.
[4]*See* 10 CFR Part 10.

issues raised by the proposed rule," and particularly seven issues identified as being of particular importance.[5]

A hearing board was appointed to preside over the conduct of the hearing and instructed that, when the hearing record was closed, the presiding officer should forward the record to the Commission without rendering any decision or making any recommendation. Subsequently, in the course of the hearing, the Commission decided it would be useful to have recommendations from the hearing board, and requested them. The Board submitted its Report on April 2, 1979. The Board's Report includes a more detailed account of much of the foregoing information as well as a summary of the proceeding, recommendations on the proposed rule, and an issue-by-issue analysis of the seven issues the Commission requested that the hearing address.

The Commission appreciates the efforts of the board and, as detailed below, has accepted many of the board's recommendations. Some of the board's analyses and recommendations on specific issues were less complete than others. This appears to be because no public participants chose to provide further information on those points. In such instances we have proceeded on the basis of the information made available to us before issuance of the proposed rule or subsequently by our staff.[6]

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[5]The seven issues are:

1. The need for the proposed clearance rule in each of the licensed activities covered by the proposed rule.

2. The identification and advantages/disadvantages of alternative programs, such as psychological testing administered by licensees under standards established by the Commission, and alternative safeguards measures not involving investigation or testing of licensee employees such as surveillance and access controls.

3. The impact of the proposed rule on manpower requirements and costs during planned outages at power reactors.

4. The suitability and relevance of 10 CFR Part 10 derogatory information categories for material access authorization.

5. The extent to which a clearance program should be credited toward meeting the performance requirement of 10 CFR 73.55 and proposed 10 CFR 73.20 (42 FR 34312), and particularly toward meeting the postulated threat of internal conspiracy.

6. The desirability of applying the rule to university research and training reactors subject to 10 CFR Part 73.

7. Impact of the proposed clearance program on transportation of special nuclear material.

[6]Staff analyses and normally confidential legal memoranda from the offices of the Executive Legal Director and General Counsel have been provided to all participants on the service list with opportunity for comment. The staff papers that were available to the Board included information on all issues specifically raised in the notice of hearing.

Decision by Categories

The Commission has determined that requiring identical programs for all licensed facilities and related transportation is not warranted. Rather, different clearance programs will be applied to different categories of activities as follows:

1. At licensed fuel reprocessing plants, in the licensed use, processing or storage of formula quantities[7] of special nuclear material and in the transportation by the private sector of formula quantities of special nuclear material, a traditional clearance program will be put in place substantially as provided in the proposed rule.
2. At power reactors licensed pursuant to 10 CFR Part 50[8] and facilities possessing only irradiated special nuclear material subject to the exemption of 73.6(b)[9] we will not apply a program based on traditional government clearance. Rather, we will issue for comment a proposed rule for power reactors based on the board's recommendation that at power reactors an industry-conducted program meeting federal guidelines is preferable. The rule will set forth the standards for that program. Facilities possessing only irradiated nuclear material subject to the exemption of 73.6(b) will be exempt from this rule as well.
3. A final decision has not been made on how to proceed at non-power reactors and with respect to fuel stored for them. The Commission has determined that it should await completion of a separate ongoing review of total safeguards requirements adequacy at such facilities.

We will enlarge on each of these separate decisions in turn. However, as a general principle the Commission endeavored to minimize the extension of government run security clearance programs into the private sector. We concluded that we should apply a clearance rule only to those activities where malevolent actions by an insider or insiders could clearly result in a threat to the common defense and security.

1. Imposition of a Traditional Government Clearance Program at Fuel Cycle Facilities and for Certain Persons Involved in Transportation of Special Nuclear Material (SNM)

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[7]"Formula quantity" means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula provided in 10 CFR 73.2(bb).

[8]Except for the Fort St. Vrain facility, which because its fuel contains highly enriched uranium presents special consideration.

[9]This exemption excludes from other safeguards requirements special nuclear material not readily separable from other radioactive material and which has a total external radiation dose rate in excess of 100 rems per hour at a distance of 3 feet, as the Commission has determined that a threat of theft or diversion of such material is minimal.

The Commission decided to institute at this time the traditional government clearance program at and only at fuel cycle facilities possessing formula quantities of SNM and for transportation of those certain quantities of SNM. In so doing we have declined to some extent to accept the recommendation of the Hearing Board as it pertains to fuel cycle facilities and transportation. As best we read the Board's recommendations it was neutral or negative about the need for the proposed rule, preferred a rule incorporating psychological screening and recommended especially against the continued use of some of the Part 10 criteria.

Need at Fuel Cycle Facilities

With regard to need for a rule, several observations should be made. First, we note that the hearing did not ever really focus on the need issue as it concerned fuel facilities. This was evidenced by the Board's declining to recommend on whether an access program was needed at fuel cycle facilities.[10] However, it is well recognized that fuel cycle facilities generally possess formula quantities of special nuclear material and that such material when misused could endanger the common defense and security. Furthermore, the Commission has determined that, while no proof can be adduced that theft or sabotage will take place in the future, on the basis of past events a credible danger of insider malfeasance may be assumed to exist. And a significant part of our safeguards program already in place is based on the Commission's concerns related to insider harm.[11] A clearance rule will increase our required level of protection against such threats.

Because DOE clearances and NRC clearances for classified information are already in force in this category of facilities, the institution of a requirement for an NRC material access clearance will not constitute a significant extension into the private sector.

Need in Transportation

For the same reasons, SNM in transit requires protection and further, the very fact that it is being transported makes it particularly vulnerable.[12] It is therefore important to provide the additional protection of a clearance program to drivers of motor vehicles, pilots of aircraft, and those who escort or schedule road, rail, air or sea shipments transporting formula quantities of special nuclear material. Such a requirement would not involve so large a

[10]We believe it is fair to assume that chief among the reasons the hearing lacked focus on the issue of need for a rule at fuel cycle facilities was the general acceptance of the proposition that the consequences of malevolent actions by an insider or insiders at a fuel cycle facility could be so great as to warrant strong measures to reduce the likelihood of malevolent action.
[11]*See e.g.* 10 CFR 73.1a.
[12]Board's Report p. 85.

percentage of persons in transportation as to provide a significant extension of government clearances into that segment of the private sector. To the extent it does introduce this factor into a new segment of the private economy, we determine that it is warranted because of the particular vulnerability of SNM in transport to theft and diversion.

Decision to Adopt the Traditional Government Program

On the basis of the record before it the Hearing Board recommended an industry-run personnel clearance program and if, notwithstanding, a governmental run program was selected, that the criteria to be employed be revised to eliminate certain questionable criteria.

We have rejected these aspects of the Board recommendation for fuel cycle facilities and transportation because we believe that adoption of a traditional clearance program is the most reasonable course at this time. A traditional program is ready, tested, consistent with clearances already required, and is designed to provide an assurance of individual trustworthiness and reliability, which is in the final analysis the assurance that we now seek. On the other hand, the program recommended by the Board would first need to be designed and issued for public comment. Moreover, we have chosen to develop for power reactors the type of program recommended by the Board. We will have an opportunity to observe the operation of the specific program that is adopted and, if experience indicates that such a program is more effective than the traditional program, we can subsequently change the requirements for fuel facilities or transportation.

It is with some chagrin that we conclude that the immediate availability of the traditional clearance program need be a criterion of decision. However, we embarked on this matter years ago and we are uneasy that fuel facilities and transportation of SNM have so long gone without the added protection of a clearance program. We face a situation today where the only rule that is ready for adoption is the traditional rule. While this is not alone a sufficient reason for its adoption, it is a factor that we have taken into account.

The widespread use throughout the government of the type of program we institute is another factor we weigh more heavily than did the Hearing Board. For the same reasons we are less troubled than was the Board by the criteria's lack of specific focus on access to material. In this area we are not dealing with mathematical or scientific certainties.[13] We are seeking an assurance of reliability and trustworthiness so that we may be confident

[13]The factual component of psychological testing is less clear. Nonetheless, we are instituting a program that will incorporate psychological testing at power reactors, and the results will be transferable to fuel facilities and other projects if warranted.

that the common defense and security is protected. We find it reasonable for this purpose to accept a government-wide and long-tested program developed to provide those assurances. And we also give weighty consideration to the fact that DOE and DOD clearances of the same type are already in use in these facilities so that consistency will be served by our adoption of the traditional program. Avoidance of requiring redundant intrusive clearance procedures will be achieved along with the accompanying cost savings for government and industry.

Questionable Criteria

The Commission believes that the hearing did not produce a record adequate to cause it to alter the government-wide criteria used in clearance programs. Such a program provides "a total package of information [to] be taken and evaluated to determine the trustworthiness and reliability, stability, of the person."[14] It relies on a sensitive common sense application of the criteria to avoid unfairnesses. For example, one of the most actively contested criteria is 10 CFR 10.11b(a) which considers information of homosexual activity to be derogatory information. It has been pointed out that a chief reason given for inclusion of this criterion is the susceptibility to blackmail of the person involved in this activity.[15] Sensitive application of this criterion might give it no weight where the applicant was an open or avowed homosexual in a community accepting of this behavior. On the other hand the secret homosexual who believes that he stands to suffer from a loss of secrecy might be susceptible to blackmail attempts that could undermine his trustworthiness. That possibility, while not controlling, could in our view be a legitimate concern in evaluating whether or not to grant a clearance.

Similarly, derogatory criteria based on spousal attributes has been criticized as having no relationship to an applicant's reliability to handle special nuclear material as opposed to classified information; however, it is not clear that pressures from a spouse would be less influential in causing a person to violate his trust relative to material access than to classified information. Information in this area, like all potentially derogatory information, raises a flag that requires the adjudicator to make a judgment whether this information in context is meaningfully related to an evaluation of the applicant's trustworthiness and reliability.

In sum, nothing on the record has convinced us that the deletion of some criteria will create a more sensitive screen to separate out potential

[14]Transcript, p. 76 (Staff witnesses).
[15]Written testimony of Dr. Franklin E. Kemeny, p. 3.

malefactors and there is some reason to believe that piecemeal revision of the government-wide criteria is not desirable.[16] Our expectations were that other agencies of the government more intimately concerned with these matters and with greater expertise would have by now completed their review and revised as necessary the government's criteria.[17] This has not happened as expeditiously as we had hoped. However, in that we have decided to limit so stringently the area of application of the traditional clearance program, we believe more is to be lost by partial revisions than is to be gained. Our maintenance of the traditional program will permit the easy transferability of clearances used for in DOE and DOD programs and should do much to reduce potentially redundant invasions of privacy as well as costs.

2. Industry-Conducted Program at Power Reactors

The Commission has decided that because a different set of circumstances obtains with regard to power reactors — notable among them the absence of a threat related to theft of weapons grade nuclear material — it will adopt for them the resolution of the hearing board (Report of the Board, p. 60, *et seq.*). To do so will clearly satisfy the overwhelming majority of participants in the proceeding.

The Board-recommended program would involve a limited background investigation including employment history and criminal history. It would not support investigation into constitutionally protected areas of association and belief. A psychological screening program and a system for continued observation by supervisors would be required. Procedures for appeals and privacy protections will also be provided.

The objective of inquiry of any psychological screening to be required is the detection of emotional instability that would serve as a predictor of unreliability. We specifically do not intend to require or to authorize or in any way anticipate probing of candidates for determination of their

[16]As revealed by the memoranda from both our legal offices submitted for the record, the Commission believes that it has authority to establish its own criteria and that it need not follow criteria established by the Department of Energy. We also are of the view that the record supports the staff in its assertion that it considered alternative criteria. Unfortunately, the model of the potential thief or saboteur is elusive and therefore design of a screen particularized to catch only such a malefactor has not been achieved. We are forced to rely on a scheme designed to catch the disloyal, untrustworthy and unreliable, counting on the sensitivity of those administering the program to ensure that a nexus exists between the disloyalty, untrustworthiness and unreliability of such a person and security of special nuclear material.

[17]The criteria were written in a different generation and the language is somewhat anachronistic and therefore perhaps more offensive on its face than need be the case.

political or religious beliefs or other matters protected by the First Amendment.[18]

The Board particularly expressed its concern regarding the paucity of views of organized labor about clearance programs such as the Board recommended program vis-a-vis individual privacy. (See Board's Report p. 62 and note). Our decision to issue the regulations incorporating the Board's recommendation as a proposed rule for public comment will provide a new opportunity for labor and others to comment on this and other issues. The record of decision for the new rule will include, in addition to any comments received, the Hearing Board's Report as it relates to power reactors and the record in that regard on which the Board relied.

3. Research Reactors

The Commission has determined to defer its decision with respect to research reactors pending completion of separate ongoing review of total safeguards requirements adequacy at such facilities. It does so fully conscious that at the very few research reactors handling formula quantities of SNM the same standard of caution that we are applying elsewhere in the commercial nuclear community will not apply at this time. Our delay recognizes that a requirement of clearances would be a significantly more drastic step with regard to university and research programs than at fuel cycle facilities. It might preclude altogether the survival of these programs. This is true in large measure because of the difficulty of meshing academic plans for research participation of one or two terms' duration with the time required to process clearances. In contrast, the greater stability of the employee population of the nuclear industry enables us to apply the rule without drastic effect by allowing all those workers in the existing work force who apply for clearances to continue working pending a decision. And in any event, such clearances are already required in the affected industry whereas only in rare instances do members of the academic community possess security clearances.

We believe it is reasonable to await completion of our staff's evaluation of total safeguards protection at research reactors.

[18]The rule we anticipate will not require issuance under the authority of 161i(2). Its issuance therefore is not dependent on the resolution of the legal dispute over the applicability of that section to power reactors.

Dissenting views of Commissioner Bradford and separate views of Chairman Ahearne and Commissioners Gilinsky and Hendrie are attached

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 17th day of November, 1980.

*This opinion memorializes a decision made by a three-to-two vote of the Commission on June 24, 1980. Chairman Ahearne and Commissioners Kennedy and Hendrie voted for the rule; Commissioners Gilinsky and Bradford voted against the rule.

APPENDIX A

SUPPLEMENTARY INFORMATION: Section 161i of the Atomic Energy Act of 1954, as amended, permits the Nuclear Regulatory Commission to prescribe regulations instituting a clearance program for those individuals who have access to or control over special nuclear material. Specifically, the section provides that the Commission may issue regulations "...designating activities involving quantities of special nuclear material which in the opinion of the Commission are important to the common defense and security, that may be conducted only by persons whose character, associations and loyalty shall have been investigated under standards and specifications established by the Commission and as to whom the Commission shall have determined that permitting each such person to conduct the activity will not be inimical to the common defense and security...."

Pursuant to this statutory authority and after consideration of the results of public comments, the record developed in an informal hearing, and the recommendations of the hearing board, the Commission is issuing regulations which would require certain individuals involved in the operation of licensed fuel reprocessing plants, in the licensed use, processing, or storage of certain quantities of special nuclear materials, and in the transportation by the private sector of certain quantities of special nuclear material, to receive authorization from the Commission for access to or control over special nuclear material. Nuclear power reactors licensed pursuant to 10 CFR Part 50* are not covered by these amendments. They will be the subject of a separate rulemaking to include a notice and comment period. Additionally, non-power reactors and storage of fuel incident thereto, have been excluded from the requirements of these amendments pending completion of a separate ongoing review of total safeguards requirements adequacy at such facilities. When that assessment is complete, consideration of access authorization requirements will be included in the evaluation of overall safeguards upgrading which may be considered necessary for these facilities. Finally, facilities possessing formula quantities of special nuclear material only in the form of irradiated special nuclear material subject to the exemption of 73.6(b) are also excluded from these requirements as the Commission concludes that the risk of theft or diversion of such material is minimal. This is consistent with other safeguards requirements for irradiated special nuclear material.

*Except for the Fort S. Vrain facility.

These regulations utilize a personnel security program as a measure to protect against those employed in the affected nuclear activities who might conspire to steal or divert special nuclear material or conduct sabotage which would endanger the public by exposure to radiation. Of course, a clearance program itself does not entirely solve the problem of the "insider," but, in the opinion of the Commission, experience has shown that such programs do substantially reduce the risk. Moreover, the proposed program is one of several elements in the Commission's overall safeguards program which together protect against threats, both internal and external.

Two levels of special nuclear material access authorization are established. The higher level, NRC-U, is based upon a full-field background investigation and will apply to (i) all individuals who require unescorted access to special nuclear material or within vital areas, (ii) those jobs in which an individual alone or in conspiracy with another individual who does not possess an NRC-U special nuclear material access authorization could act to steal or divert special nuclear material or to commit sabotage, and (iii) drivers of motor vehicles and pilots of aircraft transporting certain quantities of special nuclear material and those who escort road, rail, air or sea shipments of special nuclear material. The lower level, NRC-R, is based upon a National Agency Check and will apply to all individuals who require unescorted access to protected areas and who are not required to possess an NRC-U special nuclear material access authorization. An implementation schedule has been established to account for changed estimates of the time required to process access authorization applications (190 days for an NRC "U" and 130 days for an NRC "R") and for the initial flow of applications. Jobs at fixed sites requiring access authorization will be identified by licensee submittal of an amendment to the security plan. For jobs not requiring an amended security plan, affected individuals must have the required access authorization within 365 days of the effective date of the amendments. All others must have authorization 365 days after having the amended security plan approved designating those jobs which require access authorization. Excepted from the 365-day implementation in all cases are those who initially apply but have not received notification due to Commission processing time.

Both the National Agency Check and the full-field background investigation are conducted by the Office of Personnel Management. The National Agency Check consists of a check of files of the FBI (fingerprint and central files), Office of Personnel Management (Security-Investigative index), and a check of military records and records of other government agencies, as appropriate. The full-field background investigation consists of interviews of references, conducted by investigative agents of the Office of Personnel Management, in addition to the records check. Sources of

information developed in the course of the investigation are also interviewed. The full-field background investigation conducted by the Office of Personnel Management generally covers the 5-year period of the individual's adult life prior to the investigation.

Licensees and license applicants will be required to amend their security plans by identifying and describing jobs at their facilities which require authorization. Affected individuals will be required to obtain authorization according to the schedules set forth in the proposed rules. Individuals who are newly hired or who change jobs where the new job will require a material access authorization must obtain an authorization before beginning the job. Authorization will be renewed every 5 years.

The establishment of a material access authorization program in the licensed nuclear industry will affect individuals who are not employed by any licensee or contractor of the Commission as well as licensee employees. It is the Commission's intent to minimize both the impact on the rights of privacy and association of individuals affected, and the number of individuals affected, while providing an effective measure of protection against those who would seek employment with, or use their position in, the nuclear industry for purposes of theft or sabotage. In preparing these regulations, among the matters considered were the scope of investigations (e.g., whether a full-field background investigation should be required for all individuals), which job functions should require material access authorization (e.g., require authorization only for "key" positions or adopt a graded system with level of clearance determined by job), whether psychological assessment should be required, and the relation of the proposed program to current NRC and DOE personnel security programs.

The Commission also considered the question of whether new criteria should be developed against which a decision for authorization would be made. The present NRC security clearance criteria (10 CFR Part 10) were developed for access to classified information and, as such, not all criteria may be equally significant for questions of access to special nuclear material, and some may not be perceived as relevant in specific cases. Also, there may be cases in which additional criteria, not now included in 10 CFR Part 10, would be more to the point. However, these criteria do correspond to the Federal Government's general approach to personnel security, and specifically, they are presently used for DOE access authorization programs. Furthermore, the criteria are in the nature of guidelines to be used in a decision process characterized by common sense judgments, rather than quantitative criteria. Moreover, the Commission is reluctant to devise a new set of criteria without evidence that such new criteria would significantly improve upon those which presently exist. The Commission notes, however, that the Department of Energy is currently

reviewing the criteria applicable to access to Restricted Data and Material and the Commission will review its own criteria in 10 CFR Part 10 in light of any revision made by the Department of Energy in 10 CFR Part 710. Hence, in light of the above, the Commission is relying on the considerable expertise residing in the broad experience of the Federal Government in the area of personnel security programs by proposing the use of the criteria contained in 10 CFR Part 10 as guidelines in deciding questions of access to or control over special nuclear material.

SEPARATE VIEWS OF CHAIRMAN AHEARNE

The Commission decision applies the traditional clearance program for access to formula quantities of special nuclear material at fuel cycle facilities and for persons involved in the transportation of formula quantities of special nuclear material. Contrary to the dissenting views of Commissioners Bradford and Gilinsky that "the Commission has disregarded the findings and recommendations of the Hearing Board," the Commission decision accepts the Board's recommendation for power reactors, which was the primary area addressed by the Board. Relative to the need for a clearance rule for fuel cycle facilities, the Hearing Board stated that "the Board makes no recommendation on this issue" (see Report of the Hearing Board, April 1979 in Docket Rm 50-7, Page 42). Thus, the Commission has not disregarded the Hearing Board's recommendation with respect to the need for a rule at fuel cycle facilities, since there was none.

SEPARATE VIEW OF COMMISSIONER HENDRIE

I concur with the views expressed by Chairman Ahearne.

DISSENTING VIEWS OF COMMISSIONER BRADFORD

The application of the 10 CFR 10.11 derogatory information criteria in a rule governing clearances for access to special nuclear material is not justified. Too many of the criteria do not provide a rational basis for making the necessary judgments. Instead, they promise an arbitrary system that will not be applied to those who challenge it but that will effectively deny employment to those who do not wish to litigate with their employer or with the government.

The Commission invited the public specifically to address this issue in their comments. The revised Statement of Considerations said "the Commission is particularly requesting comments both on the relevance of individual criteria of 10 CFR Part 10, and on the completeness and suitability of the criteria as a whole for questions of access to or control over special nuclear material," (42 FR 14880, 14881; see also Report of the Hearing Board, April 1979 in Docket RM 50-7, hereinafter referred to as "Board Report," p. 10).

In response to this request and during the course of the hearings, comments were received criticizing the criteria as discriminatory, outmoded, vague, inappropriate and overly intrusive into constitutionally protected areas of beliefs and associations. The American Civil Liberties Union challenged the relevance and vagueness of a) the refusal to serve in the Armed Forces when such refusal cannot be clearly shown to be done for religious convictions, Section 10.11(b)(6); b) the engagement in infamous, immoral, or notoriously disgraceful conduct without adequate evidence of reformation, (6)(8); and c) engagement in homosexual or other sexually perverted conduct without adequate evidence of rehabilitation, (b)(9). The NRC staff itself acknowledged, "A significant element of the staff considers the present criteria anachronistic and phrased in a manner of questionable acceptability in today's society." (D.T. 21; see also Board Report p. 71). At the hearing, the staff admitted that the loyalty and associations of a spouse (10.11(b)(1) (5)) were not "as pressing" in the case of access to special nuclear material as with access to classified information. (D.T. 20; Donoghue to Minogue Memorandum, August 30, 1976).

After a thorough review of the record of this proceeding, the Hearing Board concluded "that the record does not support the adoption of the rule as proposed, although it does support the idea that a uniform standard employing personnel screening techniques is desirable for access to or control over special nuclear material." (Board Report, pp. 1-2). The Board specifically found that the proposed rule is unjustified and potentially destructive of first amendment and privacy rights. (Board Report, p. 33). I agree with the Board's conclusion.

In imposing the so-called traditional government clearance program at fuel cycle facilities and for persons involved in the transportation of quantities of special nuclear material significant for bombmaking purposes, the Commission has disregarded the findings and recommendations of the Hearing Board without a single reference to the record or any indication of how the Commission disagreed with the Board's assessment. The Commission's statement in support of the rule suggests that the primary factor taken into account was the immediate availability of the traditional clearance program. The Commission is "chagrined" over having to admit that the immediate availability of this rule was a criterion for its decision, but this embarassment over the delay in adopting some sort of clearance program is no excuse for infringing upon the rights of the persons who will be subject to this rule.

The Commission finds support for the application of the derogatory information criteria in the fact that they have already been applied by other federal agencies. The fact is that, while these criteria are on the books for such agencies as the Department of Energy, the most offensive of them are not applied by DOE in any case that is seriously contested. Thus, they deter those hesitant to begin a career by threatening to take their employer to court while providing no judicially sanctioned showing that draft resistence, a divorce, an affair, or homosexual tendencies are in themselves of importance in determing an individual's suitability to be cleared.

Before the Commission can make inquiries into an individual's associations, sexual preferences, exercise of Fifth Amendment rights, and other well-recognized protected areas, it must show a substantial relation between the information sought and a subject of overriding and compelling interest. *Gibson* v. *Florida Legislative Investigation Committee,* 372 U.S. 539 (1963). There is obviously a compelling interest in the reduction of the risk to the national defense and security associated with the loss or diversion of material useable in a nuclear bomb. However, the record of this proceeding makes no showing that an individual who runs afoul of these outdated criteria is more likely to steal or divert such material.

Even a cursory review shows that these criteria are susceptible to serious abuse. Section 10.11(b)(8) addresses a situation in which an individual '[h]as abused trust, has been dishonest, or has engaged in infamous, immoral or notoriously disgraceful conduct without adequate evidence of reformation." On its face, this is hard to quarrel with. Unfortunately, the rule does not define any of these significant terms so that an applicant for a clearance has no prior notice of the type of conduct which will be viewed adversely. The criterion is a dragnet whose scope may be as wide as the prejudices of those who may administer it. Similarly vague is (b)(13) which ropes in situations in which an applicant has '[e]ngaged in any other conduct, or is the subject

of any other circumstance, including demonstrated financial irresponsibility, which tends to show that he is not reliable or trustworthy, or which furnishes reason to believe that he may be subject to coercion, influence or pressure which may cause him to act contrary to the best interests of the national security."

The vagueness of the rule is worsened by the apparent inconsistency between the rule itself and the Commission's statement. In discussing 10.11(b)(9), which would exclude any applicant who is a "homosexual or other sexual pervert; or has engaged in homosexual or other sexually perverted conduct without adequate evidence of reformation," the Commission indicates that the susceptibility of such individuals to blackmail or other coercive activity makes them untrustworthy. However, the statement acknowledges that such may not be the case for open and avowed homosexuals residing in a community where such behavior is accepted or tolerated. Apparently, such factors as community norms will be considered in evaluating clearance questions in individual cases. However, the rule provides that an applicant's sexual preference and his susceptibility to blackmail and coercion are independent criteria. Consequently, the separate criterion on homosexuality is at best redundant, and at worst it provides a potential contradiction to the Commission's intentions.

A number of the so-called "Category B" criteria are also applicable to an applicant's spouse. Thus, an applicant whose spouse associated with certain types of individuals or organizations or who has relatives residing in certain unspecified countries may also be excluded from employment in fuel cycle facilities. In response to the criticism that derogatory criteria based on spousal attributes have no relationship to an individual's reliability to handle SNM, the Commission states "it is not clear that pressures from a spouse would be less influential in causing a person to violate his trust relative to material access than to classified information." (Statement at page 10). Not only is the decision to apply the criteria addressing spousal attributes not based on any information in the record, but their application will require judgements as to which marital relationships are vulnerable to undesirable interspousal influences, an area in which the Commission is unlikely to distinguish itself.

In footnote 16, the Commission states "...unfortunately, the model of the potential thief or saboteur is elusive and therefore design of a screen particularized to catch only such a malefactor has not been achieved. We are forced to rely on a scheme designed to catch the disloyal, untrustworthy, and unreliable, counting on the sensitivity of those administering the program to ensure that a nexus exists between the disloyalty, untrustworthiness and unreliability of such a person and the security of special nuclear material." Further, the Commission acknowledges that "the criteria were

written in a different generation and the language is somewhat anachronistic and therefore perhaps more offensive on its face than need be the case."[1]

Without much effort, the Commission could have edited the criteria into a less obnoxious form. The general criteria could have been made sufficiently specific to reduce their potential for arbitrariness. The specific criteria could have been pruned to eliminate the irrelevant, and what remained could have become subcategories of the general criteria. The administration of such criteria would still have required sensitivity, but the criteria would not themselves have been flawed from the outset.

SEPARATE VIEWS OF COMMISSIONER GILINSKY

I concur with the views expressed by Commissioner Bradford.

[1]These concerns echo those voiced by the Board in recommending against the use of the proposed rule. That the Board made no recommendation regarding the need for the proposed rule at fuel cycle facilities is a separate matter. The Board's action seems to me to flow from the silence of the record on this issue. The Board indicated that "[n]o significant comments on this aspect of the proposed rule were received." (Board Report, p. 42). Without such information, the Board could make no recommendation. However, this has no effect on the Board's rejection of the proposed rule and the use of the derogatory information criteria. As discussed above, the Board did recommend an industry-conducted program employing personnel screening techniques (specifically ANSI N 18.17 (1973), Board Report, p. 61). In addition, the Board specifically recommended "that the Commission not adopt the Section 10.11 derogatory information criteria as proposed by the staff." Board Report, p. 77. It is this recommendation which the Commission disregards in adopting this rule.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of **Docket No. 50-266**

WISCONSIN ELECTRIC POWER COMPANY
(Point Beach, Unit 1) **May 12, 1980**

The Commission directs that a Licensing Board be empaneled (1) to rule on a request for a hearing on an order of the Director, NRR, amending the operating license for the plant, applying the principles set forth by the Commission in *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980); and (2) if required, to conduct an adjudicatory hearing on the issues identified in the Director's order.

ORDER

The Commission has before it a request for a hearing on two orders relating to Unit 1 at the Point Beach nuclear facility. This request for a hearing is one in a series of filings, meetings, Commission briefings and orders related to the question of steam generator tube integrity at Point Beach. On November 30, 1979, after a Commission briefing on the safety issues involved, the Director of NRR issued an order amending Unit 1's license and placing certain limiting conditions on its operation. The order gave an opportunity for hearing to "any person whose interest may be affected" by the order. By letter dated December 17, 1979, Wisconsin's Environmental Decade, Inc. (Decade) requested a hearing on the order. The licensee, Wisconsion Electric Power Company, filed a response on December 27, 1979, in opposition to the request. Subsequently, following a

second briefing to the Commission on January 3, 1980, the staff imposed additional limiting conditions reducing the primary pressure in the steam generators at Unit 1. *See* Order Modifying Confirmatory Order of November 30, 1979. On February 11, 1980, the NRC staff filed a motion to deny the request on essentially the same grounds as the licensee's December 27 response. Finally, on February 22, 1980, Decade answered the staff's February 11, 1980 Motion To Deny Request For Hearing, repeating its request for a hearing and alleging injury to its members stemming from the order.

Pursuant to Section 189a. of the Atomic Energy Act, which provides for a hearing in license amendment proceedings, the November 30, 1979 order stated that any person whose interest may be affected by the Order may request a hearing. The order also limited the issues in any such hearing to:

1. whether the facts stated in Section II and III of this Order are correct; and,
2. whether this Order should be sustained.

In a recent case the Commission ruled on a request for a hearing on an enforcement order with a similar scope. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980). The Commission directs the Chairman, Atomic Safety and Licensing Board Panel, to empanel a Board to determine whether a hearing is required based on the principles set forth in that case. If the Board determines that a hearing is required, the Board is instructed to conduct an adjudicatory hearing solely on the issues identified in the Order. *See Marble Hill, supra.*

Commissioners Gilinsky and Bradford dissent from this Order. Their dissenting views are attached.*

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 12th day of May, 1980.

*Section 201 of the Energy Reorganization Act, 42 USC 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Kennedy was not present at the meeting at which this order was affirmed. Had Commissioner Kennedy been present at the meeting he would have voted to approve the order. To enable the Commission to proceed with this case without delay, Commissioner Bradford, who was a member of the minority on the question up for decision, did not participate in the formal vote. Accordingly, the formal vote of the Commission was 2-1 in favor of the decision.

DISSENTING VIEW OF COMMISSIONER BRADFORD WITH COMMISSIONER GILINSKY CONCURRING

One need not have high expectations about the contribution that a hearing might make to the safety of the plant in any given case to be distressed about the levels of illusion involved in the Nuclear Regulatory Commission's application of its recent *Marble Hill* decision[1] to this and to future cases. There are at least three such levels. In increasing order of importance, they are:

1) The agency so misstates history that it is clearly either incapable of giving an accurate account of its own past doings or else its legal positions are being chosen after the desired result (in this case no meaningful opportunity for hearing) has been decided.

The *Marble Hill* case, which seems to control the result in this case, claims that it is "settled that the Commission will apply judicial concepts of standing to determine hearing and intervention rights under Section 189a of the Atomic Energy Act." This holding is alleged to flow from *Portland General Electric Company* (Pebble Springs Nuclear Generating Station, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976). It does not.

The *Portland* case states only that the concept of a petitioner "interest which may be affected by the proceeding" within the meaning of Section 189a of the Atomic Energy Act is to be assessed according to contemporary concepts of standing. The *Portland* case then goes on to recognize, as this agency has since its first recorded decision,[2] that hearing and intervention rights before administrative agencies need not be governed by judicial concepts of standing. The *Portland* case lays out a test for discretionary hearing rights based on the six factors outlined in 10 CFR 2.714 but acknowledging that other factors may be considered. *Marble Hill* pays no explicit heed to the *Portland General* test and applies only those of the factors convenient to the result sought by the Commission. In this case, the Commission goes further and declines to apply the discretionary tests itself or to permit the Board to do so.

2) The hearing being offered as a matter or right pursuant to *Marble Hill* is a sham. Petitioners are not permitted to contest the issue that concerns them most, namely the sufficiency of the NRC's action as against the claimed need for other remedies. In short, the Commission has

[1]Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2) CLI-80-10, 11 NRC 438 (March 13, 1980).

[2]*In the Matter of Power Reactor Development Company,* 1 AEC 1, at p. 3 (1956).

constructed a test that grants a meaningful right to a hearing in cases of this sort only to the utility or another party which may assert that the order goes too far. Anyone else seeking to argue the insufficiency of an NRC imposed remedy must prove that the remedy has made the facility less safe than it had been. Thus, the public's opportunity to be heard when dangerous conditions are shown to exist at a plant can be foreclosed by a staff action resulting in a minimal improvement in safety. The "remedy" that the Commission offers in the *Marble Hill* case is the filing of a 10 CFR 2.206 petition with the staff whose remedy is being challenged. Of course, a 2.206 petition does not lead to a hearing either, and its denial is not even appealable to the Commission.

3) Most unfortunate of all is the way in which the Commission's pell mell retreat from meaningful public inquiry in the twistings between here and *Marble Hill* suggests to the staff and outside world that the agency is run by people living in fear of their own citizenry. In the wake of the Kemeny and Rogovin Reports' calls for more effective public involvement, the Commission responds with a hearing offer that is a transparent sham. To a staff that has made significant improvements in recent months, to an industry trying to appraise the seriousness of the post-TMI requirements, and to a skeptical public, the message can only be that the NRC's priority on citizen involvement is, as is stated expressly on page 6 of the *Marble Hill* opinion,[3] a relatively low one.

• • • •

Nothing in this opinion would compel the granting of a hearing in all cases or the granting of all contentions even in those hearings that were allowed. Nor does it preclude any board's taking firm action to control needless delay in its hearings.

This opinion would compel a return to the standards on intervention rights as set forth in the *Edlow International Company,* CLI-76-6, NRCI-76/5 563, (1976) and *Portland* cases and the allowing of a hearing to a group able to make a reasonable showing that the action taken by the staff had failed, in some important respect, to remedy a particular safety concern. To that extent, it would rectify *Marble Hill's* incorrect claim that it stated "settled" law and would put an end to the majority's result oriented fooling around with the Commission's more or less settled practices.

[3]It should be noted that *Marble Hill's* assertion of a major tradeoff in staff time between field inspections and legal proceedings is simply false. The technical staff manhours consumed in hearings of this sort would not normally detract significantly from the NRC's field responsibilities.

The order, "Statement of Policy: Further Commission Guidance For Power Reactor Operating Licenses," November 30, 1980, was not assigned a CLI number until July 1981. Therefore, this order can be found at CLI-81-16, 14 NRC 14 (1981).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal Chairman
Dr. John H. Buck
Thomas S. Moore

In the Matter of **Docket No. 50-409 SC**

DAIRYLAND POWER COOPERATIVE
(La Crosse Boiling Water Reactor)

November 17, 1980

Acting upon a question certified to it by the Licensing Board in this show-cause proceeding (LBP-80-26), the Appeal Board rules that the Licensing Board is clothed with the requisite authority to determine for itself the acceleration level which should be assigned to the earthquake postulated for the purpose of determining the adequacy of the seismic design of the La Crosse facility and is not required to accept a particular level of acceleration as a given.

APPEARANCES

Messrs. O.S. Hiestand and **Kevin Gallen**, Washington, D.C., for the licensee, Dairyland Power Cooperative.

Mr. Stephen G. Burns and **Ms. Karen D. Cyr** for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

In this show-cause proceeding involving the La Crosse nuclear facility, the Licensing Board is called upon to decide whether the licensee should be required to install a site dewatering system to prevent liquefaction (*i.e.*, the flow of soil under the site) were an earthquake to occur in the vicinity of the site. In order to determine the liquefaction potential, and thus the need to take measures to protect against it, the seismic conditions obtained at the

site obviously must be taken into account. More specifically, an essential ingredient of the determination is the ground vibratory motion (*i.e.*, acceleration) which might be associated with the postulated earthquake.

What has brought the proceeding to us at a still incipient stage is a question certified by the Licensing Board in its September 30, 1980 prehearing conference order. LBP-80-26, 12 NRC 367. In essence, we are asked to decide if in its consideration of the ultimate issue before it — whether a site dewatering system must be installed — the Licensing Board must accept a particular level of acceleration as a "given."[1] Stated otherwise, is the Board clothed with the requisite authority to determine for itself (following the receipt of evidence addressed to the matter) the acceleration level which should be assigned to the postulated earthquake for present purposes? *Id.* at 379.

On October 1, we accepted the certified question under the authority of 10 CFR 2.718(i) and solicited the views of the parties. The licensee and the NRC staff responded; the two intervenors (an organization and an individual) did not.

Following full consideration of the disparate positions of the licensee and staff, we conclude that the Board below is empowered to consider and determine *de novo* the ground acceleration matter. For this reason, we need not act upon the Board's alternate request that the Commission be asked now to confer such power upon the Board. *Ibid.*

A. 1. The current seismic and geologic siting criteria for nuclear power plants are contained in Appendix A to 10 CFR Part 100. Firmly embedded in those criteria is the "Safe Shutdown Earthquake" (SSE) concept.

The SSE for a particular site is that earthquake "which is based upon an evaluation of the maximum earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material" and "which could cause the maximum vibratory ground motion at the site...." 10 CFR Part 100, Appendix A, §III(c), §V(a). The nuclear power plant must be designed so that, should the SSE occur, "certain [specified safety] structures, systems, and components will remain functional." *Id.*, §VI(a). In addition, the design must "take into account the possible effects of the [SSE] on the facility foundations by ground disruption, such as...liquefaction...." *Ibid.*

In short, the SSE is the earthquake postulated for the purpose of determining the adequacy of the seismic design of the facility. The plant has to be capable of being safely shutdown despite the effects of whatever vibratory ground motion might be experienced at the site as a result of the

[1]The acceleration associated with an earthquake is expressed in terms of a percentage of "g" (one g represents the gravitational acceleration of a free falling body).

SSE. (One of the elements of the SSE determination is, of course, an ascertainment of the amount of such motion (*Id.*, V(a)).)

2. As the Licensing Board pointed out,[2] an SSE for the La Crosse site has never been formally established. This is because Appendix A was not promulgated until 1973, years after the La Crosse facility received its construction permit (in 1963) and then a provisional operating license (in 1967).

In 1974, however, the licensee submitted a seismic evaluation in connection with its application for a full-term operating license for La Crosse.[3] That evaluation selected an SSE with an acceleration of 0.12g at the site. And, although it is yet to have made its own SSE determination,[4] believing the 0.12g value to be sufficiently conservative the staff likewise employed that value in its recent analysis of the liquefaction potential at La Crosse.

But the Licensing Board is disinclined to accept the 0.12g value uncritically. LBP-80-26, *supra*, 12 NRC at 377. Its principal reason is that a 0.20g value had been assigned by the staff to the SSE for the Tyrone facility, located less than 100 miles from La Crosse and in the same tectonic province. As the Board sees it, the considerations which led the staff to its Tyrone result might come into play as well here. The Board further observed that, although the staff has now concluded that liquefaction would not be a problem at La Crosse in the event of an earthquake accompanied by a 0.12g acceleration,[5] no analysis seemingly has been made regarding the likelihood of liquefaction were the acceleration to reach 0.20g at the site. *Id.* at 377.

B. Notwithstanding the foregoing factors, the licensee insists (as it did below) that, in deciding whether a site dewatering system is necessary, the Licensing Board is barred from inquiring into the magnitude of the seismic hazard obtained at the La Crosse site. Rather, according to the licensee, the Board must accept the 0.12g acceleration value without regard to whether a basis exists to question its correctness. This is said to follow from the terms

[2]LBP-80-26, *supra*, 12 NRC at 376.

[3]The adjudicatory proceeding involving that application is still pending. See ALAB-614, 12 NRC 347, 349 fn. 6 (September 24, 1980).

[4]In its brief to us (at pp. 9-11), the staff took note of the fact that, although Appendix A to Part 100 does not directly apply to plants operating under licenses issued prior to its promulgation, a Systematic Evaluation Program has been established for the purpose of comparing "important features of the eleven oldest nuclear power plants in the United States, including [La Crosse], with current NRC design criteria for plants." The ultimate objective is to determine the "overall safety significance" of the nonconformity of those facilities with "current licensing requirements."

[5]In light of that conclusion, the licensee urged the Licensing Board to terminate this show-cause proceeding. The Board declined to do so. LBP-80-26, *supra*, 12 NRC 370-371. That matter is not before us at this time.

of both (1) the show-cause order issued by the Director of the Office of Nuclear Reactor Regulation (NRR) on February 25, 1980; and (2) the Commission's July 29, 1980 order.

In the former order, the licensee was directed to show cause why it should not be required to design and install a site dewatering system "to preclude the occurrence of liguefaction in the event of an earthquake with peak ground surface accelerations of 0.12g or less." That order went on to provide interested persons an opportunity to request a hearing. At any such hearing, the issues to be considered would be (1) "[w]hether the licensee should submit a detailed design proposal for a site dewatering system;" and (2) "whether the licensee should make operational such a dewatering system as soon as possible after NRC approval of the system, but no later than February 25, 1981," or shutdown the La Crosse reactor. For its part, the July 29 Commission order established a licensing board to pass upon the hearing requests filed in response to the show-cause order and then stated:

> If the Board determines that a hearing is required, the Board is instructed to conduct an adjudicatory hearing solely on contentions within the scope of the issues identified in the February 25, 1980, Order: (1) whether the licensee should submit a detailed design proposal for a site dewatering system; and (2) whether the licensee should make operational such a dewatering system as soon as possible after NRC approval of the system, but no later than February 25, 1981, or place the LACBWR in a safe cold shutdown condition.

The licensee would have it that the specific reference to "0.12g or less" in the show-cause order must be imported into the statement of issues contained in that order (and later repeated in the Commission's order). Consequently, we are told, the Licensing Board's authority is restricted to determining whether a site dewatering system is necessary in order to avoid liquefaction should there be an earthquake occasioning no greater than a 0.12g acceleration. For, as the licensee reminds us (and no one disputes), NRC adjudicatory boards possess only such powers as have been conferred upon them by the Commission.[6] And the responsibility for setting the bounds of this show-cause proceeding was vested by the Commission in the NRR Director, not the Licensing Board.

The staff had taken a similar stance before the Licensing Board. But it now sees the matter differently. Its present postition is this (Br. pp. 6-8; footnotes omitted):

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[6]See, *e.g., Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-80-12, 11 NRC 514, 516-17 (1980).

Although the Licensing Board must ultimately determine whether or not a dewatering system should be designed and then installed at the La Crosse site, the Board's determination cannot be made without reference to the underlying reasons in the Order to Show Cause for even considering installation of a dewatering system at La Crosse. A dewatering system was proposed in the Order to Show Cause, because it was viewed as a possible solution to the perceived potential liquefaction problem at La Crosse. Whether there is a liquefaction problem at the site will, in turn, depend upon the nature of the seismic hazard at the site. A determination of the need for a site dewatering system rests in part, therefore, on an assessment of liquefaction potential in light of seismic conditions at the site. The Staff believes that the Licensing Board is correct in saying that a reasoned determination of the need for a dewatering system depends partly on its confidence in the ground acceleration value used as a basis for its determination.

If a particular safe shutdown earthquake with a corresponding ground acceleration value had been established in a prior licensing proceeding, the effect of the 0.12g ground acceleration value might be different and indeed conclusive for purposes of the inquiry on the Order to Show Cause. However, as the Board points out, a particular safe shutdown earthquake has never been conclusively determined for the La Crosse reactor. Despite this fact, both the licensee and the Staff have relied on a .12g value as an appropriate estimate of the seismic hazard at the La Crosse site. The .12g value was one of the premises for the Staff's issuance of the Order to Show Cause in the first instance, as well as in its later determination that the licensee need not install a dewatering system at the site. Since both the Staff's and the licensee's judgment that a dewatering system need not be installed at the site is premised, in part, on the belief that .12g is a realistic estimate of the seismic hazard at the La Crosse site, it appears unreasonable to restrict the Board's inquiry into this premise, particularly when the seismic hazard has not been conclusively established. In view of the basic policy that the boards examine "thoroughly and carefully" the critical safety issues before them, inquiry into the appropriateness of the use of the .12g value by the Staff and the licensee for purposes of evaluating liquefaction potential should be considered within the scope of the permissible inquiry in this "show cause" proceeding.

C. It is readily apparent to us both that the staff's analysis is sensible and that the result advocated by the licensee offends reason. In a nutshell, the Licensing Board (once having determined the necessity for a hearing) has been directed by both the Director's Show-cause order and the Commission's subsequent order to determine whether safety considerations dictate the installation of a dewatering system. The answer to this question depends upon the liquefaction potential at La Crosse which, in turn, hinges upon the extent of the seismic hazard (*i.e.*, the amount of the ground acceleration which might be experienced at the site were the SSE to occur). Although both the licensee and the staff believe that a 0.12g value can appropriately be assigned to that acceleration, that value has never been formally established, let alone tested in adjudication. Moreover, the

Licensing Board has found (with at least some justification) cause to believe that it is suspect. All this being so, how could that Board conceivably reach a confident judgment that the public health and safety does not demand a dewatering system without first deciding whether 0.12g, or instead some higher acceleration value, is the proper point of reference?

To be sure, explicit language contained in a notice of hearing or its equivalent is entitled to respect even if it gives rise to an undesirable result subsequently repudiated by the promulgator of the document. Thus, irrespective of its obvious unattractiveness, we nonetheless might be compelled to endorse the licensee's thesis had, in so many words, either of the relevant orders defined the issues to be litigated in terms of the 0.12g value. But, as we have seen neither order did so.

Despite the reference in the show-cause order to an "earthquake with peak ground surface accelerations of 0.12g or less" (see p.553-554 *supra*), no specific value was mentioned in the statement of the issues to be considered in any hearing on the order. Rather, as earlier noted, those issues were said to be simply whether a site dewatering system should be designed and then installed by a particular date. Significantly, the Commission's July 29 order not merely framed the issues in identical fashion but also did not allude at all to the 0.12g value. In these circumstances, the two orders are susceptible of the reading that, while the show-cause order reflected the staff's "conservative" assumption of a maximum 0.12g acceleration at the La Crosse site,[7] it was not the NRR Director's (or the Commission's) intent to foreclose examination of the validity of that premise in any hearing which might ultimately be held on the need for a site dewatering system to obviate liquefaction.

In adopting that reading, we need add only that the licensee's reliance on the Commission's recent *Marble Hill* decision[8] is misplaced. As the staff correctly observes (Br. pp. 8-9), that decision stands for two propositions: (1) an enforcement proceeding lawfully may be limited to the consideration of the remedy proposed by the enforcement order; and (2) a person may not obtain a hearing on an enforcement order on the ground that the order should have granted more extensive relief. Neither of these propositions comes into play here. Although we conclude that the Licensing Board has been clothed with the authority to inquire into the extent of the seismic hazard at La Crosse, that inquiry will, as it must, be conducted in the context of the appropriateness of the precise remedy prescribed in the show-cause order: the design and installation of a site dewatering system.

[7]See discussion in that order beginning at p. 2.

[8]*Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980).

In other words, no one (least of all the Licensing Board) has suggested that, depending upon what "g" value is eventually assigned to the La Crosse SSE, some other remedy might be prescribed.

The certified question is answered as set forth above.
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
Thomas S. Moore

In the Matter of **Docket No. 50-367**
(Construction Permit Extension)

NORTHERN INDIANA PUBLIC SERVICE COMPANY
(Bailly Generating Station, Nuclear 1)

November 20, 1980

The Appeal Board affirms the Licensing Board's denial in LBP-80-22 of two petitions for intervention in this construction permit extension proceeding.

RULES OF PRACTICE: STANDING TO INTERVENE (CONSTRUCTION PERMIT EXTENSION)

Those persons who, because they reside near the facility site, have the requisite standing to intervene in a construction permit or operting license proceeding, are also possessed of standing to intervene in a construction permit extension proceeding.

RULES OF PRACTICE: LITIGABILITY OF ISSUES

Whether a petitioner for intervention has a cognizable interest in the outcome of a proceeding and whether a particular issue is litigable in that proceeding are quite discrete questions which often will require different answers.

LICENSING BOARDS: JURISDICTION

"It is settled that, in determining whether it is empowered to entertain a particular issue, a licensing board must respect the terms of the notice of hearing published by the Commission for the proceeding in question." *Commonwealth Edison Company* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980).

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (EXCLUSIVITY)

Where petitioners for intervention in a construction permit extension proceeding seek to raise issues with no discernible relationship to that proceeding, petitioners' exclusive remedy is to request a show-cause hearing as provided by 10 CFR 2.206.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (GROUNDS)

The institution of a show-cause proceeding to modify, suspend or revoke a license need not be predicated upon alleged license violations, but rather may be based upon any "facts deemed to be sufficient grounds for the proposed action." 10 CFR 2.202.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (BURDEN OF PROOF)

Under the Atomic Energy Act, the party seeking to build or operate a nuclear reactor bears the burden of proof in any NRC proceeding bearing upon its application to do so, including a show-cause proceeding. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-315, 3 NRC 101, 105 (1976).

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING (APPEAL FROM DIRECTOR'S DENIAL)

The Rules of Practice do not allow a petitioner to appeal a Director's denial of a Section 2.206 request to institute a show-cause proceeding; the denial, however, is subject to Commission *sua sponte* review. 10 CFR 2.206.

APPEARANCES

Ms. Diane B. Cohn, Washington, D.C. (with whom **Mr. William B. Schultz,** Washington, D.C., was on the brief), for the petitioners, City of Gary, Indiana, *et al.*

Mr. William H. Eichhorn, Hammond, Indiana (with whom **Mr. Maurice Axelrad, Ms. Kathleen H. Shea** and **Mr. Steven P. Frantz,** Washington, D.C., were on the brief), for the applicant, Northern Indiana Public Service Company.

Mr. Robert J. Vollen, Chicago, Illinois (with whom **Ms. Jane M. Whicher** and **Messrs. Edward W. Osann, Jr.,** and **Robert L. Graham,** Chicago, Illinois, were on the brief), for the intervenors, Porter County Chapter of the Izaak Walton League of America, Inc., *et al.*

Mr. Steven C. Goldberg for the Nuclear Regulatory Commission staff.

Dr. George Schultz, Michigan City, Indiana, filed a brief as petitioner *pro se.*

Attorney General of Illinois Tyrone C. Fahner and **Assistant Attorneys General Susan N. Sekuler,** and **Mary Jo Murray,** Chicago, Illinois, filed a brief on behalf of the State of Illinois.

DECISION

I.

On May 1, 1974, following the rendition of a Licensing Board initial decision authorizing him to do so,[1] the Director of Regulation of the then

[1]LBP-74-19, 7 AEC 557 (1974). The appellate review of the initial decision was exhaustive. In ALAB-224, 8 AEC 244, *rehearing denied,* ALAB-227, 8 AEC 416 (1974), we affirmed the decision. On judicial review, ALAB-224 was set aside on the ground that it had misapplied the Commission's site acceptability regulations concerned with population density (which are contained in 10 CFR Part 100). *Porter County Chapter of the Izaak Walton League* v. *AEC,* 515 F.2d 513 (7th Cir. 1975). The Supreme Court summarily reversed that determination and remanded the cause to the Seventh Circuit for the consideration of other issues. *Northern Indiana Public Service Company* v. *Walton League,* 423 U.S. 12 (1975). Thereafter the court of appeals affirmed ALAB-224, 533 F.2d 1011, *certiorari denied,* 429 U.S. 945 (1976).
Although over the years there have been a number of other adjudicatory rulings pertaining to the Bailly facility, none is of present relevance.

Atomic Energy Commission[2] issued a permit (CPPR-104) for the construction of the Bailly Generating Station, Nuclear 1. As required by both Section 185 of the Atomic Energy Act, 42 U.S.C. 2235, and the Commission's regulations, 10 CFR 50.55(a), the permit specified, *inter alia,* the date by which construction had to be completed. That date was September 1, 1979.

Section 185 of the Act further provides that, should construction of a nuclear facility not be completed by the prescribed date, "the construction permit shall expire, and all rights thereunder be forfeited, unless *upon good cause shown,* the Commission extends the completion date" (emphasis supplied). This proviso, as well, has been carried over into the regulations. Section 50.55(b) states:

> If the proposed construction or modification of the facility is not completed by the latest completion date, the permit shall expire and all rights thereunder shall be forfeited: *Provided, however,* that upon good cause shown the Commission will extend the completion date for a reasonable period of time. The Commission will recognize, among other things, developmental problems attributable to the experimental nature of the facility or fire, flood, explosion, strike, sabotage, domestic violence, enemy action, an act of the elements, and other acts beyond the control of the permit holder, as a basis for extending the completion date.

The Bailly facility remains today — some six and one-half years after issuance of the permit — in the very incipient stages of construction (less than 1% completed). In recognition of the slow progress of the work, on February 7, 1979 the permit holder (Northern Indiana Public Service Company, hereinafter "applicant") filed an application for an amendment to the permit which would extend the completion date to September 1, 1985. The reasons assigned for the inability to complete construction on schedule were essentially these: (1) the permit had been issued several months later than initially anticipated; and (2) it had proved necessary to halt construction activities at various times as a result of a series of unforeseen intervening events.[3] These reasons were said to constitute the requisite good cause for extending the completion date.

On August 31, 1979, the applicant altered its request to ask that the completion date be extended for yet another 27 months — to December 1, 1987. In jusitification, it pointed to certain regulatory delays and projected

[2]The licensing functions of the Atomic Energy Commission were transferred to the Nuclear Regulatory Commission effective January 19, 1975. When used in connection with events transpiring after that date, the term "Commission" has reference to the NRC.

[3]Among those events were a judicially imposed stay (which was in effect for over two years) and the controversy over the design of the foundation pilings for the facility.

regulatory review schedules which assertedly might still further impede the progress of the construction work.

On November 30, 1979, a notice of opportunity for hearing on the sought permit extension was published. 44 FR 69061. In response to the notice, a number of petitions for leave to intervene and requests for hearing were filed. Among them were those submitted (1) jointly by the City of Gary, Indiana, a labor union and three organizations (hereinafter, the "Gary petitioners"); and (2) by George Schultz.

Both the Gary petitioners and Dr. Schultz indicated in their papers below that they proposed to litigate the same single issue: the suitablity of the Bailly site from the standpoint of the feasibility of providing protection to persons in the general vicinity should there be an accident during plant operation.[4] Opposing the grant of the two petitions, the applicant and the staff insisted, *inter alia,* that site suitability questions were beyond the permissible scope of a construction permit extension proceeding.[5] Both the staff and the applicant relied upon *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2), ALAB-129, 6 AEC 414 (1973), for the proposition that a safety or environmental issue may be raised in such a proceeding only if, unlike here, that issue is associated with the reasons assigned by the applicant for the delay in completing construction. In addition, both of these parties challenged the petitioners' standing to intervene.[6]

In an order entered on August 7, 1980, (LBP-80-22, 12 NRC 191), the Licensing Board denied the two petitions. Although finding that the petitioners had the requisite standing to intervene, the Board determined that their site suitability contentions were not within the reach of this

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[4]As formulated by the Gary petitioners in a February 26, 1980 filing:

> Whether realistic evacuation and emergency plans can be implemented to adequately protect the populations surrounding the proposed site of the Bailly One Nuclear Generating Station in the event of a nuclear accident.

Dr. Schultz, who is employed as a clinical psychologist at the Indiana State Prison in Michigan City (said to be located within ten miles of the Bailly site), is principally concerned regarding the alleged absence of any workable plan for the emergency evacuation of the 1600 inmates of that institution. See, e.g., his filings of December 10, 1979 and February 25, 1980.

[5]Under the Commission's Rules of Practice, a petitioner for intervention must advance at least one acceptable contention. 10 CFR 2.714(b), codifying, *e.g., Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424 (1973), and cases there cited.

[6]As a municipality, the City of Gary (albeit neither the other subscribers to its petition nor Dr. Schultz) might have sought to participate in the proceeding in a non-party capacity. 10 CFR 2.715(c). The City explicitly eschewed the opportunity to do so, electing to seek intervention solely under the provisions of 10 CFR 2.714(a). Even if a governmental body, one seeking to acquire party status pursuant to the terms of Section 2.714(a) must comply with the interest and contentions requirements embodied in that Section. See *Project Management Corp.* (Clinch River Breeder Reactor Plant), ALAB-354, 4 NRC 383, 392-93 (1976).

proceeding. The basis for this conclusion was not agreement with the applicant's and the staff's reading of the *Cook* decision, ALAB-129, *supra;* indeed, the Board at least intimated (12 NRC at 204-206) a view that in appropriate circumstances it might consider issues unrelated to the reasons given for the construction delay. Rather, as the Board saw it (Id. at 211), "[t]o the extent that allegations are made regarding site unsuitability because of the inability to devise satisfactory evacuation plans, the Commission has taken it upon itself to consider all reactors under construction in areas of high population density, which removes this issue from consideration in this proceeding."[7]

The Gary petitioners and Dr. Schultz appeal this ruling under 10 CFR 2.714a. Their appeals are supported by intervenors Porter County Chapter of the Izaak Walton League of America, *et al.* and the State of Illinois. The applicant and the staff urge affirmance. For its part, the applicant not only endorses the Licensing Board's ruling on the petitioners' contentions but, in addition, reasserts its standing argument below.[8]

II.

The applicant's insistence that the petitioners lack standing to intervene rests on the premise that they do not possess an interest which may be affected by the outcome of this proceeding. See Section 189a of the Atomic Energy Act, 42 U.S.C. 2239(a); Section 2.714(a) of the Rules of Practice, 10 CFR 2.714(a). This premise in turn is bottomed upon the applicant's concept of the essential nature of a construction permit extension proceeding. We are told that the "[e]xtension of a construction permit is not

[7]By way of elaboration, the Board had this to say (12 NRC at 207):

> ... Congress and the Commission have indicated their desire not to have new siting requirements applied to facilities authorized before a certain date, except by the Commission on a case-by-case basis: Public Law 96-295 (June 30, 1980), which authorizes the NRC's appropriations for fiscal year 1980 and directs the manner in which they can be spent, provides in Section 108 that regulations establishing demographic requirements for siting promulgated under the authorization shall not apply to any facility for which application for a construction permit was made on or before October 1, 1979; the Commission's May 30, 1980 Order in *Consolidated Edison Company of New York, Inc.* (Indian Point, Unit No. 2) and *Power Authority of the State of New York* (Indian Point, Unit 3), Docket Nos. 50-247 and 50-286, and its advance notice of rule-making on the revision of reactor siting criteria, entitled "Modification of the Policy and Regulatory Practice Governing the Siting of Nuclear Power Reactors," dated July 23, 1980, 45 Fed. Reg. 50350 (July 29, 1980), direct the Staff to review facilities situated in areas of high population density that already have construction permits, and submit a report to the Commission to be considered in the *Commission's* case-by case determination on each site.

[8]It is less clear whether the staff likewise is challenging the Licensing Board's resolution of the standing question. See p. 6 of its brief.

an authorization of construction or operation." Brief, p. 20. Accordingly, "alleged injuries resulting from construction or operation are not injuries resulting from the extension proceeding" and therefore "do not constitute adequate grounds" for standing to intervene. *Id.* at 21. Rather, so the argument goes, standing "must be predicated upon a showing that the extension of construction will produce an additional or incremental injury beyond that previously authorized by the construction permit." *Ibid.* No such claim, of course, has been made by these petitioners; as reflected by their respective contentions, their concern relates to the possible impact of an accident during plant operation upon the health and safety of themselves or those whom they represent.

If the applicant's premise is right, it would appear to follow that there would not be many, if any, persons resident in the general area of a nuclear facility under construction who could obtain intervention in a permit extension proceeding such as the one at bar. The applicant provides no examples of possible "additional or incremental injury beyond that authorized by the construction permit" which might flow from the extension of the completion date specified in the permit. And very few come readily to mind.[9] Thus, what the applicant's position comes down to is that the notice of opportunity for hearing amounted to a tender of public participational rights on terms which almost no individual could meet.

We should, of course, be most cautious in treating Commission notices (whether issued by the Commission itself or its delegate) as being, in practical effect, illusory. And, here, there is no occasion to do so. For it is plain upon analysis that at least one of the links in the applicant's chain of reasoning is fatally flawed.

While it may be true that, strictly speaking, "the extension of a construction permit is not an authorization of construction or operation," it is equally true that, without the extension, the plant can be neither completed nor operated. Once again, as a matter of both statute and regulation, unless the extension is obtained the permit will expire as a matter of law and "all rights thereunder be forfeited." See p. 561 *supra.* It therefore blinks reality to suggest that the extension proceeding is entirely divorced from the authorization of construction activities and eventual plant operation; to the contrary, the outcome of the proceeding will have a significant, and perhaps crucial, bearing upon whether the plant will ever be placed in operation. This being so, it scarcely can be gainsaid that that outcome comes within the sphere of the cognizable interest of those persons

[9]Offhand, we can think of only one: the enlargement of the time interval during which the surrounding community must endure the transitory enviromental and socio-economic effects of the construction work itself. These effects are, however, generally of relatively little significance.

who, because they reside near the facility site, had the requisite standing to intervene in the construction permit proceeding (and will have similar standing with regard to any eventual operating license proceeding).

That is not to say that these petitioners necessarily are entitled to litigate in a permit extension proceeding the question of the suitability of the facility site (from the standpoint of feasibility of emergency protective measures or otherwise). Whether a petitioner for intervention has a cognizable interest in the outcome of a proceeding and whether a particular issue is litigable in that proceeding are quite discrete questions which often will require different answers.[10] We therefore now turn to examine the merits of the competing positions of the parties on the litigability question.

III.

"It is settled that, in determining whether it is empowered to entertain a particular issue, a licensing board must respect the terms of the notice of hearing published by the Commission for the proceeding in question." *Commonwealth Edison Company* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980), and cases there cited. The threshold question thus is whether the notice of opportunity for hearing which triggered this construction permit extension proceeding clothed the Board below with the authority to consider the site suitability issue which the petitioners have sought to raise. Only if that question is answered affirmatively, need we then move to decide whether the Licensing Board correctly determined that developments subsequent to the issuance of the notice reflect a Commission purpose to exclude petitioners' issue from the proceeding.

The notice of opportunity for hearing (see p. 562, *supra*) stated that what was to be decided was "whether, pursuant to 10 CFR 50.55(b), good cause has been shown for extension of the completion date for [the Bailly construction permit] for a resonable period of time, *i.e.*, ... whether, pursuant to 10 CFR 50.55(b), the causes put forward by the [applicant] are among those which the Commission will recognize as bases for extending

[10]There have been numerous NRC licensing proceedings in which a petitioner for intervention has been found to have satisfied the interest requirement of Section 2.714(a) o the Rules of Practice and yet been denied intervention because none of the contentions set forth in the petition was deemed litigable in the proceeding. A very recent example is *Commonwealth Edison Company* (Carroll County Site), ALAB-601, 12 NRC 972 1980). In that early site review proceeding, two individuals and an organization filed a joint intervention petition seeking to raise certain issues having nothing to do with the suitability of the site. As to one of the individuals and the organization, there was no dispute that a sufficient interest in the outcome of the proceeding had been alleged. Nonetheless, we affirmed the denial of the petition even with respect to them on the ground that all of their contentions were beyond the permissible scope of an early site review proceeding (which, we determined, is confined to site suitability questions).

the completion date." If interpreted most literally, this language might be taken as precluding the consideration of anything other than the adequancy of the asserted reasons why the plant was not built on schedule — measured by the examples of sufficient explanations set forth in Section 50.55(b). See p. 561, *supra.*

But such a narrow reading is permissible only if it does not produce an inconsistency between the notice and governing statutory and regulatory provisions. As earlier seen, the requirement that "good cause" be found for a construction permit extention is rooted in Section 185 of the Atomic Energy Act and the Commission's implementing regulation, 10 CFR 50.55(b). What constitute the ingredients of the "good cause" determination — *i.e.,* what are the permissible subjects of inquiry in a proceeding instituted for the purpose of deciding the existence of "good cause" — is therefore a matter of legislative command. Accordingly, the meaning of this legislative term may not be altered by the expedient of a hearing notice; and the issuer of such notice must be presumed to intend that it be read in the light of any previous interpretation of Sections 185 and 50.55(b).[11]

A. As all of the parties to this proceeding seem to acknowledge, the single prior adjudicatory decision explicity dealing with the outer boundaries of the "good cause" inquiry is *Cook,* ALAB-129, *supra.* That case came to us on an appeal from an initial decision of the Licensing Board which determined that "good cause" had been established for the extension of a construction permit. The appellants (intervenors in the proceeding) complained of the failure of the Board below to have considered anything other than the reasons which had been given for the delay in the completion of construction. In this connection, they insisted that the Board should have allowed them to explore, *inter alia,* whether certain design changes made by the applicant would pose a threat to the public health and safety or

[11]In this instance, the notice was issued by L.S. Rubenstein, as Acting Chief of Light Water Reactors Branch 4 in the Division of Project Management, Office of Nuclear Reactor Regulation. At our request, the staff supplied us with what it deemed to be the source of Mr. Rubenstein's delegated authority to issue the notice. See its October 27, 1980 letter to the Secretary to this Board. We thereupon invited the other parties to the appeals to comment on the staff's letter if they so desired. Several of them accepted the invitation.

On a close study of the matter, we have concluded that Mr. Rubenstein issued the notice within the scope of his authority. We are constrained to add, however, that not all of the links in the chain of delegation are as explicit as they both might and should have been. As a general proposition, implied (as opposed to specific) delegations of authority to take certain action invite controversy. If the end result should be a nullification of action taken, severe (and unnecessary) prejudice to the interests of those affected thereby may result. For these reasons, we strongly urge an immediate and careful review of all outstanding delegations of authority within the staff to insure that they leave no room for reasonable doubt respecting who has been vested with what powers.

occasion an adverse environmental impact. (Those design changes were among the causes assigned by the applicant for the delay.)

Characterizing the issue before us as being whether "the Licensing Board [had] correctly delineated the scope of its inquiry,"[12] we looked first to the terms and legislative history of Section 185 of the Act in search of an answer. That search proved in vain; as then did our scrutiny of both Section 50.55(b) of the Commission's regulations and the notice of opportunity for hearing. This prompted the conclusion that the "question of the precise content of a Section 185 'good cause' inquiry is entirely *res nova.*" ALAB-129, 6 AEC at 418-20.

Proceeding on that basis, we undertook to consider the widely divergent views of the parties. For their part, the applicant and the staff had urged that the Licensing Board had correctly held that all that it could decide was whether there was a sufficient showing of "good cause" for the failure to complete construction on schedule; as they saw it, a Board may never look beyond the sufficiency of the assigned reasons for the delay. On the other hand, the intervenors had maintained that the "good cause" inquiry must embrace as well every safety or environmental issue which the need for the extension might suggest. *Id.* at 418-20.

We found neither of these lines of argument persuasive. Each "introduce[d] an unwarranted element of rigidity" into a determination which "obviously is dependent upon the facts of [the particular] case" and, accordingly, should be based upon the consideration of those factors suggested by "the totality of the circumstances" confronting the adjudicator. One essential vice of the thesis of the applicant and the staff was that it could lead to a finding that "good cause" existed to extend the deadline for plant completion even if one or more of the reasons assigned for the delay "cast serious doubt upon the ability of the applicant to construct a safe facility" — an unreasonable result. *Id.* at 420. The intervenors' proposal likewise did not comport with "common sense":

> The fundamental purpose of that hearing is, after all, not to determine the safety or environmental aspects of the reactor in question. And, in this particular case, the same Licensing Board which conducted this hearing is on the threshold of commencing the hearing which will encompass both the Appendix D construction permit environmental review and the matter of the issuance of facility operating licenses. Especially since intervenors will be a full participant in that hearing, it is not readily apparent why a "good cause" hearing — addressed to whether a construction permit should be extended — must necessarily reach issues which can be there considered and decided.[13]

[12] 6 AEC at 416.

[13] As early noted in the *Cook* decision, the two-unit facility had received its construction permits in 1969 without an environmental review. Under later-promulgated Commission

FOOTNOTE CONTINUED ON NEXT PAGE

Ibid.

Where this led was to the determination that the intervenors could litigate only those safety or environmental issues which both (1) arose from the reasons assigned in justification of the request for a construction permit extension; and (2) could not, consistent with the protection of the interests of the intervenors or the public interest, "appropriately abide the event of the environmental review — facility operating license hearing." *Ibid.* Applying this standard, we went on to decide that each of the issues which the intervenors had sought to inject into the proceeding had been properly excluded by the Licensing Board. *Id.* at 420-22.

B. Although all of the parties to the appeals at bar look to the *Cook* decision for guidance, they derive quite different messages from it.

1. The applicant and the staff take what was there said as (in the applicant's words, Br. pp. 8-9) "clearly indicat[ing] that any consideration of safety in an extension proceeding is limited to the 'reasons assigned for extension' ". Both of these parties also insist that any other conclusion would undermine the two-step licensing process (construction permit and operating license) established by Section 185 of the Act. To quote the applicant once again (Br. p. 11), "[t]he Atomic Energy Act does not require that every safety-related issue be resolved prior to the operating license proceeding. See *Power Resources Development Company* v. *International Union of Electrical Workers,* 367 U.S. 396 (1961). ...[D]evelopments which occur after the issuance of the construction permit are analyzed at the operating license stage and there is no requirement that an adjudicatory proceeding consider these issues as they arise."

Beyond those considerations, our attention is directed to the fact that, pursuant to 10 CFR. 2.206, the Director of Nuclear Reactor Regulation may be asked at any time to institute under 10 CFR 2.202 a show-cause proceeding looking to the possible modification, suspension or revocation of a construction permit. In this connection, the staff advises us that the Director now has before him such a request which was founded on the very claim of site unsuitability which petitioners press here. The request was initially filed by the State of Illinois; it has now been joined in by the Gary petitioners. We were told at oral argument by staff counsel that the Director will act on it by the end of this year (App. Tr. 45).

2. The petitioners, and those supporting their position, focus their spotlight upon the language in *Cook* to the effect that the factors to be taken into account in making a "good cause" determination should be influenced by the "totality of the circumstances involved" and considerations of the

FOOTNOTE CONTINUED FROM PREVIOUS PAGE
regulations, it was slated to receive such a review in conjuction with the operating license proceeding. See 6 AEC at 414-15.

protection of public and private interests. See p. 567, *supra.* As they see it, the pertinent circumstances of the present case are not at all analogous to those which were before us in *Cook* and that a "common sense" approach here precludes the exclusion of their contentions simply because unrelated to the reasons assigned for the delay in construction completion. In this regard, they emphasize that, unlike the *Cook* intervenors, they are seeking to raise a serious site suitability issue in the context of a facility as to which actual construction has barely begun. They assert (Gary petitioners' Br. p. 14) that "[i]t simply is contrary to all notions of protection of the public interest to argue...that siting and emergency planning factors at Bailly should be fully considered only after the entire plant has been built." If left to the operating licensing proceeding, they predict, those factors will never receive proper attention; "after full resources are committed to finishing construction at the present site, the Bailly plant will operate regardless of the risk to surrounding populations." *Ibid.*

Nor do petitioners perceive the Section 2.206 remedy to be an adequate substitute for the scrutiny of their site suitability issue in this proceeding. This is principally because that Section leaves it to the discretion of the Director whether to grant or deny a request that a show-cause proceeding be instituted. Further, although "the Commission may on its own motion review" a decision which denies such a request "to determine if the Director has abused his discretion," no petition asking that it undertake review will be entertained. 10 CFR 2.206(c).

C. 1. We can agree with the petitioners up to a point. To begin with, this case does differ from *Cook* in the respects which they note. In *Cook*, as we have seen, the issues sought to be injected into the permit extension proceeding had nothing at all to do with the suitability of the site for a nuclear facility. Here, in sharp contrast, petitioners' contentions not merely are addressed to site suitability but, as well, are raised in the setting of an essentially unbuilt plant.

It is true, of course, that the matter of the suitability of the Bailly site from a population density standpoint was litigated extensively in the construction permit proceeding, and that its resolution in favor of the applicant ultimately survived judicial review which reached the Supreme Court level. See fn. 1, *supra.* The petitioners insist, however, that more recent developments have put into doubt the correctness of the result in that proceeding. Although that may or may not be true, for present purposes we must assume that it is. *Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973).

This being so, we are unimpressed with the argument of the applicant and the staff that petitioners can appropriately be told to withhold their site

suitability contentions until the operating license stage has arrived. It does no disservice to the concept of a two-step licensing process to conclude that, in circumstances such as those at bar, that suggestion offends reason. Manifestly, if there currently exists substantial cause to believe that the Bailly site is unacceptable, now is the time to explore the matter further — rather than years hence when, following a substantial additional monetary investment, the facility is nearing completion at that site.

In short, were the operating license proceeding the only alternative vehicle for the airing of petitioners' concerns, we would encounter great difficulty in erecting a barrier, on the strength of anything said in *Cook*, to the exploration of those concerns in the present proceeding. To be sure, petitioners do not satisfy the precise test employed in that decision; to repeat, their site suitability contentions are not rooted in the reasons assigned for the delay in completing construction. But that test was tailored to the particular facts of that case. Neither in terms nor by necessary implication was it offered as an inflexible mold for passing judgment on the litigability in a permit extention proceeding of every variety of contention in every conceivable setting. Indeed, that it was not intended to have any such effect is indicated by the importance we attached to looking at the "totality of the circumstances" and invoking a "common sense" approach in determining the scope of the "good cause" inquiry in the specific case. See 6 AEC at 620.

2. At this juncture, however, our agreement with the petitioners comes to an end. In our view, the eventual operating license proceeding cannot be said to provide the only other viable forum for the ventilation of petitioners' issue. To the contrary, Section 2.206 of the Rules of Practice provides an explicit, adequate and immediately available remedy to those who believe there to be newly arising cause why plant construction should be halted well before the operating license stage is reached. We are equally persuaded that, where that cause has no discernible relationship to any other pending proceeding involving the same facility (*e.g.*, one concerned with permit extension), the Section 2.206 remedy must be regarded as exclusive.

a. In authorizing "any person" to file a request for the institution of a show-cause proceeding under Section 2.202 "to modify, suspend, or revoke a license or for such other action as may be proper," Section 2.206 does not place any limitations upon either the timing of the request or the grounds which may be assigned for seeking such relief. And, although at one time the institution of a show-cause proceeding had to be predicated upon alleged license violations,[14] Section 2.202 was broadened in 1963.[15] As it

[14]See 27 F.R. 377, 380 (January 13, 1962).
[15]See 28 F.R. 10151, 10153 (September 17, 1963).

reads today, the Section permits the Director of Nuclear Reactor Regulation to base the proceeding upon any "facts deemed to be sufficient grounds for the proposed action" (*e.g.*, license modification, suspension or revocation).

Thus, as no one appears to dispute, the petitioners were authorized by Section 2.206 to request, and the Director is authorized by Section 2.202 to initiate, a show-cause proceeding to examine the very site suitability matter which is sought to be injected into the permit extension proceeding. And it is equally manifest that, should a hearing be ordered on such a request, the participational rights of the parties to it will be no different than in any other type of adjudicatory proceeding (including that now before us). The same may be said with regard to the allocation of the burden of persuasion: it is settled "that the Atomic Energy Act intends the party seeking to build or operate a nuclear reactor to bear the burden of proof in any Commission proceeding bearing on its application to do so, including a 'show cause' proceeding." *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-315, 3 NRC 101, 105 (1976).

As previously noted (p. 568, *supra*), the Director will act shortly upon the pending Section 2.206 request, which both has the Gary petitioners' endorsement and parallels their site suitability contention. In the circumstances, it obviously is neither appropriate nor possible for us to forecast what result will obtain; needless to say, that will depend upon the Director's weighing of all relevant factors in light of information in his possession which is not within our ken. We are prepared, however, to record our confidence that, whatever the outcome it will be preceded by a careful and responsible evaluation of the claims underlying the request. The petitioners have supplied no basis to presume that the Director is any less sensitive than are they to the undesirability of allowing construction of a nuclear facility to proceed on a site in the teeth of substantial cause to believe that that site — sooner or later — will have to be declared unsuitable from a safety standpoint.

Should the Director find the Section 2.206 request lacking in merit, he will be obliged to set forth in writing his reasons for that finding. Section 2.206(b). As petitioners emphasize, if dissatisfied with those reasons they will have to rely upon the Commission to undertake review *sua sponte*. Although the Commission might have entitled those adversely affected by a Director's decision either to take an appeal from it or seek discretionary review, it chose to do neither. The compelled inference is that, after mature consideration, the Commission concluded that in circumstances where (as here) a person deems there to be warrant for taking action against a construction permit or other license, he should be given the opportunity to

press his claim before the Director without further avenues of redress as a matter of right.

Although petitioners may not concur in that conclusion, it must be respected. Moreover, contrary to their seeming belief, we know of no authority — and Petitioners point to none — for the proposition that the sufficiency of an available remedy rests upon the extent, if any, to which the determination of the initial decisionmaker is subject to further challenge on a higher level.

It might be added in this connection that, in order to pass an informed judgment on whether warrant exists to review a particular denial of a Section 2.206 request on its own motion, the Commission must neccessarily examine the grounds assigned by the Director — and, in most cases at least, the underlying papers as well.[16] We scarely would be justified in presuming that this task is not faithfully discharged. Further, there is every reason to think that, were the Director to turn down the Section 2.206 request here, that action would receive especially close scrutiny. The Bailly facility has, after all, been the subject of an exceptional amount of attention over the years — much of which has been directed to the suitability of the site given the population density of the surrounding area. This is not to say that the Commission would — or indeed should — overturn a Director's denial here. Once again, whether petitioners' claims are colorable enough to justify adjudication in a formal proceeding is not a fit subject for our conjecture. All that we suggest is that those claims undoubtedly will receive the measure of consideration due them in the event that the Director's action calls upon the Commission to look at the matter itself.

b. It does not necessarily follow from its availability that the Section 2.206 remedy is invariably exclusive. In fact, *Cook* teaches that it is not. The issues which the intervenors there sought to litigate in the permit extension proceeding could equally have been raised by way of a request for a show-cause order. Yet, that factor played no part in our decision. Rather, as previously seen, we took the controlling consideration to be whether the then upcoming hearing in the environmental review-operating license proceeding was a suitable forum for the ventilation of the intervenors' issues.[17]

Once again, however, each of those issues was directly tied to the reasons why construction could not be completed on schedule. There was

[16]Our understanding of Commission practice is that such denials are treated in much the same fashion as are Appeal Board decisions which are before the Commission for possible *sua sponte* review under 10 CFR 2.786 (a) — although the standard for undertaking review differs in the two instances.

[17]The Section 2.206 remedy received but fleeting mention, and then in a quite different context. See 6 AEC at 420.

consequently no occasion in *Cook* to address, let alone decide, whether the Section 2.206 remedy is exclusive in circumstances where, as here, the supervening developments alleged to warrant termination of reactor construction concededly have nothing whatever to do with the need for the permit extension — and thus cannot be said to evolve naturally from the extension application which is the source of the proceeding.

We have been provided no compelling reason why it is not totally appropriate in such circumstances to leave petitioners' concerns for possible consideration in a show-cause proceeding. Indeed, that conclusion comports with the "common sense" approach championed in *Cook*. As there observed (see p. 567, *supra*), a permit extension proceeding is not convened for the purpose of conducting an open-ended inquiry into the safety and environmental aspects of reactor construction and operation. Yet that is precisely what the proceeding would become were an open invitation given to those in petitioners' situation to freight it unnecessarily with matters far removed from those events which led to its commencement.[18]

For the reasons above stated, the denial of the intervention petitions of the City of Gary, Indiana, *et al.* and George Schultz is *affirmed.*

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

[18]We neither reach nor intimate any opinion regarding the basis of decision below on the intervention question. See p. 563, *supra*. Nor do we pause to examine whether the considerations which persuaded the Licensing Board that the petitioners' contentions were not litigable in this proceeding do or do not come into play insofar as the determination of the Section 2.206 request is concerned. That is for the Director and the Commission to decide. It is enough to observe that, if those considerations in and of themselves preclude the present examination of emergency planning in a slow-cause proceeding, it would appear almost inevitably to follow that they would likewise bar such examination in this permit extension proceeding.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of **Docket No. 50-263**

NORTHERN STATES POWER COMPANY
(Monticello Nuclear Generating Plant, Unit 1) **November 24, 1980**

Upon consideration of the staff's determinations regarding unresolved generic safety issues which might affect safe operation of the Monticello facility, the Appeal Board terminates its *sua sponte* review and affirms the Licensing Board's order dismissing the proceeding.

ADJUDICATORY BOARDS: STANDARD OF REVIEW

An adjudicatory board's examination of unresolved generic safety issues not put into controversy by the parties is necessarily limited to whether the staff's approach is plausible and the explanations given in support of continued safe operation of the facility are sufficient on their face.

APPEARANCES

Mr. Richard G. Bachmann for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

This proceeding was instituted to consider Northern States Power Company's application to convert its provisional operating license for the Monticello Nuclear Generating Plant to a full-term operating license. A year ago, all intervenors having withdrawn in the meantime, the Licensing

Board dismissed the proceeding. In connection with that dismissal, however, the Board made several substantive determinations on an issue which it had raised on its own initiative.

For reasons stated elsewhere,[1] we reviewed those determinations *sua sponte*. In ALAB-611, 12 NRC 301, 308-309 (September 3, 1980), we announced that that review had disclosed no basis to disagree with the conclusions reached below. We further there decided, however, that we were not then in a position to affirm the Licensing Board's ultimate disposition of the proceeding. Before that could be done, the NRC staff would have to supplement the record with regard to "those unresolved generic safety issues it has brought to light over the years which might affect safe operation of the Monticello facility."[2] *Id.* at 311-312. More specifically, we ordered the staff "to focus its attention on those Category A Tasks identified in NUREG-0510 as unresolved safety issues which could affect the Monticello facility" and, in addition, to "include in its submission any issues from Category B Tasks listed in NUREG-0510 which...if left unresolved, could present potentially serious safety or environmental concerns." *Id.* at 312.[3]

1. We now have in hand the staff's response to ALAB-611, filed on October 15, 1980. It takes the form of a 36 page document, accompanied by the affidavit of the NRC project manager for Monticello. In the affidavit, the project manager attests that the document was prepared under his "direct supervision and control" and that its contents are "true and accurate to the best of [his] knowledge."

In an introductory section, the staff quotes (at p. 4) the definition of an "unresolved safety issue" contained in NUREG-0510:

> a matter affecting a number of nuclear power plants that poses important questions concerning the adequacy of existing safety requirements for which a final resolution has not yet been developed and that involves conditions not likely to be acceptable over the lifetime of the plants it affects.

Applying this definition, in NUREG-0510 the staff identified 17 such issues which were addressed by 22 so-called "tasks" — *i.e.*, specific programs designed to deal with some or all aspects of a particular issue.

The introductory statement goes on to note that, of those 22 tasks, for one reason or another seven have no application to boiling water reactors

[1] See *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687, 689-92 (1979).

[2] Monticello had received its provisional operating license in 1971. ALAB-611, 12 NRC at 363, fn. 2.

[3] NUREG-0510, entitled "Identification of Unresolved Safety Issues Relating to Nuclear Power Plants," was issued in January 1979.

which use a Mark I containment design (*e.g.*, Monticello). In the body of its submission (Section I), the staff discusses each of the remaining 15 tasks. With respect to those not as yet completed insofar as Monticello is concerned, the staff also explains why it believes that continued operation of that facility nonetheless will not present an undue risk to the public health and safety.

In Section II, the staff proceeds to focus upon seven "additional items" which were not treated in NUREG-0510 as "unresolved safety issues" but, in the staff's view, "may have an impact on the Monticello facility" and "if left unresolved, could present potentially serious safety or environmental concerns." See ALAB-611, *supra,* 12 NRC at 312. For each of these items, as well, the relevant task was described and a justification for continued plant operation provided.

2. As reflected in ALAB-611, 12 NRC at 310, the genesis of our insistence that the record here be supplemented on the matter of unresolved generic safety issues was two prior decisions of this Board: *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977), and *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978). In both of those decisions, as also noted in ALAB-611, we endeavored to make clear the necessarily limited scope of the examination *sua sponte* of such evidence (*i.e.*, in the absence of a contest). *River Bend* described the adjudicatory board's function as being simply to determine "whether the staff review satisfactorily has come to grips with any unresolved generic safety problems which might have an impact upon operation of the nuclear facility under consideration." 6 NRC at 774-75. To this end, sufficient information must be supplied to enable the board and the public to apprehend "the staff's perception of the nature and extent of the relationship between" each such problem and reactor. *Id.* at 775. We were even more specific on the subject in *North Anna* (which, in common with the case at bar, involved a review *sua sponte* of the licensing board action on an operating license application):

> In view of the limitations imposed by regulation, and the fact that our review was necessarily unaided by any of the parties, we have not probed deeply into the substance of the reasons put forth by the staff for allowing operation to go forward. Rather, we have only looked to see whether the generic safety issues have been taken into account in a manner that is at least plausible and that, if proven to be of substance, would be adequate to justify operation. Scrutiny of the substance of particular explanations will have to await a contested proceeding.

8 NRC at 248, fn. 7.

Our scrutiny of the content of the October 15 submission has been undertaken with this standard in mind. That is to say, no endeavor has been made to satisfy ourselves that the staff's approach to each identified task corresponds exactly with what we would have done if in the shoes of the Director of Nuclear Reactor Regulation. Rather, we have limited our consideration to the plausibility of the approach and sufficiency on their face of the explanations given for the conclusions reached by the staff respecting the continued safe operation of the Monticello facility.

Applying this test, we find no reason to disturb or to probe further any of the determinations made by the staff. We are persuaded that it "satisfactorily has come to grips" with the various unresolved generic problems it has indicated might affect Monticello operation. Likewise, the staff has provided an at least reasonable foundation for its several conclusions.

We thus are now in a position to terminate our review of the Licensing Board's order dismissing this proceeding. That order is hereby *affirmed.*

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 PANEL

Alan S. Rosenthal, Chairman

In the Matter of **Docket No. 50-445 OL**
50-446 OL

TEXAS UTILITIES GENERATING COMPANY, *et al.*
(Comanche Peak Steam Electric Station, Units 1 and 2)

November 24, 1980

The Appeal Panel Chairman summarily dismisses as interlocutory the appeal of an intervention petitioner, admitted by the Licensing Board as a party to the proceeding, from the Board's rejection of one of the contentions advanced in connection with its intervention petition.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Commission's Rules of Practice prohibit a person from taking an interlocutory appeal from an order entered on his intervention petition unless that order has the effect of denying the petition in its entirety. 10 CFR 2.714a; *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-585, 11 NRC 469 (1980), and ALAB-586, 11 NRC 472 (1980).

APPEARANCES

Mr. Richard L. Fouke, Arlington, Texas, for the intervenor, Citizens for Fair Utility Regulation.

MEMORANDUM AND ORDER

Citizens for Fair Utility Regulation (CFUR) has been admitted as an intervenor in this operating license proceeding involving the Comanche

Peak nuclear facility. Although several of its contentions were accepted by the Licensing Board as litigable, others were rejected.

CFUR now seeks to appeal the rejection of its Contention 4B. The appeal must be summarily dismissed on the ground that it is unauthorized by the Commission's Rules of Practice. In this regard, it is enough to repeat what was said last July in response to the like endeavor of another intervenor in this proceeding to appeal from the rejection of certain of its contentions:

> Those Rules do not permit a person to take an interlocutory appeal from an order entered on his intervention petition unless that order has the effect of denying the petition in its entirety. 10 CFR 2.714a; *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-329, 3 NRC 607, 610 (1976), and cases there cited.

ALAB-599, 12 NRC 955 (July 3, 1980), quoting from *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-585, 11 NRC 469, 470 (1980), and ALAB-586, 11 NRC 472, 473 (1980).[1]

Appeal *dismissed.*
It is so ORDERED.

FOR THE APPEAL PANEL
CHAIRMAN

C. Jean Bishop
Secretary to the Appeal Panel

This action was taken by the Appeal Panel Chairman under the authority of 10 CFR 2.787(b).

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[1]As also pointed out in ALAB-599 (at fn. 1), an intervenor in CFUR's situation must await the rendition of the Licensing Board's initial decision. If dissatisfied with that decision, an appeal can be taken from it under 10 CFR 2.762(a). One of the matters that can be raised on such an appeal is whether the Licensing Board erred in rejecting one or more of the appellant's contentions.

Cite as 12 NRC 581 (1980) **LBP-80-29**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Herbert Grossman, Esquire, Chairman
Dr. Richard F. Cole
Dr. J. Venn Leeds

In the Matter of **Docket No. 50-266-CO**
(Modification of License)

WISCONSIN ELECTRIC POWER COMPANY
(Point Beach Nuclear Plant, Unit 1) **November 4, 1980**

The Licensing Board denies: (1) a request for a hearing on a confirmatory order issued by the Director of Nuclear Reactor Regulation placing certain limitative conditions on the operation of the facility, where the Commission expressly limited litigation to the issues identified in the order and the petitioner failed to raise any contentions within the scope of the identified issues; and (2) alternative requests that a related question be certified to the Commission or that petitioners be permitted to file an interlocutory appeal directly to the Commission.

ORDER DENYING HEARING

The Board has before it a request for hearing on a confirmatory order amending an operating license by imposing certain limiting conditions on the operations of the facility. The issue is whether a hearing should be granted where the petitioner contends that the confirmatory order did not go far enough to remedy the safety defects, but does not raise any litigable issue that the remedies imposed would themselves cause injury to petitioner's interests.

For the reasons discussed below, we deny the request for hearing.

STATEMENT

On November 30, 1979, the Director of the Office of Nuclear Reactor Regulation issued a Confirmatory Order amending "Facility Operating License No. DPR-24" which permitted Wisconsin Electric Power Company (the Licensee) to operate Point Beach Nuclear Plant, Unit 1 (the facility) only under certain limiting conditions. 44 FR 70608 (December 7, 1979). The Order indicated that these additional operating conditions were required to assure the safe operation of the facility because of a finding of extensive general intergranular attack and caustic stress corrosion cracking on certain of the external surfaces of the steam generator tubes.[1] It permitted any person whose interest might be affected by the Order to request, within 20 days, a hearing limited to the issues of whether the facts stated in Sections II and III of the Order (relating to the necessity for the additional operating conditions, the imposition of the additional operating conditions, and Licensee's agreement to these additional conditions) were correct, and whether the Order should be sustained.

By letter dated December 17, 1979, Wisconsin's Environmental Decade, Inc. ("Decade") requested a hearing. The request was one in a series of filings, meetings, Commission briefings and orders related to question of steam generator tube integrity at Point Beach. The Licensee filed a response in opposition to the request for hearing on December 27, 1979.

Subsequently, on January 3, 1980, the Director of Nuclear Reactor Regulation issued an Order Modifying Confirmatory Order of November 30, 1979, by imposing additional limiting conditions reducing the operating pressure in the primary system. 45 FR 2452 (January 11, 1980). The Modification Order was not served on Decade, which did not receive a copy until its time for filing a request for hearing had expired. Tr. 17-18, 26.[2]

On February 11, 1980, the Staff filed a motion to deny Decade's request for a hearing on the November 29 Confirmatory Order. Decade filed a reply to the Staff's motion on February 22, 1980. The Confirmatory Order was again modifed on April 4, 1980, and Decade requested a hearing

[1]The additional operating conditions, for the most part, related to certain tests to be performed by Licensee and certain measures to be taken, such as plant shutdown and tube plugging, depending on the results of the testing. Accompanying the Confirmatory Order was a Safety Evaluation Report, also dated November 30, 1979, covering those operating conditions and including a favorable mention of Licensee's proposed reduction in the operating temperature of the hot leg of the reactor to retard leakage.

[2]"Tr." references are to the transcript of the July 30, 1980 prehearing conference.

on that Modifying Order, as it had on the Confirmatory Order of November 30, 1979.[3]

By Order dated May 12, 1980, the Commission ruled on Decade's request for a hearing on the November 30, 1979 Confirmatory Order. It directed the Chairman of the Atomic Safety and Licensing Board Panel to empanel a Board to determine whether a hearing is required based on the principles set forth in the Commission's Memorandum and Order in *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980). It further ordered that, if the Board determined that a hearing is required, the Board conduct an adjudicatory hearing solely on the issues identified in the Confirmatory Order.[4]

On May 15, 1980, this Board was designated to rule upon Decade's request for hearing and to preside over the proceeding in the event that a hearing were ordered. It issued an order scheduling a prehearing conference for the purpose of considering all requests for hearings in light of the Commission's May 12, 1980 Order, discuss specific issues that might be considered at an evidentiary hearing, and consider possible further scheduling in the proceeding.[5] The Order provided for Decade's filing a supplement to its petition no later than 15 days prior to the conference to include a list of specific contentions sought to be litigated in the proceeding. The Licensee and Staff were requested to file responses to any supplemental petition prior to the conference.

In compliance with the Board's Order, Decade filed on July 15, 1980 a document entitled "Petitioner's Preliminary Contentions Made Prior to Discovery and Cross-examination." An examination of that document and Decade's request for hearing on the November 30, 1979 Confirmatory Order, filed on December 17, 1979, reveals that all of the issues raised relate to the alleged inadequacy of the remedies proposed in the Order. Decade readily admits (Tr. 34-35, 82) that it has raised only issues for litigation to the effect that the Confirmatory Order did not go far enough in remedying the steam generator tube degradation problems and that more drastic remedies are necessary. Because of the apparently critical absence (under

[3]Although not part of the filings in this proceeding, Decade also filed a petition for entry of an order to show cause to enjoin Licensee from reopening the facility at the end of its refueling cycle then in progress, dated November 14, 1979, and a similar petition for order to show cause, dated March 14, 1980. These petitions were denied by Director's Decisions under 10 CFR 2.206 dated November 30, 1979 and June 10, 1980, respectively.

[4]Although the Commission's May 12, 1980 Order noted (p. 1) that the Commission had before it a request for hearing on two orders (presumably the November 30, 1979 and April 4, 1980 Orders), it referred to the Board (p. 2) only the request on the November 30, 1979 Order.

[5]The prehearing was held at 9:30 a.m. on July 30, 1980 at the Carlton Motel, 1515 Memorial Drive, Two Rivers, Wisconsin 54241

Marble Hill, supra, discussed below) in Decade's pleadings of any litigable contentions alleging injury from the remedies imposed by the Director's Orders, and Decade's concessions to that effect, it was not considered necessary at the prehearing conference to discuss the particulars of each contention. Tr. 91.

However, in its February 22, 1980 reply to the Staff's motion in opposition to Decade's request for hearing, Decade raised an issue — not to be litigated, but for the purpose of supporting its standing in this proceeding — that alleges potential harm from one of the operating conditions resulting from the Confirmatory Order. In lowering the operating temperature of the hot leg of the reactor, as proposed by Licensee and incorporated in the Safety Evaluation Report of November 30, 1979 accompanying the Confirmatory Order, the steam pressure was reduced, increasing the differential pressure between the primary system and the steam pressure, and increasing the stress across the tubes. This aggravated the leakage problems and required a compensating reduction in primary pressure, which Licensee instituted and which was incorporated as an additional operating condition in the January 3, 1980 Modifying Order. However, this reduction in primary pressure adversely affected the departure from nucleate boiling ratio (DNBR), which is the potential harm alleged by Decade, even though the Staff and Licensee insist (Tr. 40, 85-86; Safety Evaluation Report, January 3, 1980) that the DNBR margin is well above the safety limits because of certain compensating measures prescribed in the January 3, 1980 Order. Decade confirms (Tr. 16-17, 34-35) that it does not intend to litigate this issue but raises it merely to support its standing to intervene by showing a potential injury from the Confirmatory Order itself, and not merely from the proposed remedies' not going far enough to alleviate the safety problems.

At the time of the prehearing conference, Decade had not yet filed an indication that any of its members resided in the immediate geographic area of the facility and had authorized Decade to represent him in the proceeding. Decade agreed to file the requisite statement within a week after the conference, and Licensee indicated it would interpose no objection on grounds of late filing. Tr. 92-93. Affidavits complying with the requirements of representation and authorization were duly filed on August 1, 1980, and the Board accepts them as complying with the requirements of the regulations.

Although Decade was the sole petitioner to file a request for hearing, at the prehearing conference a representative from the State of Wisconsin appeared and filed with the Board a petition for leave to participate as an Interested State pursuant to 10 CFR 2.715(c). Tr. 7. It further requested (Tr. 7-8; Petition, p. 1) that the Board grant the hearing requested by Decade or,

in the alternative, certify the matter to the Commission for another decision, but took no position with regard to the merits of Decade's contention and did not want its petition considered as filed by a party under 10 CFR 2.714. Neither the Licensee (Tr. 9) nor the Staff (Staff Response to Petition of the State of Wisconsin, August 13, 1980) objects to Wisconsin's appearing under 2.715(c) if a hearing is granted in this proceeding. But, like the Board, they do not consider Wisconsin's petition as initiating a request for hearing. Since we are denying Decade's petition for the reasons discussed below, Wisconsin's petition is also being denied.

Decade's Position

In support of its position that a hearing should be held, Decade argues that *Marble Hill, supra,* and the Commission's May 12, 1980 Order in this case were incorrectly decided under 189 of the Atomic Energy Act and the case law interpreting "interest" in determining standing, which Decade insists should encompass injury that may result from inaction of the agency (Tr. 11, 27); that even if *Marble Hill* were correct, it should not apply to this proceeding because the Confirmatory Order of November 30, 1979 permitted a resumption of operations when the plant had been shut down under verbal orders from the NRC not to reopen the plant without written authorization (Tr. 12); that the Confirmatory Order is not an enforcement order as in *Marble Hill* to which the Commission's narrow interpretation of standing applies (Tr. 26-27, 74-75); that the November 30 Order did cause Decade an injury in fact in that it resulted in a change to a lower pressure in the primary system which adversely affected the departure from nucleate boiling ratio, this lower pressure being reflected in the January 3, 1980 Modification of Confirmatory Order (Decade Ans. to Staff Opp, to Hearing, February 22, 1980, pp. 3-4; Tr. 13, 15-16, 60-61); and that, even if a hearing is not required as a matter of right, the facts compel such a hearing as a matter of discretion to answer the major unresolved safety questions regarding the tube degradation problem (Decade Ans. to Staff, February 22, 1980, p.6). The latter request, for a discretionary hearing, was directed to the Commission prior to its May 12, 1980 Order, not the Board. However, the State of Wisconsin supports (Tr. 55-57) the right of the Board to offer a discretionary hearing once the Board determines that Decade has standing, as Wisconsin insists it has on the basis of the safety issue arising from the decrease in pressure that Decade has raised for standing purposes.

The Licensee's and Staff's Position

The Licensee (Licensee's Response to Decade Contentions, July 28, 1980, pp. 4-7) and Staff (Staff Motion to Commission, February 11, 1980, pp. 4-7; Staff Statement on Standing and Supplemental Petition, July 25,

1980, pp. 3-11) challenge Decade's standing on the basis of the *Marble Hill* rationale that only an injury that arises from the conditions of the Order and not from the allegation that the Order does not go far enough, can serve as a foundation for standing. Decade does not dispute (Tr. 34-35) that the issues raised in its contentions are based upon the Confirmatory Order's not going far enough, rather than that the restrictions imposed in themselves cause harm. The possible injury from the reduction in pressure's adversely affecting the departure from nucleate boiling ratio was conceded by Decade (Tr. 16-17) as raised only to show possible injury to supply a foundation for standing, but not as a litigable issue in the proceeding. Decade insists (Tr. 62, 75) that, although the reduced pressure issue is a legitimate one, Decade cannot raise it as a contention due to a lack of resources which requires it to concentrate only on its fundamental concerns regarding the tube degradation problems.

Licensee confesses confusion (Tr. 35-37) over Decade's assertion of the reduction in pressure issue for purposes of standing but not as a litigable issue in the proceeding, a litigating posture which Licensee considers frivolous (Tr. 63-64). The Licensee and Staff further contend that Decade's reliance upon that reduced pressure issue is misdirected because the decrease in pressure was not a direct result of the November 30 Confirmatory Order, but only incidental to it; it was directly related only to the January 3, 1980 Modification Order on which Decade did not file any petition, and, in any event, the reduction in pressure was a self-imposed restriction by the Licensee within already authorized limits and not compelled by the Staff. Tr. 36, 38, 40, 52-53, 73-74, 86-87.

In their view (Tr. 30-31, 38, 44-47) an enforcement-type proceeding such as a confirmatory order proceeding is not the proper forum for a petitioner to assert that the Order does not go far enough. A petitioner making that contention has recourse to the Commission via a 10 CFR 2.206 petition and, if it is denied by the Director and Commission, has recourse to the courts. A Notice of Opportunity for Hearing on a confirmatory order is designed for the Licensee or someone else aggrieved by the action. It should not be utilized to "force-fit" into the proceeding a petitioner who contends the Order does not go far enough. The proper recourse for such a petitioner is either a 2.206 petition or a generic rulemaking proceeding, which Staff contends (Tr. 83-84) would be the proper forum for a hearing on the steam generator tube problems raised by Decade.

The Licensee (Tr. 31, 87) and Staff (Tr. 51) deny Decade's contention that a confirmatory order is not an enforcement order to which the limitations on standing enunciated in *Marble Hill* apply. To them, revocations, suspensions, and modifications of licensees, including those initiated by the Licensee and confirmed by order of the Commission, are all

types of enforcement proceedings in which the alleged injury to the petitioner must arise from the actions taken, not from the allegation that the Order should have gone further.

OPINION

The November 30, 1979 Confirmatory Order

We are not unimpressed with Decade's position that "standing" has not been limited by the courts to allegations of injury in fact resulting from the action complained of, but also includes allegations of agency inaction in the subject area. Nor do we consider frivolous, Decade's raising the prospect of an injury in fact from an issue it raises for purposes of standing, which it does not desire to litigate. We note that petitioners have been given standing in the past on the basis of allegations of injuries that were unconnected to contentions they raised. *See, e.g., Gulf States Utility Company* (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 226 fn. 10 (1974), where a petitioner was given standing on the basis of an alleged injury from the consequences of a Class 9 accident although the contentions admitted by the Licensing Board were unrelated to the consequences of any kind of accident.

Nor, for that matter, do we accept without question the proposition put forward by the Staff and Licensee that an incidental result of a confirmatory order (operation of the primary system at a reduced pressure which may have a potentially injurious effect) cannot serve as a basis for standing because it was not directly required in the Confirmatory Order, was covered in a subsequent order on which no hearing was requested, and was within the existing authority of the Licensee.

Be that as it may, we need not reach the question of standing in order to decide whether a hearing should be granted to Decade. As we read the *Marble Hill* opinion and the Commission's Order of May 12, 1980 in this proceeding, the Commission has already directed the result of dismissing the petition and has left us with what amounts to a ministerial act in ordering it. In *Marble Hill,* in determining that the petitioners did not have standing, the Commission approved the terms of the Director's enforcement order restricting the scope of any hearing to the facts underlying the imposition of the enforcement remedies ordered and the question of whether the enforcement order should be sustained. It specifically prohibited going beyond the remedies proposed to a consideration of additional or more drastic remedies.

Although Decade raises an interesting question of whether a confirmatory order is in the nature of the enforcement order considered in *Marble Hill,* that question is academic in light of the Commission's declaration in

its May 12, 1980 Order that this Board apply the principles of *Marble Hill* to this proceeding and restrict an adjudicatory hearing solely to the issues identified in the confirmatory order (which was worded almost identically to the *Marble Hill* enforcement order in limiting the scope to the truth of the facts set forth underlying the remedies proposed and the question of whether those remedies should be sustained). As the Commission pointed out in *Marble Hill,* there is ample judicial precedent for the Commission to limit the scope of its enforcement proceedings from including a consideration of more drastic remedies. It has chosen to do so and has provided a separate procedure under 10 CFR 2.206 for interested persons to seek enforcement actions beyond those proposed by the Staff. While Decade may question the wisdom of that procedure by which the Director of Nuclear Reactor Regulation decides on the enforcement remedy, the scope of any hearing that might be held on that remedy, and the granting of requests for action under 2.206 which question the sufficiency of the remedy, the Commission has approved that procedure in *Marble Hill* and its May 12, 1980 Order in this proceeding under its unquestioned authority to do so.

In view of the fact that Decade admittedly has not raised any issue for litigation within the scope of the Director's Order (*i.e.,* which challenges as injurious the remedies proposed by the Director), the petition must be dismissed whether or not Decade can support its standing to intervene. Decade has failed to raise a specific aspect of the subject matter of the proceeding, as defined in the Director's Order and approved by the Commission, that could qualify it to intervene under the requirements of 10 CFR 2.714(a)(2).

Similarly, although the State of Wisconsin has suggested a mechanism for granting a hearing, by deciding the issue of standing in Decade's favor and accepting the tube degradation issues as a matter of the Board's discretion, in its May 12, 1980 Order in this proceeding the Commission has precluded such an exercise of discretion by instructing the Board that any adjudicatory hearing that might be held be conducted "solely on the issues identified in the [Confirmatory] Order."

The January 3, 1980 Modification of Confirmatory Order

We need also consider the extent to which this Board may consider the January 3, 1980 and April 4, 1980 modification of confirmatory order. The Licensee and the Staff object to the Board's considering a hearing on the January 3, 1980 Order because Decade has not petitioned for a hearing on that Order. Tr. 23, 64-65. Moreover, the Staff insists (Tr. 23-24, 65-66) that the January 3, 1980 Order, while styled as "modifying" the November 30,

1979 Confirmatory Order, did not actually do so and only imposed an additional restriction that was unrelated to the November 30, 1979 Order.

Decade counters that it never filed a request for a hearing on the January 3, 1980 Order because it received that Order after the time for filing a petition had expired. Tr. 24-25, 26. It condemns (Tr. 25) as "egregious" and an "affront against the citizens of Wisonsin" the Staff's failure to serve it with a copy of the January 3, 1980 Order, considering Decade's intensive involvement in bringing the steam generator tube problems to the attention of the Staff and public, a grievance with which the Board has considerable sympathy.[6] We think the Staff and Licensee would do well to reread *Carolina Power and Light Company* (Shearon Harris Nuclear Plant, Units 1, 2, 3 and 4), ALAB-184, 7 AEC 229, 237 (1974), regarding the considerations of fairness that require the giving of notice of significant developments within the regulatory framework to parties who are already involved with the reactor in the regulatory process. Nevertheless, because Decade has not filed a petition for hearing on the January 3, 1980 Order, even belatedly, nor raised any issues (except with regard to standing) that might be considered as arising from the January 3, 1980 Order, that Order is not before the Board for consideration.

We do not intend to suggest that the Board could not consider any issues raised by petitioner in its request for a hearing on the November 30, 1979 Order as they might have been affected by the January 3, 1980 Order, or even issues that might have arisen from the January 3rd Order to the extent that they relate to the November 30, 1979 Order. Indeed, for the Board to consider the Director's remedies in their original form after they had been modified would reduce a hearing to a consideration of hypotheticals. However, we need not decide that question because Decade has not raised any issue for litigation within the scope of the November 30, 1979 Order or the January 3, 1980 Order either in its pleadings on the November 30, 1979 Order or by any belated petition for hearing on the January 3, 1980 Order.

The April 4, 1980 Modification of Confirmatory Order

Decade filed a formal petition for hearing on the April 4, 1980 Modification of Confirmatory Order, which the Director of Nuclear Reactor Regulation recommended to the Commission be referred to this

[6]Decade had submitted formal filings to the Commission regarding the steam generator tube degradation problems prior to the issuance of the January 3, 1980 Order on November 14, 1979; November 26, 1979; November 28, 1979; December 12, 1979 and December 17, 1979. The November 28, 1979 filing was directly related to the proposed reduction in operating pressure which was the subject of the January 3, 1980 Order. On January 2, 1980, the day before the Order was issued, Decade had participated in a conference before the Commissioners at which the proposed reduction in operating pressure and its potentially adverse consequences were discussed.

Board for consideration in conjunction with the consideration of the November 30, 1979 Order. No action has been taken. Decade vigorously objects (Tr. 20; Decade letter to Commission, July 26, 1980) to any summary referral of that request for hearing by the Commission to the Board or the Board's consideration of that request on its own volition, that might avoid a formal vote on that request by the Commission (which Decade speculates might be favorable to it because of the change in the make-up of the Commission). The Licensee apparently (Tr. 20-23) would have no objection to our considering the request for hearing on the April 4, 1980 Order but recognizes that the request is not before the Board and could not be considered over the objections of any party. The Staff (Tr. 23) would have no objection to our considering the request on that April 4, 1980 Order pending some kind of subsequent referral from the Commission.

As with regard to the January 3, 1980 Order, the Board does not have before it any litigable issues arising from the April 4, 1980 Order that are within the scope of the November 30, 1979 Order, nor any request for hearing on the April 4, 1980 Order that has been referred to us. Consequently, we cannot consider the April 4, 1980 Order.

The August 8, 1980 Authorization to Restart

By letter to the Board dated August 26, 1980, Decade requested permission to supplement its previous filings in support of an adjudicatory hearing based upon new information, which it relates in the letter, pertaining to the Office of Nuclear Reactor Regulation's authorizing the resumption of operation of the facility after an inspection conducted in accordance with the April 4, 1980 Modification Order. Decade complains that the authorization to restart was not issued by an order providing an opportunity for an adjudicatory hearing, but only by a letter dated August 8, 1980, which procedure Decade contends constitutes an admission that the prior orders should have permitted an intervention by persons complaining that more drastic remedies were necessary. Staff and Licensee respond by indicating that an order was not necessary for the action taken, which did not entail additional conditions; that the written authorization was in accordance with the terms of the April 4, 1980 order; and that the Staff did not change its procedures by the issuance of the written authorization without order, as contended by Decade, so as to concede Decade's legal arguments.

We do not see how any alleged change in staff procedures subsequent to the issuance of the November 30, 1979. Order can affect our disposition of the request for hearing on that Order. At most, the August 3, 1980 authorization could affect only issues arising from the April 4, 1980 Order

to which it was related and over which the parties have agreed we have no jurisdiction. Consequently, the August 8, 1980 authorization to restart cannot affect this proceeding.

Decade's Request for Certification or Interlocutory Appeal

Finally, Decade moves in the alternative (Decade Motion, July 30, 1980; Tr. 91-94), if we should deny the request for hearing, for an order certifying to the Commission the question of whether the opinion in *Marble Hill* should be rejected and not applied to this case or, in the further alternative, if certification is also denied, for an order permitting Decade to file an interlocutory appeal directly to the full Commission. Decade premises its motion on the change in the make-up of the Commission which resulted when Commissioner Kennedy's term expired on June 30, 1980, and the resulting two-two line-up among the Commissioners who had voted on the *Marble Hill* and May 12, 1980 Orders.

As pointed out by the Board (Tr. 95) and verified by the Staff (Staff Response, August 22, 1980), a certification to the Commission would go first to the Appeal Board under the specific delegation of 10 CFR 2.785(b)(1), the procedure that Decade attempts to avoid. Furthermore, a denial of the petition is not an interlocutory order, but a final one, to which an appeal can be taken immediately to the Appeal Board. Consequently, a certification to the full Commission by this Board would have no practical effect because a direct acceptance by the Commission would be contrary to its procedures.

Of equal importance, Decade's suggestion that this Board go behind the Commission's Order of May 12, 1980 to question the current make-up of the Commission and the possibility that it might reverse its position, is improper. We are bound by the May 12, 1980 Order and cannot speculate on the views of individual Commissioners that might presage a change in Commission policy.

CONCLUSIONS

For the reasons stated above, Decade's petition for hearing on the November 30, 1979 Confirmatory Order *is denied.* In view of the fact that no issues have been raised on which a hearing may be held either in Decade's petition or supplemental contentions or in the State of Wisconsin's petition for leave to participate as an Interested State filed on July 30, 1980, Wisconsin's petition *is denied.*

Decade's request for certification to the Commission or for permission to file an interlocutory appeal *is also denied.*

Under 10 CFR § 2.714a(a), petitioners have ten (10) days after service of this Order to appeal to the Atomic Safety and Licensing Appeal Board.

Board members Dr. Richard F. Cole and Dr. J. Venn Leeds join in this Order.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Herbert Grossman, Esq., Chairman

Dated at Bethesda, Maryland
this 4th day of November, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-237
50-249
50-254
50-265
(10 CFR 2.206)

COMMONWEALTH EDISON COMPANY
(Dresden Station, Units 2 and 3) (Quad Cities Station, Units 1 and 2)

November 26, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 which requested that the Commission shut down Dresden Station Unit 2 and 3 and Quad Cities Station Units 1 and 2 until scram discharge volume monitoring equipment is installed. The licensees were required by Commission Order to install such equipment by December 1, 1980.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated October 24, 1980, Ms. Catherine Quigg, on behalf of Pollution and Environmental Problems, Inc. requested, pursuant to 10 CFR Section 2.206 of the Commission's regulations, that the Commission immediately shut down the Dresden Station Units 2 and 3 and Quad Cities Station Units 1 and 2 until "essential scram discharge volume monitoring equipment" is installed (Petition, p. 1). This equipment was the subject of an October 2, 1980 "Confirmatory Order" sent to Commonwealth Edison Company (licensee) which required that the equipment be in place by December 1, 1980; in the interim period between October 2 and December 1, the licensee was ordered to increase surveillance of the scram discharge volume (SDV) water level to at least once per shift.

I.

Ms. Quigg's petition contends that the health and safety of the citizens of Illinois and neighboring states are endangered as long as the Dresden and Quad Cities reactors are permitted to operate without the required scram discharge volume monitoring equipment. Her concern stems from an event at the Browns Ferry Nuclear Station on June 28, 1980 involving the accumulation of water in the SDV and action taken by the NRC subsequent to that event. Her argument is that the interim monitoring program, referred to above, which has been implemented at the Dresden and Quad Cities Units as a result of the October 2 "Confirmatory Order" is not sufficient to prevent an occurrence similar to the Browns Ferry event. That argument is based upon concerns expressed in a memorandum dated August 18, 1980 from Carlyle Michelson, Director of the NRC Office of Analysis and Evaluation of Operational Data, to me as Director of the NRC Office of Nuclear Reactor Regulation. (Petition, pp. 1-2). In light of the Michelson memorandum, and since the Dresden and Quad Cities reactors are subject to the same type of event as occurred at Browns Ferry, Ms. Quigg requests that they be shut down immediately until continuous monitoring of their SDV is implemented on December 1.

The Staff has evaluated Ms. Quigg's concern that the SDV cannot be properly monitored prior to installation of continuous monitoring equipment on December 1, 1980. For the reasons set forth below, I find that the interim procedures specified in the October 2, 1980 Confirmatory Order are sufficient to insure that continued operation of the Dresden and Quad Cities units until December 1, 1980 will not jeopardize the public health and safety.

II.

As Ms. Quigg's petition correctly indicates, the cause of failure to automatically scram at Browns Ferry was the presence of residual water in the SDV which reduced available free volume for the scram discharge water and inhibited control rod insertion. As a result of that event, the NRC issued Inspection and Enforcement Bulletin 80-17 (IEB 80-17) on July 3, 1980. That bulletin described actions to be taken by all licensees of operating General Electric designed BWR reactors, including the Dresden and Quad Cities units. Among the actions described in the bulletin were (1) performance of surveillance tests to verify the absence of residual water in the SDV and associated piping, and to verify that the SDV vent valves are operable and the vent system free of obstruction (2) verification at the conclusion of the tests, and after all scrams, that all vent lines in the SDV

are functional and the SDV is free of residual water, and (3) implementation of surveillance procedures such that the SDV is monitored daily for residual water. In addition to imposition of bulletin requirements, procedures in the event of scram failure were reviewed to assure that adequate measures to safely shut down are available.

Additional actions were requested in supplements 1, 2 and 3 to IEB 80-17, dated July 18, July 22 and August 22, 1980, respectively. In particular, item B.1 of supplement 1 requested that licensees install a system to continuously monitor water levels in all SDV's, providing continuous recording alarm functions in the design. In addition, supplement 1 requested a firm commitment for an installation date, and a commitment to provide equipment changes and/or surveillance requirements in addition to those now in effect that will provide adequate assurance of SDV operability in the interim until installation is complete. Supplement 2 required modifications to the vent system to assure continuous system venting.

Commonwealth Edison Company's response to Supplements 1 and 2, dated August 15, 1980, was unacceptable in that it did not provide an acceptable date for installation for the continuous monitoring system. In view of the fact that IEB 80-17 and its supplements were issued to elicit from licensees measures which would provide assurance of continued safe operation during the interim period until an ultimate resolution could be achieved by changes in system design and operating procedures, and in view of the Commonwealth Edison Company's unacceptable response to that bulletin, the NRC issued the above-mentioned October 2, 1980 "Confirmatory Order." In that Order, the NRC staff concluded that particular criteria must be satisfied in order to provide adequate justification for continued operation. These criteria (1) reflect the NRC judgment that continuous monitoring of the SDV, with appropriate indication and alarm in the control room, should be completed by December 1, 1980, and (2) require that until installation is completed and the equipment is operable, surveillance checks of the SDV should be made at least once per shift whenever the reactor is critical.

Petitioner apparently does not realize that the concern she has expressed in her petition regarding the propriety of the interim measures required by the October 2 Order was taken into consideration prior to the issuance of that Order. As her petition correctly states, the Michelson memorandum dated August 18, 1980 raised a question regarding the potential for unacceptable interaction between the control rod drive system and the nonessential control air system at the Browns Ferry Station. In this postulated event, a slow loss of control air pressure to the scram discharge valve actuators could allow the valves to drift open as air pressure decreased. Possible in-leakage might partially fill the SDV in a matter of

minutes without any indication of SDV header fill. Since the SDV headers, which are connected with the instrument volume by a two-inch pipe, have a drain rate that is less than the instrument volume drain rate, such in-leakage might go undetected by the existing alarm or scram instruments. Thus, failure in the nonessential control air system and resulting degraded air pressure could result in a significant and undetected increase in SDV in-leakage and could lead to a loss of scram capability.

As Ms. Quigg also correctly notes, a memorandum dated August 22, 1980 from Denwood Ross, Director of the NRC Division of Systems Integration to me, comments that "this postulated scenario, while unlikely, has generic implications because the majority of the operating BWR's have hydraulic configurations similar to the Browns Ferry Plant." Accordingly, Mr. Michelson's concern was reviewed and addressed in Supplement 3 to IEB 80-17 which was issued on August 22, 1980. Supplement 3 states, in pertinent part:

> NRC staff evaluation of a potential single failure mechanism of the control rod drive control air system has identified the need for licensee actions in addition to those requested by IEB 80-17 and supplements 1 and 2.
>
> ...[The concern] involves gradual or potential loss of control air system pressure, which could cause partial opening of scram outlet valve without rod motion.

Supplement 3 states further that licensees should, within five days, verify that procedures are in effect to:

> a. Require an immediate manual scram on low control rod drive air pressure with a minimum of 10 psi margin above the opening pressure of the scram outlet valves.
>
> b. Require an immediate manual scram in event of (1) multiple rod drift in alarms or (2) a marked change in the number of control rods with high temperature alarms.

From our reading of Ms. Quiggs' petition, the petition appears to have been filed without knowledge or recognition of the provisions of Supplement No. 3 of IEB 80-17 which address the concerns expressed in her petition. I believe the administrative procedures required by Supplement No. 3 provide an effective basis for continued safe operation of the plants until additional remedial measures are in place. For the long term, additional plant modifications to prevent unacceptable interactions between the control rod drive and non-essential control air systems are under current review.

III.

Based on the foregoing I have determined that there is reasonable assurance Dresden Station Units 2 and 3 and Quad Cities Station Units 1 and 2 can continue to operate without undue risk to the public health and safety prior to the installation of continuous SDV monitoring equipment on December 1, 1980. Consequently, Ms. Quigg's request for an order to immediately shut down the named facilities is denied.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, NW., Washington, D.C. 20555 and in the local public document rooms at the Morris Public Library, 604 Liberty Street, Morris, Illinois 60451 (for the Dresden Station) and the Moline Public Library, 504 17th Street, Moline, Illinois 61265 (for the Quad Cities Station). Additionally, a copy of this decision will be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR Section 2.206(c) of the Commission's regulations.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 26th day of November, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-389**
(10 CFR 2.206)

FLORIDA POWER AND LIGHT COMPANY
(St. Lucie Nuclear Power Plant, Unit 2) **November 28, 1980**

The Director of Nuclear Reactor Regulation denies a request under 10 CFR 2.206 that the Commission take action to permit consideration of "Class 9" accidents at the St. Lucie Unit 2 plant.

NEPA: SEVERE ACCIDENT CONSIDERATIONS RULES OF PRACTICE: REOPENING OF PROCEEDINGS

As provided in the Commission's June 1980 "Statement of Interim Policy," the Staff will not take action to reopen past NEPA reviews in response to a petition under 10 CFR 2.206 in the absence of a showing of "special circumstances."

DIRECTOR'S DECISION UNDER 10 CFR 2.206

On February 14, 1980, the Atomic Safety and Licensing Appeal Board referred a motion to the Director of Nuclear Reactor Regulation for consideration under 10 CFR 2.206. The motion, filed by Martin H. Hodder and Terence J. Anderson on behalf of the intervenors in the St. Lucie Unit 2 construction permit proceeding, asked the Appeal Board to include consideration of "Class 9" accidents at the St. Lucie facility with the remaining matters in the proceeding. The request was based on the

Commission's decision in *Offshore Power Systems,*[1] which the petitioners construed as changing the Commission's general policy against considering the consequences of Class 9 accidents in individual licensing proceedings. Except for two issues which the Appeal Board found unrelated to the environmental consequences of Class 9 accidents, the construction permit proceeding had been concluded before this agency and the federal courts.[2] The Appeal Board dismissed, therefore, the petitioners' motion for want of jurisdiction and referred the motion to the Director of NRR of consideration as a petition under 10 CFR 2.206.[3]

When the petitioners filed their motion with the Appeal Board on December 12, 1979, the Commission's policy on consideration of "Class 9" accidents was in a state of flux. The term "Class 9" accident had been used by the Commission in a proposed rule which would have added an Annex to Appendix D of 10 CFR Part 50 to establish the manner in which various categories of accidents should be taken into account in the environmental review for a nuclear power plant.[4] The "Class 9" category, which included the most serious accidents, was generally not required to be analyzed in environmental reports and statements under the proposed Annex. The proposed Annex was adopted as interim guidance until the Commission took further action to finally adopt or reject the Annex.

In September 1979, the Commission issued a decision in *Offshore Power Systems* in which it announced its intention to complete the rulemaking begun by the Annex and to reexamine the Commission's policy on accident considerations.[5] The Commission asked the NRC staff to provide recommendations on changes to the Annex's guidance and to identify individual cases in which the staff believed the environmental consequences of Class 9 accidents should be considered.[6] The petitioners here, relying on the *Offshore Power Systems* decision, asked the Appeal Board to take several actions in response to the petitioners' motion. These actions are summa-

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[1]*Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257 (1979).
[2]The Licensing Board had authorized issuance of the permit to construct St. Lucie Unit 2 in 1977, an action that the Appeal Board later approved. LBP-77-27, 5 NRC 1038, *aff'd,* ALAB-435, 6 NRC 541 (1977), *as modified by* Appeal Board Order of October 28, 1977. The Commission declined to review the Appeal Board's decision, thereby making it the final action of this agency. The decision was upheld on judicial review. *Hodder v. NRC* 589 F.2d 1115 (D.C. Cir. 1978) (decision without published opinion), *cert. denied,* 444 U.S. 829, *rehearing denied,* 444 U.S. 974 (1979). The District of Columbia Circuit's unpublished memorandum is reproduced at 13 Environ. Rep. (BNA) 11 (1978). The intervenors' unsuccessful appeal was based in part on the NRC's refusal to consider Class 9 accidents at the St. Lucie site.
[3]ALAB-579, 11 NRC 223 (1980).
[4]*Consideration of Accidents in Implementation of the National Environmental Policy Act of 1969,* 36 FR 22851 (1971).
[5]CLI-79-9, 10 NRC 257, 262 (1979).
[6]*Id.* at 262.

rized in the petitioners' answer to the NRC staff's and the licensee's replies to the petitioners' original motion:

"[I]ntervenors submit that the Appeal Board should enter an order:

1. staying completion of these proceedings until the Commission has received and acted upon the staff's recommendations with respect to class 9 accident consideration at the St. Lucie site or has adopted a new general policy;

2. directing the staff to advise the Commission within 30 days of the reasons why it believes the consequences of class 9 accidents should or should not be considered in this case and granting the other parties 30 days after that advice is given to submit their views on the question to the Commission; and

3. certifying to the Commission as major and novel the question of the standards to be applied by the staff in determining in which 'individual cases...the environmental consequences of Class 9 accidents should be considered,' the procedures by which such staff determinations are to be reviewed, and how the Commission's order in *Offshore* is to be implemented."[7]

The Appeal Board effectively disposed of the petitioners' request to stay further proceedings when it declined jurisdiction over the matters raised in the motion. The Appeal Board saw no direct link between the Class 9 issue and the two pending matters in the St. Lucie proceeding and, therefore, the Appeal Board found that it could not accede to the petitioners' request to take up the Class 9 issue. In the absence of some direct relationship between the Class 9 issue and the issues which remained for disposition in the proceeding, the Class 9 issue could not be reintroduced into the proceeding, and it would be inappropriate as well as beyond the Appeal Board's jurisdiction to stay the remaining proceedings until the Class 9 issue had been resolved.

The issue left for resolution in this decision under 10 CFR 2.206 is whether any action should be taken to reopen at this time the Class 9 issue with respect to St. Lucie Unit 2. Since the petitioners filed their motion before the Appeal Board, the Commission has announced a revised interim policy on accident considerations in environmental reviews.[9] In its new interim guidance the Commission withdrew the proposed Annex and provided guidance on accident considerations in NEPA reviews in licensing proceedings where a final environmental statement has not been issued. Under the Commission's new guidance, environmental impact statements for on-going and future NEPA reviews will give consideration to a broader

[7] *Intervenor's Reply to FPL's and the NRC Staff Response* at 18-19.

[9] *Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969*, 45 FR 40101 (June 13, 1980).

spectrum of accidents, including severe accidents that may have been designated "Class 9" under the Annex. The commission gave the followng guidance:

> "In the analysis and discussion of such risks, approximately equal attention shall be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences of those releases....
>
> "Events or accident sequences that lead to releases shall include but not be limited to those that can be expected to occur. In-plant accident sequences that can lead to a spectrum of releases shall be discussed and shall include sequences that can result in inadequate cooling of reactor fuel and to melting of the reactor core."[10]

Because no final environmental statement (FES) has been issued in connection with the operating license for St. Lucie Unit 2, the St. Lucie FES will be subject to the Commission's new interim policy which requires more extensive analysis of severe accidents.

In addition to its guidance with respect to future NEPA reviews, the Commission also provided guidance with respect to facilities for which final environmental statements had been issued, including facilities like St. Lucie Unit 2 which have construction permits, but which await review for operating licenses:

> "It is expected that these revised treatments will lead to conclusions regarding the environmental risks of accidents similar to those that would be reached by a continuation of current practices, particularly for cases involving special circumstances where Class 9 risks have been considered by the staff....Thus, this change in policy is not to be construed as any lack of confidence in conclusions regarding the environmental risks of accidents expressed in any previously issued Statements, nor, absent a showing of similar special circumstances, as a basis for opening, reopening or expanding any previous or on-going proceeding.[5]
>
> "However, it is also the intent of the Commission that the staff take steps to identify additional cases that might warrant early consideration of either additional features or other actions to prevent or to mitigate the consequences of serious accidents. Cases for such consideration are those for which a Final Environmental Statement has already been issued at the Construction Permit stage but for which the Operating License review stage has not yet reached. In carrying out this directive, the staff should consider relevant site features, including population density, associated with accident risk in comparison to such features at presently operating plants. Staff should also consider the likelihood that substantive changes in plant design features

[10] 45 FR at 40103.

which may compensate further for adverse site features may be more easily incorporated in plants when construction has not yet progressed very far.

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[9] "Commissioners Gilinsky and Bradford disagree with the inclusion of the preceding two sentences. They feel that they are absolutely inconsistent with an evenhanded reappraisal of the former, erroneous position on Class 9 accidents"[11]

Mindful of the Commission's directives, the Staff has reviewed information concerning the St. Lucie facility to determine whether special circumstances exist that might warrant consideration of Class 9 accidents at this time or that might warrant early consideration of additional features of actions to prevent or mitigate the consequences of serious accidents. As the Commission noted in the new statement of interim policy, the staff has indentified in the past special circumstances which would warrant more extensive consideration of Class 9 accidents. The special circumstances fell within three categories: (1) high population density around the proposed site, *i.e.*, above the trip points in the *Standard Review Plan* (NUREG 74-087, September 1975) and Regulatory Guide 4.7, *General Site Suitability Criteria for Nuclear Power Stations* (November 1974); (2) a novel reactor design (a type of power reactor other than a light water reactor); or (3) a combination of a unique design and a unique siting mode.[12] In *Public Service Company of Oklahoma,* which was decided before the Commission stated its new interim policy, the Commission listed, in addition to these three criteria, proximity of a plant to a "man-made or natural hazard" as "the type of exceptional case that might warrant additional consideration."[13] These, then, are the criteria that guide the Staff's determination as to whether there are "special circumstances" which would warrant "opening, reopening, or expandng any previous or on-going proceeding" with respect to Class 9 accident considerations for St. Lucie Unit 2.[14] The Staff has applied these criteria to

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[11] 45 FR at 40103.

[12] *See* 45 FR at 40102; *Public Service Electric and Gas Company* (Salem Nuclear Generating Station, Unit 2), DD-80-17, 11 NRC 596, 615 n.21 (April 1980). In the first category fell the Perryman site, for which the staff performed an informal assessment in the early site review of the relative differences in Class 9 accident consequences among the alternative sites. The Clinch River Breeder Reactor, a liquid metal cooled fast breeder reactor which is different from the more conventional light water reactor, fell within the category of novel reactor design, and the staff included a discussion in the final environmental statement (NUREG-0139, February 1977) of its consideration of Class 9 accidents. The floating nuclear power plants represented the third category of special circumstances, a combination of unique design and a unique siting mode. Because the plants would be mounted on a floating barge, there would be no soil structure to retard the release and dispersal of activity beneath the plant following a core melt accident as would be the case for land-based plants. The staff concluded that the most likely potential exposure to the population from the liquid pathway for a floating nuclear plant would be significantly greater than for a land-based plant.

[13] CLI-80-8, 11 NRC 433, 434 (March 1980).

[14] These criteria have been applied in three other decisions under 10 CFR 2.206, one of which was decided after the Commission's announcement of its new interim policy. *Arizona Public*

FOOTNOTE CONTINUED ON NEXT PAGE

the St. Lucie facility, and, on the basis of this review, I have determined that "special circumstances" do not exist which would warrant special consideration for St. Lucie Unit 2 at this time of Class 9 accidents or additional design features or actions to compensate for site features in the prevention or mitigation of the consequences of severe accidents. The results of the Staff's review follow.

As described in Section 4 of the Staff's Safety Evaluation Report (November 7, 1974) and in Section 1.2 of the Staff's Safety Analysis Report, the nuclear steam supply system for Unit 2 is a Combustion Engineering pressurized water reactor using a two-loop coolant system. The reactor design is basically similar to the design of several other Combustion Engineering reactors, including St. Lucie Unit 1 (in operation since 1976) and Calvert Cliffs Units 1 and 2 (in operation since 1974 and 1976, respectively). The St. Lucie Unit 2 is, therefore, a typical light water reactor facility, and does not involve a novel design.

The St. Lucie Unit 2 is located on Hutchinson Island, a Florida coastal barrier island which lies between the Atlantic Ocean and a long bay called Indian River. The nearest surface water body which would be affected by liquid releases from a Class 9 accident is Big Mud Creek, an inlet of Indian River. The water table at the site is at an elevation of 2 feet mean sea level (MSL.) The gradient is approximately 0.0024 toward Big Mud Creek. Groundwater velocity is conservatively estimated to be less than 10 feet per day.

If a Class 9 accident were to occur, the groundwater in the plant area would be first affected. Contaminated liquids generated by a postulated core-melt accident would first encounter the compacted fill which extends 30 feet below the reactor building. Because the reactor building is about 850 feet from Big Mud Creek, travel time of contaminants in the groundwater would be at least two and one-half months. Due to the slow rate of groundwater movement, the Staff concludes that there are no unusual features or special circumstances with regard to the characteristics of groundwater contamination and its interdiction at this site that would distinguish the site from other land-based light water reactor sites such that special consideration of environmental consequences of Class 9 accidents would be warranted.

The NRC's task action plan (Task III.D.2.3) includes an in-depth study of liquid pathway radiological control, one of the potential special concerns

FOOTNOTE CONTINUED FROM PREVIOUS PAGE

Service Company (Palo Verde Nuclear Generating Station, Units 1, 2, and 3) *et al.*, DD-80-22, 11 NRC 919 (June 1980); *Public Service Electric and Gas Company* (Salem Nuclear Generating Station, Unit 2), DD-80-17, 11 NRC 596 (April 1980); *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), DD-80-6, 11 NRC 371 (February 1980).

in assessing consequences of severe accidents.[15] St. Lucie Unit 2 and all other plants will be evaluated as part of this task. If the evaluation should result in the liquid pathway being identified as a unique consideration for St. Lucie, methods of interdiction and mitigation will be identified. Based on the *Liquid Pathway Generic Study* (NUREG-0440, February 1978) and preliminary discussions with Argonne National Laboratory on liquid pathway mitigation methods, the Staff believes it is possible to interdict releases within the time period identified above and thereby reduce or prevent the migration of contaminated groundwater to the river. Several methods of mitigation, including pumping and construction of slurry walls to prevent migration, are available. If site specific features are required for St. Lucie, they will be identified as part of the review of liquid pathway radiological control.

The Staff has also reviewed information on man-made or natural hazards that might potentially impair safety-related features of the St. Lucie facility. As described in the Safety Evaluation Report (section 2.2), there are no military, transportation, or industrial facilities near the site which pose unusual hazards to safe operation. Site location and station design have been found acceptable with respect to such man-made hazards. The Staff's review specifically ensures that station design is adequate to accommodate natural as well as man-made characteristics of the site's environs.[16] The Staff has not identified any unusual circumstances with respect to such external hazards that would warrant reopening a proceeding on St. Lucie or additional consideration now of additional design features.

The staff has developed population density guidelines, which are given in Regulatory Guide 4.7, for determining when the population surrounding a proposed new site is sufficiently high to require that special attention be given to the consideration of alternative sites with lower population densities. A proposed site which exceeds the population density guidelines of Reg. Guide 4.7 can nevertheless be selected and approved by the staff if, on balance, it offers advantages compared with available alternative sites

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[15] *NRC Action Plan Developed as a Result of the TMI-2 Accident*, Vol. I, at III.D.2-4 (NUREG-0660, May 1980).

[16] Meteorological, hydrological, geologic, and seismic characteristics of the site are discussed in the Staff's safety evaluation for St. Lucie Unit 2, which was issued in November 1974 and was supplemented on March 3 and April 27, 1976. The impact of hurricanes received extensive attention at the construction permit proceeding, and the applicant was required to provide certain protection against erosion that might occur as a result of a postulated design basis stalled hurricane. *See Florida Power and Light Company* (St. Lucie Nuclear Power Plant, Unit 2), LBP-75-5, *Partial Initial Decision - Environmental and Site Suitability*, 1 NRC 101, 120-15, 134-41 (1975); LBP-17-27, *Initial Decision*, 5 NRC 1038, 1053-56, 1079 (1977). *See also Supplement No. 1 to the Safety Evaluation of the St. Lucie Plant Unit No. 2*, 2 (March 1976).

when all of the environmental, safety, and economic aspects of the proposed site and the alternative sites are considered. The Staff believes that the comparison of the population distribution between a proposed site and candidate alternative sites constitutes a reasonable approach to an assessment of the relative differences in the environmental consequences for a spectrum of severe accidents, including Class 9 events. However, the Staff recognizes that the population density of a site is a relatively crude measure of the residual risk associated with accidental releases of radioactivity. The risk from any accidental releases would depend not only upon the population density of a site, but also upon many other factors that would enter into the determination of the actual consequences of an accident. In addition, insight gained from staff studies of accident risk leads the staff to conclude that the risk is not uniform for all members of the public regardless of distance form the site, but would be higher for those persons relatively close to the site, and generally decreases with distance away from the site.

The following table shows that cumulative population and population density out to a radius of thirty miles around the St. Lucie #2 site for the years 1970, 1983, and 2030. The 1970 population was based on census data, while the 1983 and 2030 projections were developed by the applicant.[17]

POPULATION DISTRIBUTION
ST. LUCIE SITE

RADIUS	CUMULATIVE POPULATION			POPULATION DENSITY, PERSONS/MI^2		
Miles	1970	1983	2030	1970	1983	2030
0 - 5	4040	12616	21084	52	160	268
0 - 10	46040	85950	158851	147	274	506
0 - 20	76040	150034	277405	61	120	221
0 - 30	121040	229879	424450	43	81	150

As shown in the table above, the cumulative population density surrounding the St. Lucie #2 site at the proposed start-up date is estimated to be less that the 500 persons per square mile density guideline of Reg. Guide 4.7 out to a distance of 30 miles. The projected growth rate for the areas surrounding the site indicates that the population density will stay well within the 1,000 persons per square mile guideline over the lifetime of the plant. Based upon the foregoing findings and considerations, the Staff

[17]Final Safety Analysis Report for St. Lucie Unit 2 (March 1980).

concludes that the population data for the St. Lucie site do not reflect a sufficiently unique circumstance in and of themselves, or when the data is compared to much higher populations at some other power plant sites, to warrant special consideration at this time of Class 9 accident consequences or additional preventive or mitigating design features and actions.

In light of the Staff's review, I have determined that no special actions are required now with respect to severe accident considerations for the St. Lucie Unit 2 facility. Accordingly, the motion referred to me for consideration under 10 CFR 2.206 is denied. I reiterate, however, that the final environmental statement for the St. Lucie Unit 2 operating license will include the analysis of severe accidents required under the Commission's new interim policy. In addition, the Staff will require mitigating measures for St. Lucie Unit 2 if such measures are found necessary as a result of the generic study on the liquid pathway.

A copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c). As provided in 10 CFR 2.206(c), this decision will constitute the final action of the Commission 20 days after its issuance, unless the Commission on its own motion initiates review of this decison within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 28th day of November, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-289 (Restart)**

METROPOLITAN EDISON COMPANY, *et al.*
(Three Mile Island Nuclear Station, Unit 1) **December 5, 1980**

Finding itself to be evenly divided on the certified question from the Licensing Board of whether contentions based on psychological stress should be accepted in the TMI-1 restart proceeding, the Commission announces that (1) it will reconsider the question upon appointment and confirmation of a fifth Commissioner; and (2) in the meantime, requests to admit contentions based on psychological stress are effectively denied.

MEMORANDUM AND ORDER

The Commission's Order and Notice of Hearing dated August 9, 1979 stated that the Commission had not determined whether psychological stress could be legally relevant to the TMI-1 restart proceeding. The Commission directed that parties wishing to raise psychological stress or related subjects before the Board should brief the Atomic Energy Act and National Environmental Policy Act (NEPA) issues relevant to the acceptability of such contentions and that the Board should then certify these issues to the Commission for final decision.

Pursuant to this order the Board on February 22, 1980 certified to the Commission the issue whether psychological stress can be legally relevant to the TMI-1 restart proceeding. In its certification the Board stated that "psychological stress is probably not cognizable under the Atomic Energy Act but...the Commission might conclude to the contrary." However the

Board also stated its view that psychological stress is cognizable under NEPA, and recommended that the Commission permit the Board to consider psychological stress with the aim of mitigating community fears about the operation of TMI-1.

After reviewing the Board's certification and the briefs filed by the parties, the Commissioners are evenly divided on the question whether the Board should consider psychological stress. Separate views of the Commissioners are attached to this order. A vote of 2-2 on this question constitutes an effective denial of requests to admit contentions based on psychological stress. Therefore, the Licensing Board should consider this to be a denial of these contentions. Further, the Commission decided that it will reconsider and vote on the question when the makeup of the Commission is altered by the appointment and confirmation of a fifth Commissioner. In the meantime, there is no authorization for the Board to admit psychological stress contentions.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, DC,
this 5th day of December 1980.

CHAIRMAN AHEARNE'S SEPARATE VIEWS

The Licensing Board concluded: "The Nuclear Regulatory Commission, within its discretion, may and should consider psychological stress and community fears under NEPA for the purposes of mitigating the effects of its TMI-1 licensing activities."[1]

I agree that the NRC should consider psychological stress and community fears—but not in the way the Board intended.

As has been evident throughout the past 15 months, the NRC *is* aware of the psychological stress in the communities surrounding TMI. We have gone through careful and extensive processes to insure that the public health and safety is protected and, to the best of some of our abilities, that we explain each step we are proposing or approving.

However, as was apparent in our treatment of the venting issue, an NRC licensing action is not an appropriate forum for psychological stress issues. There may be adjudicatory bodies which are appropriate for such issues—the NRC is not one.

The Board concludes that "...NEPA permits the NRC within its discretion and *without an EIS,* to consider community and individual fears, and to take reasonable actions to mitigate these fears."[2]

The Board has, I believe, correctly identified the most reasonable such action:[3]

> "Certainly it is true that the best way to minimize any psychological stress in the communities around TMI-1 is to make the plant safe or not allow it to operate."

This, of course, is also what the Board (and the Commission) explicitly is charged with doing. In addition, I certainly endorse the desirability of disseminating accurate information and, to the extent the NRC can assist, in assuring such information is "trusted."[4]

Finally, in terms of the specific legal arguments, I agree with the Licensing Board that "psychological stress is probably not cognizable under the

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[1] *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 1), LBP-80-8, 11 NRC 297, 309 (1980).
[2] *Id.* at 306.
[3] *Id.* at 308.
[4] *Id.* at 299.

Atomic Energy Act,"[5] and I believe that the issue of whether NEPA provides sufficient authority to impose mitigation measures on the licensee in the context of the restart proceeding is problematical.

Consequently, I agree with the Licensing Board that we are not *required* to consider psychological stress. I agree that the best way to decrease such stress is to insure the plant is safe if it is approved for operation. I believe the NRC (Commission and staff) must insure clear and accurate information is provided regarding what is being done. And I believe the Licensing Board and the Commission should play their proper roles in assuring that safe operation be the appropriate requirement.

I do not agree with the separate views of Commissioners Gilinsky and Bradford. Basically I believe their analyses present the issues as being much simpler than they really are.

For example, in commenting on the approach I have advocated Commissioner Gilinsky states: "Ironically, in its only ruling to date on safety issues in this case, the Commission took the narrowest possible view of its safety responsibilities to preserve the discredited assumptions of the hydrogen control rule." The Commission's "view of its safety responsibilities" is more complicated than one would be led to believe from reading Commissioner Gilinsky's comment. The Commission has made no final decision concerning the issues related to hydrogen control. It has already taken some actions and is actively considering additional steps.

Similarly, an example of Commissioner Bradford's failure to address the complexities inherent in this issue is his assertion that "The Commission has the authority, at least under NEPA, to consider psychological factors and to take actions necessary to mitigate them." To support his proposition Commissioner Bradford cites a case in which the Commission was found to have jurisdiction to mitigate the environmental impacts of transmission lines.[6] While this case may have some relevance, it is hardly conclusive.

Although I have additional disagreements with the views of Commissioners Gilinsky and Bradford, including disagreements with views which the reader of Commissioner Bradford's opinion might believe belong to those

[5] *Id.* at 299.

[6] Although the Court described the Licensing Board decision (which was based in part on visual impacts of the transmission lines and in part on the more traditional consideration of impact on waterfowl) in the "Background" discussion, it did not focus on the need for or propriety of considering various types of impacts. There was no reason for it to address the question since petitioners had conceded the proposed routes were superior. *Public Service Company of New Hampshire v. NRC*, 582 F.2d 77, 85 n. 15 (1st Cir. 1978).

who disagree with Commissioner Bradford, e.g., to me, past experience shows that reasoned arguments are of little interest to those whose minds are made up.

SEPARATE VIEWS OF COMMISSIONER HENDRIE

The Atomic Safety and Licensing Board conducting the proceeding on the proposed restart of Three Mile Island Unit 1 has certified to the Commission, by decision of February 22, 1980, the question whether the effect of psychological stress on residents of the TMI area is an issue within the scope of the proceeding. The Licensing Board expressed the view that psychological stress is "probably not cognizable under the Atomic Energy Act," but the Commission, as an exercise of discretion, "may and should consider psychological stress and community fears under NEPA."

For the reasons set forth below, I believe that "psychological stress and community fears" need not and should not be included within the scope of this proceeding. It should be recognized that we are dealing in this case with a situation in which the actual level of risk is essentially irrelevant to the psychological stress claimed to be suffered. Moreover, the psychological stress at issue is not that associated with actual exposure to radiation — although individual petitioners may have been so exposed — but the stress caused by the possibility that they and others might be so exposed by future operation. There is no way to allay that fear except not to build or operate the reactor. That is not to say that these are unimportant matters — on the contrary, they have been and must continue to be of concern to the Commission and to other relevant federal and state authorities. It does not automatically follow, however, that because these concerns are important, the most appropriate way for the Commission to take account of them is to adjudicate, in formal proceedings, the precise nature and degree of fears related to the restart of TMI-1. As I view the mandate of this Commission under the law, it is to permit the operation of licensed facilities upon a finding that they are safe; petitioners would have us consider whether the existence of psychological stress in the community should lead us to deny permission to operate the reactor regardless of our judgment that the plant is safe from a technical standpoint, a decision which would be contrary to the mandate of the statute. Accordingly, I do not believe that consideration of psychological impacts in the adjudicatory proceeding on the restart of TMI Unit 1 would serve a useful public purpose. Rather, the most appropriate way for the Commission to take account of fears related to TMI-1 is, first, to assure that the technical decision on restart is sound; and second, if the decision is to permit restart, to make sure that the public understands, through accurate and comprehensible information, fully disseminated, the basis for the Commission's determination that the plant can operate safely.

I. Health and Safety Under the Atomic Energy Act

The fist question in this case is whether, as intervenor PANE asserts, the Commission is required by the Atomic Energy Act to consider the issue of psychological stress in this licensing proceeding. PANE's argument is based upon a broad reading of the words "public health and safety" in the statute. Read literally, the words are sufficiently broad to allow consideration of mental health under the rubric of "public health." This is hardly surprising. However, the question whether the Commission's responsibility to protect "public health and safety" encompasses mental health problems caused by fear of radiation cannot be resolved by recourse to the text of the Act alone. Neither the Act nor its legislative history makes specific reference to psychological disorders, or psychologically based physical illnesses, related to fear of radiation. We must therefore ask whether it is likely that Congress mandated that the Commission must take such mental health impacts into account in deciding whether a particular nuclear power plant can operate with reasonable assurance of public health and safety.

The Congress which passed the Atomic Energy Act of 1946 created the Atomic Energy Commission in order to bring a maximum of technical expertise to bear on complex and hazardous activities associated with a developing technology. When the Atomic Energy Act of 1954 authorized the development of a civilian nuclear power industry, it was understood from the first that the public might well be apprehensive about a technology associated in the minds of most with the destructive power of atomic weapons. One of the major reasons for providing for public hearings on nuclear power plants was to provide a means for educating the public about nuclear energy and the measures taken to assure its safety. The 1965 report to the AEC by its Regulatory Review Panel, for example, characterized the most significant functions of public hearings as including a demonstration that "the AEC has been diligent in protecting the public interest" and that the applicant's proposal had received a "thorough and competent reveiw." Congress implicitly acknowledged that public fears about nuclear reactors were a reality which had to be addressed; the means chosen by Congress was to have technical issues of nuclear safety addressed and resolved by technical experts in a public licensing review process administered by the Atomic Energy Commission. Thus, it is not only that there is no suggestion in the Act, its legislative history, or more than a quarter century of Congressional oversight that the Commission's decisions in licensing proceedings were intended to encompass psychological stress associated with particular licensing actions, it is also that Congress envisioned that the Commission's expert judgments, publicly arrived at, would help serve to prevent or allay public fears.

In approaching this issue, moreover, we do not deal with an altogether blank slate. It is useful — though in my view not necessarily dispositive of this case — to consider how the definition of "public health," as the term is used in the Atomic Energy Act, was addressed by the First Circuit Court of Appeals in *New Hampshire* v. *Atomic Energy Commission*, 406 F.2d 170 (1969). In that case, the State of New Hampshire contended that the AEC was obligated to consider the effects of discharges of hot water into the Connecticut River. The State reasoned that the discharges reduced the capacity of the river to assimilate waste and thereby impinged on the public health.

The First Circuit's thorough and scholarly exposition of the text of the statute and its legislative history led it to the conclusion that New Hampshire's contention was in error. It first considered the State's plea that the issue be resolved on the "present day plain meaning" of the terms "health" and "safety." Though the court found this approach "tempting," it was constrained to observe that "we do not presently feel that we fulfill our function responsibly by simply referring to the dictionary." 406 F.2d 170, 173. The Court explained:

> Here we feel a very palpable restriction in the history surrounding the problem addressed by the Congress, the subsequent Congressional confirmation of the limited approach taken by the Commission... and a recognition of the complexity of administrative arrangements which would attend a literal definition of public health and safety as these terms are used in the Atomic Energy Act.
>
> The history of the 1954 legislation reveals that the Congress, in thinking of the public's health and safety, had in mind only the special hazards of radioactivity. ...The Joint Committee, in its first study report, made its focus clear when it said, "The special problem of safety in the atomic field is the consequence of the hazards, created by potentially harmful radiations attendant upon atomic energy operations." 406 F.2d 170, 173-4.

The court observed that the legislative history of the 1954 Act was of little use in finding a definition of "health and safety," for it was "obvious" that the meaning of terms had been deemed settled at the time the 1946 Act was passed. 406 F.2d 170, 174 n.4. The court then traced the interpretations of "health and safety" applied by the Commission and the Joint Committee on Atomic Energy in subsequent years. In 1965, for example, in enacting amendments to the Atomic Energy Act, the Joint Committee's report on the legislation stated that the "AEC's regulatory control was limited to considerations involving the common defense and security and the protection of the health and safety of the public with respect to the special hazards associated with the operation of nuclear facilities." 406 F.2d 170, 175, quoting S.Rep. No. 390, 89th Cong., 1st Sess., p. 4 (1965).

The present case in many ways parallels the issue in *New Hampshire* v. *AEC*. There as here, the contention was made that the Commission need go no further than its dictionary; "health" includes "mental health," it is now argued, and psychological stress must therefore be evaluated. There as here, the contention was made that allegations of effects on health must be considered by the agency, so long as a causal chain can be hypothesized which has its origin in the operation of the reactor. But as the court in *New Hampsire* recognized, it is necessary to go beyond both dictionary definitions and hypothesized causal chains to consider the Congressional purpose underlying the Act, and the context in which it was passed. The crucial question must be whether Congress intended to require the Commission to consider a particular kind of effect in licensing nuclear power plants. As I have indicated, I find not a shred of evidence to suggest that Congress mandated the Commission to consider psychological stress in its licensing proceedings.

Furthermore, we must not lose sight of the reality — seemingly self-evident — that technical agencies are created by the Congress to perform specific tasks within a certain area of expertise. This agency's expertise includes radiological health and safety and environmental effects related to nuclear power plant construction and operation; it does not include psychological stress. Given that resources are finite, the Commission could not develop expertise in the area of psychological stress without a significant reallocation of resources. I cannot believe that the Congress, in passing the Atomic Energy Act, intended that the Commission should divert resources from its real task — that of protecting public health and safety from radiological hazards posed by nuclear power plants — and reassigning them to the chimerical task of evaluating public anxieties.

The public would indeed have grounds for concern if members of this agency's staff, instead of working to reduce the likelihood of radiological harm to the public, were assigned instead to analyze the degree to which citizens worried about such harm. It should be obvious that an unsafe plant is not made safe by the fact that local citizens are unconcerned about it, any more than a safe plant is made unsafe by the fact that local residents are deeply anxious about it. The point, again, is not that public concerns should be ignored, but rather that the best way to address those concerns in this case is for the agency to do its statutorily mandated job of protecting the public's physical health and safety and to publicize effectively its conclusions and the facts which underlie those conclusions.

II. Evaluation of Costs and Benefits Under NEPA

The assertion is made that the Commission, apart from its responsibilities under the Atomic Energy Act, is obligated under the National

Environmental Policy Act (NEPA) to consider stress occasioned by fear of the operation of TMI-1. I believe that the Commission has the discretionary authority to consider such effects, but that the present circumstances do not warrant such consideration in this case.

First, the Commission prepared an environmental impact statement on the operation of TMI-1 before the facility was ever allowed to operate. After the accident at TMI-2, the Commission ordered the licensee to take a variety of safety-enhancing measures as a condition for resuming operation of TMI-1. None of those measures has a significant impact on the environment, and there is therefore no "major federal action significantly affecting the quality of the human environment" that requires preparation of an environmental impact statement as a matter of law.

Even if an environmental impact statement were required, however, applicable case law indicates that most courts consider psychological impact to be too intangible and unquantifiable to require analysis under NEPA. The cases are well known. In *Hanly* v. *Kleindienst* (Hanly II), 471 F.2d 823 (1972), *cert. denied,* 412 U.S. 908 (1973), the Second Circuit Court of Appeals stated that it was "doubtful whether psychological and sociological effects upon neighbors constitutes the type of factors that may be considered in making such a determination [i.e., whether an impact statement is required] since they do not lend themselves to measurement." The D.C. Circuit Court of Appeals quoted *Hanly II* with approval in commenting with respect to "some questions of esthetics" that "like psychological factors they 'are not readily translatable into concrete measuring rods.' " *Maryland-National Capital Park and Planning Commission* v. *U.S. Postal Service,* 487 F.2d 1029 (1975). The Sixth Circuit, in a case involving planned construction of public housing, declared in *Nucleus of Chicago Homeowners* v. *Lynn* : "To the extent that this claim can be construed to mean that HUD must consider the fears of the neighbors of prospective public housing tenants, we seriously question whether such an impact is cognizable under NEPA." 524 F.2d 225, 231 (1975), *cert. denied,* 424 U.S. 967 (1976). That decision was cited with approval by the Seventh Circuit in *First National Bank of Chicago* v. *Richardson,* which endorsed the *Hanly II* approach and added: "As regards public 'sensibilities' aroused by criminal defendants, we question whether such factors, even if amenable to quantification, are properly cognizable in the absence of clear and convincing evidence that the safety of the neighborhood is in fact jeopardized." 484 F.2d 1369, 1380 n.13 (1973).

The cases are not unanimous on this point — a different panel of the Second Circuit reached a different result in *Hanly* v. *Mitchell (Hanly I),* 460 F.2d 640, *cert. denied,* 409 U.S. 990 (1972), and the Fifth Circuit ruled in *Image of San Antonio* v. *Brown,* 570 F.2d 517 (1978), that socio-economic

impacts may be considered where there is a primary physical impact on the environment — but the view that psychological impacts are outside the scope of NEPA is clearly the majority position of the Court of Appeals decisions on the subject.

The counter-argument is made that the cited cases are inapposite, because the allegations presented here deal not with mere psychological distress, but with physical manifestations, clinically detectable, resulting from that distress. In my view, the contention that there is a legal distinction between psychological stress that does and does not have clinically detectable symptoms is without merit. Presumably, psychological distress will always be accompanied by physical symptoms in a certain proportion of the persons affected. As a legal matter, I see no basis for differentiating between psychological stress that has physical symptoms and that which is without physical manifestations as a means of deciding whether the Commission's licensing proceedings should adjudicate the nature and degree of such stress. In either case, the problems of quantification and proof would be such as to make rational factfinding extremely difficult, as licensing boards and the Commission struggled to decide between the largely unprovable assertions of opposing sets of expert witnesses.

It requires no great flights of the imagination to demonstrate that, absent extraordinary circumstances, the attempt to subject psychological stress to a cost-benefit analysis would have a destructive effect on the hearing process. The purpose of such a cost-benefit weighing of psychological impacts would be, presumably, to allow the Commission to require additional safety features if their cost can be justified in terms of reduced public stress. If psychological stress is determined to be an impact which must be mitigated (in the NEPA sense of that term), there would seem no obvious basis for differentiating between rationally and irrationally grounded anxieties. If anxieties are rationally based, the corrective measures which would alleviate the stress would presumably be justifiable in terms of protecting physical health and safety — irrespective of their effect on psychological stress. If the anxieties are irrationally based, on the other hand, then they are by definition not likely to be alleviated by a demonstration that some additional safety feature has been added. I cannot accept the proposition that, except under extreme conditions not presented in this case, it should be the task of the Commission's licensing boards to attempt to quantify the anxieties of the public, rational and irrational, and to calculate the reductions in those anxieties which one or another design modification might be expected to accomplish. Nor can I accept the proposition that a licensee's ratepayers should be required to bear the cost of adding unneeded features to an already safe plant in the hope that these

features will alleviate irrationally founded fears. Such an approach would not only turn the hearing process into an exercise in futility; it would also mean treating the American public with patronizing condescension.

The citizens of this country have a right to know the facts about nuclear safety, in terms which a lay person can understand. They have a right to know on what basis the agency charged with regulating nuclear safety makes its decisions. They also have a right to be regarded as capable of responding rationally to factual information. I cannot accept an approach that assumes irrationality on the part of a significant portion of the public and diverts the resources of this agency away from the task of assuring nuclear safety and devotes them instead to fruitless speculation about means of mollifying irrational fears.

The fundamental question remains the same. Did the Congress envision that the expert decision of a technically qualified agency would help to assuage public anxieties, or did it envision that the technical agency would allow its decision to hinge on its perception of the gravity of public anxieties? I believe that the answer to that question is clear, and that the appropriate means for the Commission to deal with psychological stress in this case is to make a sound safety decision and to let the factual bases of its decision be disseminated widely.

NEPA is a very broad statute and has had, as it was intended to have, a profound effect on agency decision making. But unless it is to displace the political process it must have some limits. It cannot be read to require that all conceivably relevant factors be heard by an agency including those already considered by Congress. It was intended and must be so construed to deal with *environmental* degradation. To be sure if one of a project's effects on the environment causes health problems, the associated mental impacts are in an appropriate consideration, but here we are being asked to consider effects apart from any effect on the environment.

Intervenors' argument is essentially that even if we are satisfied that the environmental impact is minimal, we must nevertheless hear evidence on, and consider in our decision, their fears that we are wrong and the mental stress thus engendered. The short answer is that Congress had already decided that the country is to have a nuclear power program even if it makes some people uneasy.

SEPARATE VIEWS OF COMMISSIONER GILINSKY

REGARDING CERTIFIED QUESTION ON

PSYCHOLOGICAL STRESS ISSUE

The issue before the Commission is whether it should exercise its authority under the Atomic Energy Act and the National Environmental Policy Act to consider, along with the physical health effects, the mental health effects of a decision to restart TMI-1, the companion reactor to the one which suffered an accident in March, 1979.

In voting to allow the Licensing Board to admit contentions relating to mental health, I have been most strongly influenced by two factors. The first is the Board's recommendation, contained in its extremely well-formulated certification, that we allow it to hear these contentions. The second is the Commonwealth of Pennsylvania's argument that the Commission should investigate and consider the psychological effects of restarting TMI-1.

I attach particular importance to the position taken by the Commonwealth of Pennsylvania. Under the Atomic Energy Act, the Federal government has preempted all authority to regulate radiological hazards. Under this scheme, the Commission, the agency charged with enforcing the Federal law, has an obligation to be sensitive to the views of the preempted States. The Atomic Energy Act directs the Commission to "afford reasonable opportunity for state representatives to offer evidence, interrogate witnesses, and advise the Commission as to [an]...application without requiring such representatives to take a position for or against the granting of the application."[1] When the Commonwealth requests that we "hear and consider evidence"[2] on an issue of this significance, we should heed its advice. A decision to consider stress in this post-accident case would not be a precedent for considering psychological stress in all furture NRC actions.

Those opposed to admitting these contentions have argued that the proper way for the Commission to deal with mental health in this case is for it to

[1]Section 274(l) of the Act, 42 USC 2021. The fact that this section speaks of an application for a license should not lead one to conclude that it is inapplicable to a proceeding on whether to restart a licensed reactor following an accident at the same site. The basic intent of Congress was that the States should be heard by this agency and I am certain that if Congress could have foreseen the present proceeding, it would have included restart proceedings within the ambit of this provision.

[2]Brief of the Commonwealth of Pennsylvania, p. 10, October 4, 1979.

make sound safety decisions and to widely advertise the factual bases of these decisions. Ironically, in its only ruling to date on safety issues in this case, the Commission took the narrowest possible view of its safety responsibilities to preserve the discredited assumptions of the hydrogen control rule.[3]

[3]10 CFR 50.44. This regulation prescribes the hydrogen control measures which must be present in a reactor to cope with the hydrogen generated by the reaction of zirconium fuel cladding with water during the course of an accident. The rule is based on the assumption that no more than five percent of the zirconium fuel cladding will react with water. The principal investigations of the TMI-2 accident concluded that as much as fifty percent of the zirconium cladding reacted with water during the accident. The relevant Commission decision is: In the Matter of Metropolitan Edison Company, Docket No. 50-289, Commission Order of September 26, 1980.

DISSENTING VIEWS OF COMMISSIONER BRADFORD

We decide an uncomfortable but important issue when we define the Nuclear Regulatory Commission's role in dealing with psychological stress arising from the possible reopening of a nuclear power plant at Three Mile Island. We decide the role that we, as the nuclear licensing arm of the federal government, are to play in looking out for community and individual psychological well-being that we have had an inadvertent part in damaging. Since a majority agree that we may consider psychological stress,[1] we are really deciding whether we think that individual well-being in this context is up to the individual alone, or whether the best we can do is to be of some general use by behaving well in the future, or whether we should take a somewhat more disciplined and thorough look at the question in the context of the National Environmental Policy Act.

The question before us is not whether "Congress has already decided that the country is to have a nuclear power program even if it makes some people uneasy."[2] That proposition, though true, is not in issue. Nor are we deciding whether stress related to Unit 1 is provable, whether it is quantifiable, or whether we should do anything about it. We are deciding only whether the question is of sufficient importance to allow our Licensing Board to examine further the possibility that we ought to take measures to mitigate stress and its consequences if we permit TMI-1 to reopen.

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I should note at the outset that I think it unlikely that the actual reopening of TMI-1 could hinge on the psychological stress contentions as framed here. I say this because none of the governmental entities that should be most knowledgable of a stress situation requiring permanent closure of TMI-1 are presenting such contentions. While the Commonwealth of Pennsylvania urges that we admit and consider stress-related contentions, its brief steers explicitly clear of any substantive involvement with such contentions. If the state and local entities do not feel that the stress issue warrants their involvement, it will be hard to avoid the conclusion that stress and its consequences are not of such overriding importance to the populace as a whole as to preclude operation of the plant.

Nevertheless, the NRC should consider psychological stress and community fears under the National Environmental Policy Act for the purpose of

[1]The only doubt on this proposition is in the Ahearne opinion where it is viewed as "problematical" (p. 1).
[2]Hendrie opinion, p. 11.

reducing any causes of such stress that may arise from its TMI licensing activities. This is the recommendation of the Licensing Board,[3] and it is the course consistent with NEPA's requirement that "to the fullest extent possible," "utiliz(ing) a systematic, inter-disciplinary approach which will insure the integrated use of the natural and social sciences," we "assure that presently unquantified environmental amenities be given appropriate consideration."[4]

Three significant points are not in dispute among a majority of Commissioners:

1) The Commission has the authority, at least under NEPA, to consider psychological factors and to take actions necessary to mitigate them.[5]

2) The accident at TMI-2 gave rise to considerable and partially quantifiable community stress and stress-related illnesses and symptoms. The reopening of either TMI unit has the potential to reaggravate this situation to some degree.[6]

3) Some actions can be taken by NRC and the licensee to lessen psychological stress in the event that Unit 1 were permitted to operate again. Such actions may not be justifiable solely in terms of reduced radiation exposure, although - as the Board has pointed out be way of example - activities that enhance the accuracy and credibility of informa-

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[3]The Board's excellent discussion of the NEPA questions is attached as Appendix A. Because the Board has been thorough and because I agree with its legal analysis, I have not repeated that analysis in the body of this opinion. The Board opinion in its entirety is *Metropolitan Edison Company,* 11 NRC 297 (1980).

I should note some puzzlement with Chairman Ahearne's statement "agree(ing) with the Licensing Board that we are not *required* to consider psychological stress" (p. 2). The Licensing Board reaches no such conclusion, especially as to NEPA, and neither do I. Neither the Board nor I need to decide whether we are required by NEPA to consider stress since we conclude that the Commission should do so as a matter of discretion.

[4]42 USC 4332(2)(A and B).

[5]The analogy to the consideration and mitigation of the equally subjective and unquantifiable subject of "visual insult" endorsed in *Public Service Company of New Hampshire* v. *NRC,* 582 F.2d 77, 82 (1978), is useful. This case is discussed in the Board opinion at p. 11 and p. 20. The Ahearne view that the court did not focus on the "propriety of considering various types of impacts" (Ahearne opinion, p. 2) seems to me to be irreconcilable with the Court's quite clear endorsement of the propriety of considering and mitigating visual impacts. These impacts were the basis for the NRC decision to reject 200 foot high steel lattice-work towers in favor of "75 foot wooden H-frames compatible with the surrounding forest." 582 F.2d, 77, 80. The court upheld this condition.

[6]The psychological impacts of a disaster of larger magnitude than TMI are analyzed in a considerable body of literature arising from the Buffalo Creek flood. See, for example, *Everything In Its Path: Destruction of Community in the Buffalo Creek Flood,* Kai T. Erikson (Simon and Schuster, New York, 1976), especially pp. 135-259. This reading provides extensive and astonishing examples of the tangible manifestations of post-accident stress. One must, of course, acknowledge the more drastic nature of that accident, but it does not always diminish one person's stress to know that another has been through worse. Furthermore, the Buffalo Creek dam was not rebuilt.

tion coming from the licensee and the NRC probably also enhance emergency preparedness.

What remains at issue is the Commission's choice of the most effective way to deal with stress-related harms. One view is that of the Board, with which I agree. The other view would exclude stress-related harms from this proceeding because they are being dealt with in other ways such as the activities of the NRC's TMI Program Office, the increased thoroughness of our technical review processes, and efforts to educate the public. This approach assumes a faith in NRC that may have existed to some degree before the accident, but that does not now exist for many of those members of the TMI public most likely to be presenting stress-related contentions and, for that matter, most likely to be susceptible to stress and its consequences. One need not fully share this public skepticism to find it understandable.[7]

The fact is that our technical evaluative processes alone cannot eliminate or substantially mitigate much of the stress in the TMI area. Those processes and this agency inadvertently helped to bring about the accident. People near TMI who know little else about NRC know that. Their lack of belief in the NRC and in its concern for them is a basic source of the problem. Furthermore, our technical review process cannot eliminate very low-level radiation exposures or some remote risks of a second accident. Concerns about this residual uncertainty have a tangible basis that the technical licensing process cannot reach.

[7]There is a theory of the TMI accident which holds that there was never any public danger and that the evacuation and resultant stress were ascribable solely to NRC miscalculations regarding the likelihood of an explosion. According to this line of thought, stress resulted from governmental bungling rather than real radiation danger and is therefore irrelevant to the licensing or the restart of any nuclear power plant.

In fact, there were several mistakes in the assessments of the TMI accident, and not all of them were on the side of caution. It is apparently true that the hydrogen bubble explosion that dominated public awareness starting on March 30, 1979, could not have occurred.

But it is equally true that on March 28, when all of our assessments and statements were reassuring, the core was, unbeknownst to us, partially uncovered for some hours. This circumstance could, in light of what we then regarded as likely iodine behavior, have been assumed to lead to much greater releases of radioactive iodine than actually occurred and perhaps also to molten fuel with uncertain consequences. While this was going on the Commission was supporting licensee efforts to depressurize into a configuration even more dangerous (again unbeknownst to us) than the event actually in progress.

Thus, stress arising from uncertainty about NRC competence or regulatory techniques cannot be dismissed as irrational or unrelated to radiation hazard. Indeed, I can conceive of no way to alleviate the stress or fears of another person or group that does not begin with respecting that stress or fear. Such respect may not come easily when a fundamental source of their concern is doubt about our competence and our veracity. Nevertheless, the most herculean efforts to rebuild confidence will largely be a waste of time if they come freighted with our insistence that stress not be considered in the only forum that actually has the power to deal with and condition the restart of a TMI power plant.

The best way to assess the significance of these risks and effects in the special case of the TMI public is to permit them to be raised and considered as the Board has recommended. To do otherwise is to assume once again that the Commission did or will think of everything[8] (even though one of the reasons given for not considering stress is that we have little competence in the area). The Board has given hypothetical examples of ways in which conditions mitigating stress might be part of any restart decision. These examples contradict the claim that "There is no way to allay that fear except not to build or operate the reactor."[9]

Furthermore, it is hard to see how the Commission can at once refuse to devote resources "to fruitless speculation about ways of mollifying irrational fears"[10] and at the same time say that "the most appropriate way to take account of fears related to TMI is, first, to assure that the technical decision on restart is sound; and, second, if the decision is to permit restart, to make sure that the public understands, through accurate and comprehensible information, fully disseminated, the basis for the Commission's determination that the plant can operate safely."[11]

Commissioners cannot take refuge in the agency's inability to deal sensibly with stress while at the same time announcing that the matter is satisfactorily dealt with by measures already taken or in prospect. For one thing, these two propositions are incompatible. For another, no one else has the authority to assess and act upon stress-related issues in the context of licensing a TMI-1 reopening.[12] For another, as the Board itself observed (at pp. 21-22), "...to conclude summarily that those fears are baseless and therefore beyond NRC jurisdiction, as urged by the licensee, may produce additional stress in that the public may perceive an attitude that their fears

[8]For another example, see "Further Commission Guidance for Power Reactor Operating Licenses," Statement of Policy, 45 FR 41739, June 16, 1980.

[9]Hendrie opinion, pp. 1-2. For more concrete examples of stress mitigation, we need look no further than last summer's krypton venting at TMI, where public anxiety persisted despite repeated NRC reassurances. This anxiety was in some measure relieved by two events that had no direct relationship to the NRC's appraisal of the radiation hazard: 1) the fact that the venting was for other reasons delayed until summer, allowing parents most concerned about it to take children from the area for as long as they wished without missing school, and 2) a Union of Concerned Scientists' report to Governor Thornburgh concluding that the krypton was not a threat to the public health - a report which was believable to some who would not accept the same conclusion from the NRC.

[10]*Ibid, p. 10.*

[11]*Ibid, p. 2. The same thought is expressed in the Ahearne opinion (p. 2).*

[12]I concur in Commissioner Gilinsky's discussion of this point. It is noteworthy that the Commonwealth of Pennsylvania seems able to do no more than urge us to take stress into account. Those who argue that by so doing we would "displace the political process" (Hendrie opinion, p. 11) have themselves fought in defense of the federally preemptive approach to nuclear licensing that has largely displaced any meaningful state political or regulatory process for dealing with citizen concerns arising from nuclear power.

are of no consequence, and that, therefore, they have no control over, or voice in the events affecting them."

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Concerns regarding the treatment of stress in our adjudicatory process overstate the problem. Courts put a dollar value on similar contentions frequently, and for our purposes this is not a narrow issue of fact that is likely to turn on witness demeanor or veracity. The testimony could largely - perhaps entirely - be restricted to health professionals, with recountings and cross-examinings of individual citizen experiences held to a minimum. The Board opinion (pp. 22-23) is sensible on this point and notes that "intervenors have indicated their plans to approach the issue on a broader, more analytical level." As an agency, we would be no less equipped to cope with testimony of this sort than we were to appraise the visual impact of the transmission lines that we ordered rerouted around a Seabrook marsh or the aesthetics on which the staff rejected the Greene County site.

Furthermore, it is important to realize that this is a special case. The TMI accident released far more radiation than any other event at a commercial power reactor in U.S. history. It also resulted in the only evacuation recommendation to citizens around a commercial power reactor. It produced many documented stress-related symptoms, events, and illnesses, and some of the stress and stress-producing factors are likely still to be present. None of these conditions hold true for other reactor sites to remotely the same degree, if at all. Consequently, taking stress into account in post-accident decisionmaking does not commit the Comission to a similar course in other proceedings, a fact which could be made expressly clear. What is being considered here is a small part of a single proceeding, and claims of a serious resource drain - a recurrent theme in various Commission efforts to avoid public challenge[13] - are once again without foundation.

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One final procedural note: Neither the order setting up this proceeding nor the Commission's rules compel a 2-2 vote to mean that stress-

[13]Hendrie opinion, p. 10. For other examples see: "Further Commission Guidance for Power Reactor Operating Licenses," Statement of Policy. 45 FR 41739, June 16, 1980.
Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438, 441-442 (March 13, 1980).
Wisconsin Electric Power Company (Point Beach, Unit 1), thus far unpublished order on request for hearing, May 12, 1980 (my dissent, p. 3).

related contentions be denied, at least at this time. Indeed, if half the Commission ultimately feels that NEPA has been violated, restart would not be allowed on a 2-2 vote. I would have preferred that the 2-2 vote be taken to mean that the matter is held in abeyance until a Commission majority can rule one way or the other. Ideally, a record on stress could have been built, to be admitted or not when a majority decision was reached. Even if no record were built, the matter should still be considered to be in abeyance while the hearings continue. The real consequence of rejecting the contentions with a promise to revisit them later is to lessen their chances of full consideration by a new commissioner who is likely to feel that the job is large enough without dredging up a matter already laid more or less to rest.

APPENDIX A

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 (Restart)**

METROPOLITAN EDISON COMPANY
(Three Mile Island Nuclear Station, Unit No. 1) **February 22, 1980**

CERTIFICATION TO THE COMMISSION ON PSYCHOLOGICAL DISTRESS ISSUES

IV. Psychological Stress is Cognizable Under NEPA

The parties opposing the view that psychological stress may be considered under NEPA do so on three major bases: 1) The requisite nexus of a direct physical environmental impact to the psychological stress is not present 2) psychological stress is not measurable, thus cannot be counted under NEPA, and 3) even if psychological stress were to be measurable, it cannot be considered in the asserted absence of a rational basis for the effect. We discuss each of these considerations in the order of the Staff's discussion. (Staff brief, pp. 29-50).

A. Direct Physical Impact is Required

In its brief the staff acknowledges that certain types of "social" or "indirect" impacts must be considered under NEPA but only when it has first been demonstrated that these indirect impacts are a result of a direct impact upon the physical environment (pp. 30-41). In support of this position the staff refers to the Act itself (p. 31), the legislative history (pp. 31-33) a line of court decisions (pp. 34-39) and the Council of Environmental Quality regulation, 44 CFR 1508.14, (pp. 39-41).

There is no closely analogous portion in the licensee's brief but the concept is related to the licensee's discussion of its view that the *bases* for community fears must be addressed, not the *fears* themselves. (e.g. pp. 31-33) This view is more appropriately considered below under our discussion of whether psychological stress must be rationally based before it may be considered. Neither the intervenors nor the Commonwealth discuss staff's "direct physical impact" argument. Even though PANE's reply brief addressed most of the staff's objections to psychological issues, it did not reply to the "direct physical impact" argument (p. 6).

The cases relied upon by the staff in its "direct physical impact" argument are representative of those involving a direct socio-economic impact not based on a significant physical impact upon the environment. Typically in these cases the armed forces undertake to close, relocate, or reduce operations at a military facility with a resultant loss of jobs or other adverse economic effect upon the surrounding community. E.g. *Breckinridge* v. *Rumsfield,* 537 F.2d 864 (6th Cir. 1976), *cert. denied* 429 U.S. 1061 (1977). Staff brief, pp. 34-38. In another case, *Monarch Chemical Works, Inc.* v. *Exon,* 466 F. Supp. 639 (D. Neb., 1979), the court held that since a correctional facility would have no significant primary effect, consideration of socio-economic effects was not required. The CEQ regulation, 10 CFR 1508.14, provides that social effects in themselves do not require an EIS, but must be considered when interrelated with natural or physical environmental effects.

Since no one else has done so it is necessary for us to point out that these cases are irrelevant to this proceeding. The psychological stress alleged by the intervenors here is related to a significant physical environmental impact: the operation of TMI-1 coupled with residual effects of the accident at TMI-2. It does not matter, as staff argues, that there has been a cost/benefit balancing in a full-scale EIS for TMI-1 and the construction and operation was found to be justified (pp. 9-14) or that this is a narrowly scoped proceeding. The very fact that an EIS and cost/benefit balancing was required is a recognition of the fact that the operation of TMI-1 involves a significant physical impact upon the environment.

B. Psychological Stress is Sufficiently Quantifiable

The staff (pp. 43-47) and other parties cite five circuit court cases to the effect that community fears and psychological stress are not cognizable under NEPA primarily because they are not amenable to quantification: *Hanly* v. *Mitchell,* 460 F.2d 640 (2d Cir. 1972), *cert. denied,* 409 U.S. 990 (1972) (*Hanly I*); *Hanly* v. *Kleindienst,* 471 F.2d 823 (2d Cir. 1972), *cert. denied,* 412 U.S. 908 (1973) (*Hanly II*); *Maryland-National Capital Park and*

Planning Commission v. *U.S. Postal Service,* 487 F.2d 1029, 1037-38 (D.C. Cir. 1973); *First National Bank of Chicago* v. *Richardson,* 484 F.2d 1369, 1375 (7th Cir. 1973); and *Nucleus of Chicago Homeowners Ass'n* v. *Lynn,* 524 F.2d 225 (7th Cir. 1975) *cert. denied,* 424 U.S. 967 (1976).[7]

The quantifiability cases are the focal point of the most vigorous debate among the parties and this sub-issue is extensively discussed by all those briefing the issue. Licensee brief, pp. 13-29; PANE main brief, pp. 16-21; PANE reply brief, pp. 9-12; Commonwealth brief, *passim,* Newberry Intervenors' brief, pp. 2-4.

The intervenors, particularly PANE and Newberry Intervenors, discuss in their filings how psychological stress may be measured in individuals and in the community. The discussion frequently is based upon tort *liability,* thus, to some extent, it becomes digressive. But addressing the *measurability* of psychological stress in terms of torts is relevant to the limited use recommended by the board below. The staff acknowledges that some quantification of stress upon the community is being undertaken by responsible organizations. Staff brief, p. 53, n. 51. Although we discuss the possible uses of this information below, we have nothing to add to the parties' briefs on how to measure psychological stress.[8]

However the consideration of whether psychological stress is sufficiently quantifiable to be considered under NEPA should also include several factors not addressed by the parties.

Precise numerical quantification is not necessary. The NRC regularly considers the aesthetic effects of its licensing actions upon the environment. Recently the NRC staff concluded in *Greene County Nuclear Power Plant* that the proposed nuclear plant would have an unacceptable aesthetic impact upon the environment surrounding the proposed plant. Final Environmental Statement (FES), NUREG-0512, January 1979, p. iv., Sec. 5.7. The staff's non-numerical measurement of the Greene County plant's aesthetic impact has apparently eliminated the proposed site; the applicant has not challanged the staff's findings. The licensing board in *Public Service of New Hampshire, et al.,* (Seabrook Station Units 1 and 2), 6 NRC 816, 826, in a findng later mooted, measured the aesthetic impacts of cooling towers for the Seabrook facility. *Id.* at 826.

In a later phase of that same proceeding, the First Circuit in *Public Service Company supra* found that the NRC was well within its discretion in

[7] *But see Chelsea Neighborhood Ass'n* v. *U.S. Postal Service,* 516 F.2d 378, 388 (2d Cir. 1975).

[8] Except that we might note that it is premature to expect parties to describe now the details of their expected evidence. The intervenors have, in our view, established a sufficient prehearing basis for the premise that the effects are measurable. To permit this evaluation is why we invited preliminary plans for the presentation of evidence on psychological stress, n. 1, *supra.*

requiring the rerouting of transmission lines, in part, to avoid a "visual insult" to the relatively pristine area involved. 582 F.2d at 80.

Another point not adequately briefed is that, in the quantifiability cases argued by the parties no mention is made of the posture of the cases there compared with here. In the *Hanly* cases, *supra, Maryland-National Capital Park and Planning Commission, supra; First Nat'l Bank of Chicago, supra; Nucleus of Chicago Homeowners, supra;* and virtually every other case discussed by the parties concerning the requirements of an EIS, the Federal agency has been sued for an asserted failure to comply with the provisions of NEPA. But in *Public Service Company, supra,* the NRC was challenged by the utility for exceeding the requirements of NEPA. In this unusual, perhaps unique situation, the exercise of the agency's discretion in affirmatively protecting the environment was ringingly supported by the court. *See* citation, pp. 5, 6, *supra* and 582 F.2d at 82.

Still another aspect of the quantifiability subissue not adequately addressed by the briefing parties is the nature of the impacting force. In the *Hanly* line of cases, and those following, the courts were confronted with the argument that the mere presence of a disadvantaged group of people could constitute a pollution to the environment of a higher socio-economic group. The term "people pollution" was disparagingly coined by Judge Friendly of the D.C. Circuit in *Maryland National Capital Park and Planning Commission, supra,* 487 F.2d, at 1037. The D.C. Circuit refused to accept a factor with such strong racial and class overtones as a consideration of national environmental policy. The Seventh Circuit in *Nucleus of Chicago Homeowners Ass'n,* 524 F.2d at 231, cited with approval the D.C. Circuit refusal. See also *Como-Falcon Coalition* v. *Department of Labor,* 465 F. Supp. 850, 857, n. 2. (D. Minn. 1978). In our proceeding of course there are no overriding national policies preventing the frank acknowledgment that the presence of the impacting force (operation of TMI-1) in iself may be considered in mitigation of its effects, which brings us to the next area of dispute among the parties.

C. Rational Basis for Community Fears

The licensee to a greater extent (brief, pp. 20-25) and the staff to a lesser extent (pp. 44-46) argue that, even if psychological stress to the community is measurable, it is not cognizable under NEPA if the fears are not justified. Both cite *First National Bank of Chicago, supra,* where the court held:

> ...we question whether such factors, [psychological and sociological effects upon neighbors] even if amenable to quantification, are properly cognizable in the absence of clear and convincing evidence that the safety of the neighborhood is in fact jeopardized.

484 F.2d at 1380 n.13.

From this ruling, licensee argues that *First National Bank* provides explicit support for the proposition that unsubstantiated fears or unfounded psychological effects are not cognizable under NEPA. Licensee brief, p. 22. Neither PANE, the Commonwealth, nor any other intervenor directly addresses this view of NEPA, so we must.

First, "clear and convincing" is a standard for the measurement of proof, the quantity and quality of evidence; its use in *First National Bank,* certainly was not intended to be a carefully considered evaluation of evidentiary standards.

More important is the fact that the scheme of nuclear energy regulation assumes that commercial energy reactors are inherently dangerous but potentially safe. Why else does the Commission consider remote siting of nuclear plants and 10-mile plume emergency planning zones? For that matter, why else are there an Atomic Energy Act and the NRC? The TMI-2 Lessons Learned Task Force Final Report states that "probably" the single most important human factor with which the nuclear industry and NRC must contend is the "mind set that future accidents are impossible." NUREG-0585, 1979, p. 2-7.

We urge the Commission to reject out-of-hand the arguments that the Commission should ignore community fears of TMI-1 operation because of the assertion that those fears are irrational. These fears differ from the fears produced by low income housing, and they are more amenable to mitigation as we discuss below.

E. Mitigation under NEPA

It was appropriate for the staff to discuss psychological stress first in terms of an EIS, but the staff erred in limiting its analysis to whether an EIS factoring psychological stress is required.

Aside from its fundamental threshhold position, the staff seems to take the position that, even if psychological distress is cognizable under NEPA, the Commission cannot consider it because it does not have the skills and resources to factor it precisely into an EIS. Thus, it would seem, the staff is arguing that, if the Commission cannot do a complete job, it should do nothing at all. We disagree. We believe that NEPA permits the NRC, within its discretion and *without an EIS,* to consider community and individual fears, and to take reasonable actions to mitigate these fears.

It is true that the NRC usually considers environmental impacts in the course of issuing an EIS or environmental impact appraisal under Section

4332(C). Sometimes the evaluation is under subsection (E) requiring the consideration of alternatives.[11] But solely because an action otherwise required by NEPA does not fall neatly into the specific mandates of Section 4332 (A) through (I), does not, in our view, prevent the Commission from exercising its general authority and responsibilities under NEPA.

In Section 4332:

> The Congress authorizes and directs that, to the fullest extent possible: (1) the policies regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter,....

The policies referred to are those set forth under Section 4331(b) including:

• • • • •

> (2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
>
> (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

• • • • •

> (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities;...

• • • • •

These general provisions of NEPA provide the Commission with the authority to take reasonable action to protect the environment even where an EIS is not required, or as it may be in this case, not possible. In a review of NRC and AEC decisions we have been unable to find specific authority for our view. The cases, as we noted above, have been under circumstances where the impact has been deemed sufficient to trigger an EIS under Section 4332 (C) (or a negative statement supporting an environmental impact appraisal). However there is no trend that we can identify in Commission-NEPA precedents inconsistent with our recommendation. The conditioning of licenses has not been dependent upon whether, in a

[11]Section 4332 (E) requires agencies to "...study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;..."
We do not depend upon this subsection because we believe that the Commission's authority to protect the environment is much more fundamental.

cost/benefit balancing, the overall balance was tipped. In *Detroit Edison Company* (Greenwood Energy Center, Units 2 and 3) ALAB-247, 8 AEC 936, 944-45 (1974), the Appeal Board discussed the relationship between the Commission's authority to condition licenses and the final balancing under NEPA:

> Nor is the Commission's authority restricted, as the applicant would have it, to voting the license up or down depending on whether the overall "cost/benefit ratio" is tilted against the facility by the location of its transmission lines. On the contrary, under NEPA, an agency is also obliged to minimize to the extent reasonably practicable the environmental aftermath of its actions. *Environmental Defense Fund* v. *Corps of Engineers,* 492 F.2d 1123, 1135 (5th Cir. 1974); *Environmental Defense Fund* v. *Froehlke,* 473 F.2d 346, 353 (8th Cir. 1972); Council on Environmental Quality Guidelines, 40 CFR 1500.2(b) (1974 rev.). [Footnote omitted] As the District of Columbia Circuit has succintly put it:
>
> > Clearly, it is pointless to 'consider' environmental costs without also seriously considering actions to avoid them. [*Calvert Cliffs, supra,* 499 F.2d at 1128]. Our own decisions reflect that understanding. We have held that NEPA requires nuclear facilities to be designed to minimize environmental harm to the extent reasonably practicable before the final balance is struck. The cooling tower cases are a clear example. We have reiterated in those decisions that the relative environmental merits and costs of the various cooling systems be evaluated for each facility to insure "that the optimum alternative may be selected" before "[f]inally, an overall balancing of costs and benefits occurs...." [Citations omitted] It would overturn those decisions to rule in this case that environmental damage which can be avoided at reasonable cost is nonetheless permissible, provided only that the ultimate, overall cost/benefit ratio remains favorable to a nuclear plant. Such a result is unwarranted; it would devitalize NEPA. We are neither prepared nor empowered to inter that Act.

Id. at 444-45.

In *Public Service Company, supra,* the First Circuit described the reach of NEPA quite simply:

> The directive to agencies to minimize all unnecessary adverse environmental impact obtains except when specifically excluded by statute or when existing law makes compliance with NEPA impossible.

582 F.2d at 81.

As we noted, the board, if permitted, would consider psychological stress for the purpose of mitigating community fears about the operation of TMI-1. The licensee notes throughout its brief that the correct way to address community fears is to remove the bases for them. Licensee's brief, e.g., pp. 18, 23, 30-33. Certainly it is true that the best way to minimize any psychological stress in the communities around TMI-1 is to make the plant safe or not allow it to operate. We do not need further authority from the

Commission to approach community fears in this manner. What we may need is the jurisdiction to impose reasonable, cost-effective conditions on the operation of TMI-1 directly, and perhaps solely, for the purpose of mitigating psychological stress. For example, if the record should demonstrate that the licensee has complied with the law, regulations and reasonable standards of public health and safety in its radiological monitoring program, but that, say, additional continuous off-site monitoring visible by the residents around the facility would reduce apprehension in the community, and, in a mini-cost/benefit balancing, it is found to be reasonable, we should have the authority under NEPA to require this amenity.[12]

Further, the opportunity for the public in the vicinity of TMI to express through the NRC hearing process their fears and ideas for the alleviation of their fears can in itself have a substantial mitigating impact in the resolution of any residual psychological stress from the accident, and the proposed restart of TMI-1. On the other hand, to conclude summarily that these fears are baseless and therefore beyond NRC jurisdiction, as urged by the licensee, may produce additional stress in that the public may perceive an attitude that their fears are of no consequence, and that, therefore, they have no control over, or voice in the events affecting them.[13]

Even if the Commission does not permit the consideration of psychological stress issues as such, these issues may collaterally relate to other issues which must be considered in the proceeding. Community fears may be a factor in evaluating the effectiveness of the licensee's emergency response plan. The licensee's sensitivity to community fears and licensee's credibility may indirectly relate to its management capability to formulate and implement emergency response plans. Conversely, the effectiveness of plans may rest on the public's education, its preparation to take action and its confidence in the plans. To the extent that psychological stress may be a factor in these other issues, we do not believe that additional authority from the Commission is required. We are seeking only the authority to address directly and to mitigate fears which may result from the proposed operation of the facility.

The board would not anticipate a parade of witnesses describing their personal experiences during the TMI-2 accident and their concerns about

[12]This example has no record basis. We use it solely as an illustration. It is, however, an area of interest to the board which may deserve examination.

[13]Titchener, J.L. and F.T. Kapp, 1976, "Family and Character Change at Buffalo Creek." *Am. Jour. Psychiatry, 133* (3), 295-299; Lifton, R.J. and E. Olson, 1976. "The Human Meaning of Total Disaster: The Buffalo Creek Experience." *Psychiatry, 39,* 1-18.

restarting TMI-1.[14] This approach would soon become cumulative and, in any event, would be of doubtful value. It would provide little information beyond what the board has already observed during the public limited appearances. As we noted above, the staff's brief contains references to studies which may be valuable and individual intervenors have indicated their plans to approach the issue on a broader, more analytical level.

[14]The Consumer Advocate of Pennsylvania has submitted an instructive brief addressing the potential problems of stress caused to witnesses testifying on this subject. p. A-28.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **PR-50 (44 FR 75167)**

FINAL RULE ON EMERGENCY PLANNING **December 5, 1980**

Responding to a petition for reconsideration and for a stay of the 15-minute notification capability requirement in its emergency planning rule, the Commission determines that insufficient evidence is presented to justify granting the requested relief.

MEMORANDUM AND ORDER

On November 12, 1980, the Duke Power Company and the Texas Utilities Generating Company (hereinafter "petitioners") moved the Commission for reconsideration and for a stay of the 15-minute notification capability requirement in the emergency planning rule. 10 CFR Part 50, App. E, IV, D, 3; 45 FR 55402, 55412 (August 19, 1980). The Commission has received an extensive analysis of the evidence presented in the motions from its technical staff and believes that insufficient evidence is presented to justify immediate modification or stay of the 15-minute requirement. That analysis is enclosed and describes more fully the Commission's reasons for denial of the relief requested.

Petitioners object to the rule's requirement that a licensee must demonstrate that a public notification system exists which is designed "to have the capability to essentially complete the initial notification of the public within the plume exposure pathway [10-mile emergency planning zone] EPZ within about 15 minutes [of notice by the facility of a severe accident]." 10 CFR Part 50, App. E, IV, D, 3, 45 FR 55402, 55412 (August 19, 1980). Petitioners do not cite any alleged inadequacy in the record of the

emergency planning rulemaking itself, but base the motions wholly on information that post-dates the promulgation of the final rule. First, they argue that information generated by Dr. Stratton and his colleagues suggesting an overestimation of the quantity of iodine released in an accident supports a substantial modificaton of the 15-minute notice requirement. Petitioners argue that the WASH-1400 figures, which form part of the basis for the 15-minute rule, identify radioactive iodine as a significant early contributor to accident risk. Petitioners conclude that this new evidence which suggests a smaller risk to the public casts substantial doubt on the continuation of the 15-minute requirement. Second, petitioners rely on testimony given by a senior Federal Emergency Management Agency (FEMA) official on August 18 to the Nuclear Oversight Committee, that the performance criteria for the 15-minute rule are impossible to meet. He expressed his view that a 15-minute rule could be applied to a smaller distance effectively, about three miles from the plant, with a somewhat longer notice time out to 10 miles from the plant.

To succeed in their motion, petitioners concede that they must show, among other things, that this informaton is so significant that a different result would have been reached with regard to the 15-minute notification rule had that information been considered initially. Motion at 6. Based on the staff's analysis, the Commission does not believe petitioners have satisfied this burden.

The Commission was recently briefed on the Stratton information. That information does not at this point support a stay or immediate modification of the 15-minute rule. As is explained in the staff's accompanying technical analysis, in the Stratton letter itself, and by several of the briefing principals (von Hippel, Bernero), the Stratton, *et al.* assumptions about the quantity of iodine released are limited to those situations in which containment integrity holds; this is not the assumption behind the 15-minute rule. Thus, the Stratton position on iodine releases does not apply to a number of important possible accident sequences which the 15-minute rule is designed to mitigate. The Stratton information also concerns only radioactive iodine and not other isotopes which might also be released in worst accident situations. *See* Transcript of November 18 Briefing, at 140; NUREG-0396; EPA 520/1-78-016, Joint EPA-NRC Task Force Report, "Planning Basis for the Development of State and Local Emergency Response Plans in Support of Light Water Nuclear Power Plants," at 22-23 and Appendix I (December 1978) (citing noble gases, tellurium and ruthenium, as well as cesium and iodine). Thus, there is a range of possible accidents for which the 15-minute rule is applicable. That kind of prompt notice is required not only in the unlikely situation where immediate releases are anticipated but also for the situation where the potential severity of an accident goes

unnoticed for several hours and the time for public notice is shorter. Prompt notice also increases the number of protective action options avilable for responsible governmental officials. *See* Staff Technical Analysis at 4. The Stratton information is, therefore, insufficient to justify either a modification or stay of the rule.

As to the FEMA testimony cited by petitioners, it should first be noted that it did not take issue with the FEMA-NRC agreement that the NRC set the nature of the hazard for which offsite planning is required, including the timing of releases and the planning distance. The point relied on is an opinion that 100 percent effective notice out to 10 miles from the plant was impossible. This, however, was recognized by the NRC in the final rule and this view adds nothing new to this discussion. Moreover, subsequent to the August 18 testimony, FEMA agreed with the NRC that there ought to be a design objective for the 15-minute rule out to 10 miles and agreed to the design objectives described in NUREG-0654, Revision 1. In the January, 1980 version of NUREG-0654, FEMA and NRC described the design objective for the notification system as assuring that 100 percent of the population within 5 miles of the plant and 90 percent of the population within 5 and 10 miles of the plant could receive notice in 15 minutes. In the November revision, FEMA and NRC modified that guidance to be essentially 100 percent of the population within 5 miles of the plant and no specified percentage out to 10 miles. The NRC and FEMA still insist, however, that a system be designed to provide both an alert signal and an instructional or informational message to the population within the 10-mile EPZ within 15 minutes. The lack of a specified percentage from 5 to 10 miles is to allow planners the flexibility to design the most cost-effective system to meet this general objective.[1] Therefore, the FEMA testimony is not inconsistent with the 15-minute rule and is not sufficient to warrant modificaton or stay of the rule. In its implementation of this part of the rule, the NRC intends to be guided by FEMA's judgment as to what times and systems are feasible.

Finally petitioners object that the notification system imposed by the NRC is expensive and unnecessary. In the rule, the Commission recognized that such a system might be expensive, as much as $1 million per site. NUREG-0685, Environmental Assessment on Final Rules at 7 (August 1980).[2] The costs were not considered out of line with the increase in public

[1]NUREG-0654, FEMA-REP-1 Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," at 3-3, 3-4 (November 1980).

[2]The final rule does not specify what kind of system, who should install it, or who must bear the cost. The staff has indicated that several States have passed, and others are considering, legislation to provide the cost of conformance.

protection and Duke's costs would seem to be even less than that.[3] It is worth noting that virtually every other utility has taken steps to comply with the 15-minute rule. In promulgating the rule, the Commission noted that there was no disagreement that public notification was an essential element of an effective emergency plan and responded to a charge that this requirement was "arbitrary and unworkable" (45 FR at 55407):

> In determining what that [public notification] criterion should be, a line must be drawn somewhere, and the Commission believes that providing as much time as practicable for the taking of protective action is in the interest of public health and safety. The Commission recognizes that this requirement may present a significant financial impact and that the technical basis for this requirement is not without dispute. Moreover, there may never be an accident requiring using the 15-minute notification capability. However, the essential rationale behind emergency planning is to provide additional assurance for the public protection even during such an unexpected event. The 15-minute notification capability requirement is wholly consistent with that rationale.

This ratonale is unaltered by petitioners' filings with the Commission.

Based on the above considerations and the Staff Technical Analysis which is appended hereto, the Commission denies the relief requested.

Commissioner Hendrie concurs in the result and will provide a statement of his separate views at a later date.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, DC.
this 5th day of December 1980

[3]As described more fully in the staff analysis, petitioners cite costs for four Duke Power sites, only two of which are in operation or nearly in operation (Oconee and McGuire). Costs are also described for both a 68 decibel (db) and 60 db siren system when NRC/FEMA guidance only recommends the less expensive 60 db system. Taking these limitations into account, the cost for Duke Power is about $1 million per site, which compares favorably with the cost projected by the staff.

STAFF TECHNICAL ANALYSIS OF

MOTION FOR RECONSIDERATION

Summary of the Action Requested

On November 12, 1980, the Duke Power Company and the Texas Utilities Generating Company (hereinafter "petitioners") moved the Commission for reconsideration of its requirement that applicants and licensees must demonstrate that a public notification system exists designed "to have the capability to essentially complete the initial notification of the public within the plume exposure pathway [10 mile emergency planning zone] EPZ within about 15 minutes [of notice by the facility of a severe accident]." 10 CFR Part 50, App. E, IV, D, 3, 45 FR 55402, 55412 (August 19, 1980). The instant motion is not based on any alleged inadequacy in the record of the emergency planning rulemaking itself, but is based wholly on information that post-dates the promulgation of the final rules. First, petitioners argue that information generated by Drs. Stratton, Malinauskas, and Campbell, sent to the Chairman in a letter dated August 14, 1980, suggesting an overestimation of the quantity of iodine released in an accident supports a substantial modification of the 15-minute notice requirement. Petitioners argue that the Reactor Safety Study (WASH-1400) figures, which form part of the basis for the 15-minute rule, identify radioactive iodine as a significant early contributor to accident risk. Petitioners conclude that this new evidence, which suggests a smaller early accident risk to the public, casts substantial doubt on the continuation of the 15-minute requirement for the full ten-mile EPZ and proposes to apply it only to the closest two to three miles. Second, petitioners point to testimony given by a senior FEMA official on August 18 to the Nuclear Oversight Committee, that the design criteria proposed in January 1980 for the 15-minute rule are impossible to meet in practice. The FEMA official expressed his view that a 15-minute rule could be applied to a smaller distance effectively, about three miles from the plant, with a somewhat longer notice time out to 10 miles from the plant. Petitioners concede that, to succeed in their motion, they must demonstrate that the information presented is so significant, that, had it been considered initially, the 15-minute requirement would have been different. Motion for Reconsideration at 6. The technical staff — representatives of the Office of Inspection and Enforcement and the Office of Standards Development — in conjunction with the Office of the General Counsel and Office of the Executive Legal Director, has analyzed the new information raised by petitioners, compared it to the record of rulemaking underlying the final rules, and recommend that the motion be denied on the merits. The following discussion explains the basis for the Commission's

action in promulgating the 15-minute requirement and why the information offered by the petition is insignificant to warrant modification of that requirement.

Commission Consideraton of 15-Minute Notification Capability Requirement

A basic requirement for licensee emergency plans is a notification system, to assure both that the licensee has the means to notify appropriate governmental officials in a timely manner and that those officials, in turn, have the capability to notify the public in a timely manner. 10 CFR Part 50, App. E, IV, D, 1, *supra.* In addition, the NRC requires that the public be kept generally informed of basic emergency planning information such as notification procedures and protective actions to be taken. *Id.,* IV, D, 2. In an accident situation, the licensee is required to be able to notify responsible governmental officials within 15 minutes of declaring an emergency of the seriousness and nature of the event. *Id.,* IV, D, 3. In turn, the licensee must show that those officials are able to provide effective notice to residents within 10 miles of the facility within 15 minutes of notice by the licensee. *Id.* This notice to the public, by means of an alert system, would cause the public to turn to emergency broadcast or other systems for further instructions. In effect, the NRC requires a complete procedure that would enable the public to be notified that a serious accident may be in progress within about 30 minutes of the licensee declaring an emergency. The latter 15 minutes of this time — in which actual public notice by responsible governmental officials may be given — is the sole focus of the instant petition.[1]

The Commission discussed the 15-minute notification capability requirement in detail at open public meetings with the NRC staff and with

[1]The full text of the requirement is set out here:

> 3. ...The licensee shall demonstrate that the State/local officials have the capability to make a public notification decision promptly on being informed by the licensee of an emergency condition. By July 1, 1981, the nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. The design objective shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes. The use of this notification capability will range from immediate notification of the public (within 15 minutes of the time that State and local officials are notified that a situation exists requiring urgent action) to the more likely events where there is substantial time available for the State and local governmental officials to make a judgment whether or not to activate the public notification system. Where there is a decision to activate the notification system, the State and local officials will determine whether to activate the entire notification system simultaneously or in a graduated or staged manner. The responsibility for activating such a public notification system shall remain with the appropriate government authorities.

representatives of the industry and affected governments in deciding what the requirement should be.

On June 18, 1980, the Commission met with the staff and discussed at length the feasibility of a 15-minute notification time (as opposed to 30 minutes or some other longer time). Public Meeting, Staff Presentation of Final Rulemaking to the Nuclear Regulatory Commission, pages 17-42 (June 18, 1980). The staff explained that it had concluded, after study and evaluation and an analysis of the comments received, that a public notice system should be designed to provide the maximum degree of time within which to take protective actions. For example, the staff noted that in a very severe accident, when releases of radiation could occur within about 30 minutes time, immediate notice and action would be necessary. In addition, the staff described that an accident's potential for severe consequences might not be recognized until several hours into the accident, leaving only a short time actually available to effect protective actions. Where a system exists for prompt notice, governmental officials will have more options available for protective actions, including evacuation itself which may take from two to ten hours. June 18 Transcript, at 18-19. The discussion also focused on whether the State and local goverments could take appropriate protective actions during the 15 minutes that was initially allotted to their decisionmaking process. *Id.*, at 31-32. The Commission decided at the June 18, 1980 meeting, after reviewing the rulemaking record to date, that (1) more flexibility was needed for the State and local goverment decisionmaking process, (2) that the Supplementary Information should include a provision for the acceptability of a staged or segmented notification system thereby permitting the use of only part of the 10-mile notification system, and (3) that the final rule expressly recognize that an absolute (100% effective) notification of every individual within the emergency planning zone is not required and is probably impossible; but that the NRC's objective is to come as close to that as possible. *See, e.g., id.*, at 26-27, 31, 39-42. Finally, the Commission noted that the Federal Emergency Management Agency (FEMA) would make determinations on the adequacy of the offsite notice system to meet the criteria and that the NRC would rely on that judgment. *Id.* at 26-27.

At a public meeting on June 25, 1980, the Commission discussed the proposed final rules with three panels, one each representing the nuclear industry, State and local goverments, and special interest groups. The areas of concern raised by the Duke Power and Texas Utilities motions were discussed at length at that meeting. Public Meeting with Industry, State and Local Governments and Special Interest Group Panels on Emergency Planning and Preparedness Rulemaking, pages 12-19, 31-34, 39-46, 78 and 79 (June 25, 1980). During the panel discussions, industry spokesmen,

including one of petitioners' counsel and a Duke Power executive, agreed with the need to upgrade emergency plans and preparedness but were strongly opposed to the requirement for the 15-minute notification capability. Their arguments were based on (1) the apparent lack of a strong technical basis and/or justification, (2) the possible negative effects on the protection of the public health and safety, and (3) cost.

In a dialogue with the Industry Panel, the Commission noted that the 15-minute requirement was not as stringent as intially characterized by the Panel, that it only required that the equipment or other means be installed capable of effective public notice within 15 minutes and that it does not preclude independent State and local decisions on when or to what extent the system will be actuated. June 25 Transcript, at 14-17. The industry panel noted that they would prefer deferring the 15-minute rule for the full 10-mile EPZ but would not object to such rapid notice to about "two to three miles, as an interim situation." *Id.* at 40. In response to a Commission question, the representative from Duke Power indicated the principal objection was "expense at this time with no technical justification for having to make that expense." *Id.* at 42. That panel also indicated that State and local officials opposed it. *Id.* at 42-43.

At this same meeting, however, the panel of State and local government officials considered that the 15-minute notification capability requirement, with some modification and clarification, was appropriate. *Id.* 77-79.

On July 3, 1980, the NRC staff responded to the panel presentations at the June 25 Commission meeting. At this meeting, the staff presented the Commission with modifications to the proposed final rules to accommodate many of the suggestions made by the Panels. The Commission again discussed the appropriatness of 15 minutes notification capability (as opposed to some longer time) and how the system might be used in practice. Public Meeting with NRC Staff (July 3, 1980). At that time, the Commission accepted modifications to provide more flexibility to State and local governments.

Lastly, the Commission held a public meeting on July 23, 1980 for a discussion and vote on the Emergency Preparedness Final Regulation. After lengthy discussions the Commission voted on the final regulation that was published in the *Federal Register* on August 19, 1980 (45 FR, *supra* at 55407). The Final Rules included the following explanation in the Supplementary Information that reflected the significant deliberations concerning the 15-minute notification capability requirement:

> Among the possible alternatives to this requirement are a longer notification time, a notification time that varies with distance from the facility, or no specified time. In determining what that criterion should be, a line must be drawn somewhere, and the Commission believes that providing

as much time as practicable for the taking of protective action is in the interest of public health and safety. The Commission recognizes that this requirement may present a significant financial impact and that the technical basis for this requirement is not without dispute. Moreover, there may never be an accident, requiring using the 15-minute notification capability. However, the essential rationale behind emergency planning is to provide additional assurance for the public protection even during such an unexpected event. The 15-minute notification capability requirement is wholly consistent with that rationale.

The Commission recognizes that no single accident scenario should form the basis for choice of notification capability requirements for offsite authorities and for the public. Emergency plans must be developed that will have the flexibility to ensure response to a wide spectrum of accidents. This wide spectrum of potential accidents also reflects on the appropriate use of the offsite notification capability. The use of this notification capability will range from immediate notification of the public (within 15 minutes) to listen to predesignated radio and television stations, to the more likely events where there is substantial time available for the State and local governmental officials to make a judgment whether or not to activate the public notification system.

Any accident involving severe fuel degradation or core melt that results in significant inventories of fission products in the containment would warrant immediate public notification and consideration, based on the particular circumstances, of appropriate protective action because of the potential for leakage of the containment building. In addition, the warning time available for the public to take action may be substantially less than the total time between the original initiating event and the time at which significant radioactive releases take place. Specification of particular times as design objectives for notification of offsite authorities and the public are a means of ensuring that a system will be in place with the capability to notify the public to seek further information by listening to predesignated radio or television stations. The Commission recognizes that not every individual would necessarily be reached by the actual operation of such a system under all conditions of system use. However, the Commission believes that provision of a general alerting system will significantly improve the capability for taking protective actions in the event of an emergency. The reduction of notification times from the several hours required for street-by-street notification to minutes will significantly increase the options available as protective actions under severe accident conditions. These actions could include staying indoors in the case of a release that has already occurred or a precautionary evacuation in the case of potential release thought to be a few hours away. Accidents that do not result in core melt may also cause relatively quick releases for which protective actions at least for the public in the immediate plant vicinity, are desirable.

Some comments received on the proposed rule advocated the use of a staged notification system with quick notification required only near the plant. The Commission believes that the capability for quick notification within the entire plume exposure emergency planning zone should be provided but recognizes that some planners may wish to have the option of selectively actuating part of the system during an actual response. Planners

should carefully consider the impact of the added decisions that offsite authorities would need to make and the desirability of establishing an official communication link to all residents in the plume exposure emergency planning zone when determining whether to plan for a staged notification capability.

The motion before the Commission does not fault any aspect of the Commission's deliberations on the rule[2] but only cites "new information."

Response to "New Information"

The new information (Stratton, *et al.* on iodine release and the FEMA official's statement) and other factors (such as cost impact) raised by petitioners are insufficient to support the relief requested.

A. Petitioners rely on the August 14 letter of Drs. Stratton, *et al.* which suggests an overestimation of radioactive iodine released in specific kinds of accidents. The Commission has been briefed on this subject by Drs. Stratton, *et al.* and other experts from the technical staff, the Electric Power Reactor Institute, and Princeton University. Thus, in responding to this information, the staff has considered, not only the evidence in the motion itself, but also the public record created by the briefing (*see* SECY-80-504, Iodine Releases During Reactor Accidents (November 13, 1980) and Transcript and Meeting Memoranda for November 18, 1980). The staff believes that petitioners' reliance is misplaced, given the authors' restriction of their theory to only certain core melt sequences and due to the role of isotopes, other than iodine, in calculations of health effects in the worst accident sequences. *See* NUREG-0396, EPA 520/1-78-016, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," at 22-23 and Appendix I (December 1978).

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[2]In the consideration of the emergency planning final rules the Commission's staff outlined the cost installation and maintenance of a 15-minute notification system out to 10 miles. In the Environmental Assessment for the Final Rules, NUREG-0685 at 7 (August 1980), the following discussion of those costs appears:

> [An earlier NRC Staff Cost Analysis] did not contain estimates of the costs of installing warning systems that would have a capability of notifying (within 15 minutes) everyone within 10 miles that a site emergency was in progress. Estimates provided by commenters on the draft Environmental Assessment indicate an installed cost of around $500,000 plus a nominal yearly maintenance cost. This will bring typical costs to about one million dollars per plant. Costs incurred in regard to multiple-unit plants will result in lower per unit costs. Costs per unit in areas with more individual governmental authorities involved and/or higher populations will be higher.

Thus, in promulgating the requirement the Commission considered that the cost could be as much as $1 million per site for the life of the facility based on average industry submissions.

First, the Stratton theory is limited by its authors only to those cases where containment integrity is maintained. *See* Stratton letter p. 1 and Staff Memorandum of W. Pasedag (October 30, 1980) attached to SECY-80-504. The emergency planning rule is not so limited. Containment failure cases are among those situations where prompt public notification is important because the potential for offsite health effects would warrant immediate measures offsite to minimize the impact of the releases on the public. *See* NUREG-0396, Appendix I, 45 FR at 55407. *See also* November 18 Briefing Transcript, at 140. Should the theory of Stratton, *et al.* prove correct, it could affect offsite consequences from at least some core melt sequences in which containment integrity is maintained by reducing the amount of airborne iodine available for release from the facility. Whether this theory is correct may affect the computation of total risk to the public from a nuclear power plant (considering both consequences of the accident and the probability of such a release) but does not affect the range of contingencies which emergency plans are designed to mitigate.

Second, the staff concludes that the presence or absence of iodine would not affect the timing of emergency response in severe core melt sequences. Decisions on offsite actions during severe emergencies are based on actual plant conditions. The knowledge of whether certain isotopes, such as iodine, are in the containment atmosphere and potentially available for release is an important facet of decisions which must be made on precautionary offsite protective actions. The ability to make this determination is an important part of post-TMI in-plant requirements. However, in worst-accident sequences, because other radioactive isotopes, (*e.g.*, noble gases, tellurium and ruthenium). also contribute to the potential risk (NUREG-0396, at 22-23), the presence or absence of iodine, by itself, does not warrant a change to the 15-minute rule. Finally, in some cases, the timing of emergency actions is also affected by how quickly an accident's potential severity is recognized and not by the presence or absence of particular isotopes. *See, e.g.,* June 18 Commission Meeting Transcript, *supra.* That rationale for prompt notification is unaffected by the Stratton, *et al.* information. The staff believes that this information raises generic concerns that require general comprehensive treatment and intends to treat it in that way. Immediate modification of the 15-minute requirement is not justified.

B. Extensive reliance is placed by petitioners on an opinion of a FEMA official, expressed in August 1980, questioning the practicality of a 15-minute notification capablity within 10 miles. The Supplementary Information for the NRC final rules sets forth at some length the rationale for the Commission's decision. The Final Rule acknowledged that 100% effective notification is not guaranteed by this requirement. Moreover, the rules

specifically allow use of such a system in a phased manner and for less than the full 10 miles so long as the capability to activate the total system promptly if needed is also provided. The statement of the FEMA official adds nothing new to this discussion.

Both FEMA and NRC have recognized the primacy of NRC's role in determining the extent of the hazard for which offsite planning is required, including the types of releases, the timing of releases and the distances for which plans should be laid. *See,* for example, the exchange of letters between H. Denton and F. Camm on February 14, 1980, concerning emergency planning requirements for low-power licenses. The cited testimony does not deny that position but only questions whether some other kind of design criteria for the system which would be better. Subsequent to the testimony, however, in September, the NRC and FEMA joint staff guidance on the public notification capability, Appendix 3 to NUREG-0654/FEMA-REP-1, was revised to FEMA's satisfaction modifying earlier guidance to delete a quantitative public notice effectiveness figure as a design objective for the system in the five- to ten- mile distance. Thus, where earlier guidance had insisted that the system have the capability to provide notice within 15 minutes to 90% of the public between five to ten miles from the plant, the agencies now expect the initial notification system to assure direct coverage of essentially 100% of the population within five miles of the site, and special arrangements to be made to assure 100% coverage within 45 minutes of the population, who may not have received the initial notification, within the entire plume exposure EPZ. No quantitiative number has been set for the percentage of population within the five- to ten-mile plume exposure EPZ who must be notified within the initial 15 minutes. NUREG-0654, Rev. 1, at 3-3. The lack of specific percentage is to permit flexibility in system design and permits planners to install a cost-effective system consistent with the general objective. *Id.* at 3-4. Moreover, while there may be a cost difference between systems designed to cover three miles and systems designed to cover 10 miles, there is no technical or conceptual difficulty in designing the system for the larger area. The NRC, however, has always recognized that, in practice, the licensee could not guarantee 100% effectiveness. Thus, the FEMA testimony is insufficient to warrant the relief requested.

C. The other factors raised in petitioners' motions are likewise insufficient to justify a change.

The cost information in the motions for reconsideration and for stay are claimed as impacts to Duke Power as a consequence of a failure to stay the rule. In fact, however, only two of the sites require immediate action because of the existence of operating units or a decision on a new operating license. Furthermore, costs are quoted for a siren coverage at both a 60

decibel (db) level and a 68 db level. NRC/FEMA guidance applicable to siren systems is for a 60 db coverage. The lower bound of the cost range quoted would therefore appear more appropriate. On a per-site basis these costs are well within the range considered by the Commission during the development of the rule.[3]

In addition, the system described by petitioners is only one way of satisfying NRC requirements. For example, only costs for a siren system are presented although a siren system is not mandated by the NRC rule or staff guidance in this area. In areas of low population, tone alert units located in individual homes may be more cost-effective. The NRC certainly does not forbid that or any other alternative system.

Even if the NRC were to accept the petitioners' proposed interim system, some notification system for the three- to ten-mile distance would be provided and that cost must be subtracted from the claimed impact costs. No specifics of such an alternative system or justification of its adequacy with respect to timing are provided. It is highly unlikely that such a system would be without significant cost and an appropriate judgment of the net impact of the 15-minute design objective would, of course, be reduced by the cost of any alternative.

Moreover, while there is a direct cost impact of the NRC rule in this area, the rule does not specify who should bear the cost and certanly does not preclude purchase of public notification systems by offsite authorities. Petitioners have also not demonstrated that they must expend these sums because off-site authorities cannot or will not do so, or, in any case, that these costs are not recoverable in the State rate systems. Finally, costs of offsite preparedness resulting from the NRC rule are a small fraction of in-plant related costs resulting from TMI-related Commission requirements (perhaps 10% of the in-plant costs on a single-unit site and proportionally less on multi-unit sites). This is not an unreasonable burden for emergency preparedness, a safety area whose importance has been deemed vital to plant operation by the Commission. 45 FR at 55407.

As a final consideration, the motions for reconsideration and stay reflect a limited perception of the conditions under which such a system would be used and of the actions which the public might be requested to take under such conditions. Petitioners apparently assume that the only use of such a

[3]Using both the lower bound of the Duke figures (that is, a 60-decibel (db) figure) out to 10 miles distance for the Oconee (three-reactor) site and the McGuire (two-reactor) site [Tucker Affidavit at 2-3], it is expected that installation cost will be $710,700 and maintenance and other costs will be $299,000 for a 30-year life or about $1 million total for each site. These projections are equivalent to the figures considered average for a site and found acceptable by the Commission. In addition, only a fraction of the $710,700 figure constitutes an immediate expenditure for the purchase of equipment. The other costs will be expended for installation and over the life of the system.

system would be to advise the public to evacuate. This is not the case. Of equal importance is the ability to advise the public to take shelter (stay inside their homes) immediately after event initiation or in any subsequent time during the evolution of an accident (for example, because of a change in wind direction changing the trajectory of material already released from the plant). The need for advance warning (lead times) for orderly evacuation are not mentioned in the request but are an important factor in the ability to take protective action. Prompt notification can substantially reduce the time required to clear an area when, for example, containment failure may be predicted based on increasing pressure within the reactor containment. As is explained above, the Commission's consideration of the necessity for prompt public notice included these factors. That determination is not served by cutting back on the level of protection to be given to the public.

Conclusion

Accordingly, the evidence presented is not sufficient, in the staff's view, to justify any change in the requirement. Based upon the above analysis, the staff believes that a modification to the notification capability requirement is not supported by the evidence offered by petitioners. The request should be denied.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-389**

FLORIDA POWER AND LIGHT COMPANY
(St. Lucie Nuclear Power Plant, Unit 2) **December 12, 1980**

Upon reconsideration of its previous determination not to review ALAB-603, 12 NRC 30 (1980), the Commission affirms the construction permit amendments ordered therein, but decides to exercise its authority to review *sua sponte* certain generic implications of the Appeal Board's decision.

NRC: AUTHORITY (RECONSIDERATION)

The ability to reconsider is inherent in the ability to decide in the first instance. *Trujillo* v. *General Electric Company,* 621 F.2d 1084, 1086 (10th Cir. 1980), *Albertson* v. *FCC,* 182 F.2d 397, 399 (D.C. Cir. 1950). Reconsideration is at the discretion of the Commission. *United States* v. *Pierce Auto Freight Lines,* 327 U.S. 515, 535 (1940).

NRC: AUTHORITY (RECONSIDERATION)

The Commission has 60 days to reconsider an otherwise final decision because an agency retains jurisdiction to reconsider any decision until the time to initiate judicial review of that decision is expired and under the Hobbs Act, 28 USC 2347, the time to initiate judicial review of a Commission decision expires 60 days after the date of that decision. *American Farm Lines* v. *Black Ball Freight,* 397 U.S. 523, 540 (1970), *Pan*

American Petroleum Corp. v. *Federal Power Comm'n*, 322 F.2d 999, 1004 (D.C. Cir. 1963).

MEMORANDUM AND ORDER

The Commission has decided to reconsider its previous determination not to review the decision of the Atomic Safety and Licensing Appeal Board in ALAB-603. Upon reconsideration, the Commission has determined to exercise its authority to review on its own motion certain implications of ALAB-603. 10 CFR 2.786(a). The reasons for this decision and the issues for review are discussed below.

I.

In ALAB-603, the Appeal Board found that the total loss of on-site and off-site AC power (station blackout) must be considered a design basis event for St. Lucie, Unit 2. This conclusion was based on calculations which showed that the probability of station blackout could exceed some threshold values in the Standard Review Plan that are used by the staff to aid in its determination as to whether or not protective measures are needed for certain off-site hazards. Consequently, the Board directed that the applicant's Final Safety Analysis Report must include an assessment demonstrating the plant's ability to operate through such an event, and a detailed training program for station operation during a blackout transient and for the restoration of AC Power. No party petitioned for Commission review of that decision.

On October 14, 1980, the time expired for Commission *sua sponte* review of ALAB-603.[1] Subsequently, on November 10, 1980, the Director, Nuclear Reactor Regulation (NRR) responded to the Chairman's request for further information on the status of Task Action Plan A-44-Station Blackout (TAP A-44). That response included a memorandum from the Director, Division of Systems and Reliability Research, to the Director, NRR.[2] That memorandum alerted the Commission to certain staff positions which had not been presented in the staff's filings before the Appeal Board and the Commission. These staff positions raise important generic issues regarding the impact of the Appeal Board's decision on the regulatory process. As a

[1]The Commission's time to consider whether to take review had been extended to permit the parties to respond to Commissioner Hendrie's Memorandum to Counsel for the Parties disclosing his prior involvement with St. Lucie, Unit No. 2.

[2]Copies of these memoranda have been served on the parties.

result, Commissioner Hendrie requested the Commission to reconsider the decision not to review ALAB-603.[3]

The ability to reconsider is inherent in the ability to decide in the first instance. *Trujillo* v. *General Electric Company,* 621 F.2d 1084, 1086 (10 Cir. 1980), *Albertson* v. *FCC,* 182 F.2d 397, 399 (D.C. Cir. 1950). Because judicial review of final Commission orders is governed by the Hobbs Act, 28 U.S.C. 2347, the Commission has 60 days in which to reconsider an otherwise final decision. *American Farm Lines* v. *Black Ball Freight,* 397 U.S. 523, 540 (1970), *Pan American Petroleum Corp.* v. *Federal Power Comm.,* 322 F.2d 999, 1004 (D.C. Cir. 1963). Reconsideration is at the discretion of the Commission. *United States v. Pierce Auto Freight Lines,* 327 U.S. 515, 535 (1940). The situation described above supports the Commission's exercise of that discretion. Staff views; which suggest that ALAB-603 could have serious effect on the regulatory process, have come to the Commission's attention only after expiration of the time set forth in the regulations for Commission *sua sponte* review. These staff views present serious generic policy matters requiring Commission consideration. Accordingly, the Commission has decided to reconsider its previous determination not to review ALAB-603.

II.

Upon reconsideration, the Commission has decided to review the generic aspects of ALAB-603 specified below.[4] The Commission affirms the license amendments which the Appeal Board ordered for the St. Lucie, Unit No. 2 construction permit. These conditions are appropriate interim requirements which should provide reasonable assurance that the facility can be operated without undue risk to public health and safety pending completion of TAP-A-44.

However, the Commission does wish to review the following generic issues in ALAB-603:

(1) What are the generic implications of using the threshold probabilities in Section 2.2.3 of the Standard Review Plan as guidelines in determining the design basis events[5] to be used for plant design and operation?

(2) Granting the need for protective measures against loss of all AC power for some reasonable period of time, is designation of station blackout as a design basis event the appropriate regulatory framework

[3]The parties were notified of this request by letter of December 1, 1980.

[4]Chairman Ahearne would have preferred not to review ALAB-603 but to address the generic issues separately. However, he joins in the action ordered here.

[5]See, for instance, the discussion in ALAB-603, p. 3, of design basis events.

in which to consider such measures pending completion of the staff generic study TAP-A-44?

The parties to the review proceeding shall be the permittee Florida Power and Light Company, the Intervenors, and the NRC staff. The staff shall file its brief no later than 30 days after the date of this Order. The other parties may file briefs by the same date. Reply briefs may be filed no later than 50 days after the date of this Order. In addition, because of the generic nature of the issues on review in this proceeding, the Commission invites other persons to address either or both of these issues by submitting briefs no later than 50 days after the date of this Order.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 12th day of December 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **PR-Miscellaneous Notice (45 FR 417398)**

STATEMENT OF POLICY: FURTHER COMMISSION GUIDANCE FOR POWER REACTOR OPERATING LICENSES **December 18, 1980**

The Commission issues a revised Statement of Policy concerning the implementation of TMI-related requirements into the licensing process.

MEMORANDUM AND ORDER

Recently the Commission, by a vote of 3-2, issued a Statement of Policy entitled "Further Commission Guidance for Power Reactor Operating Licenses." 45 FR 41738 (June 20, 1980). In essence, the Statement of Policy announced the intent of the Commission that in future actions on nuclear power reactor operating license applications, it would look to the list of "Requirements for New Operating Licenses" found in NUREG-0694 (June 1980) as setting forth requirements for new operating licenses which should be "necessary and sufficient for responding" to the accident at Three Mile Island ("TMI"). Consequently, current operating license applications were to be judged against present NRC regulations, as supplemented by these TMI-related requirements. Insofar as certain of the provisions of NUREG-0694 sought to impose operating license requirements beyond those necessary to show compliance with the regulations:

> although the [licensing and appeal] boards may entertain contentions asserting that the supplementation is unnecessary (in full or in part) and they may entertain contentions that one or more of the supplementary requirements are not being complied with; they may not entertain contentions asserting that additional supplementation is required. *Id.*

On November 3, 1980, by a vote of 2-2, the Commission denied a request for a stay of the Statement of Policy filed by the Union of Concerned Scientists and the Shoreham Opponents Coalition.

On October 28, 1980, by a vote of 4-0, the Commission approved NUREG-0737, "Clarification of TMI Action Plan Requirements," which is a letter from D.G. Eisenhut, Director of the Division of Licensing, NRR, to licensees of operating power reactors and applicants for operating licenses forwarding post-TMI requirements. NUREG-0737 now supersedes NUREG-0694, the latter being the document which forms the core of the substantive requirements in the aforementioned Statement of Policy. NUREG-0737 makes numerous significant changes in NUREG-0694. In some instances, the requirements in NUREG-0694 are made more flexible, especially as to implementation schedules. In some instances, the requirements in NUREG-0694 are made more strict. In addition, NUREG-0737 adds new requirements, taken from previously issued Bulletins and Orders, which were not part of NUREG-0694.

The Commission's approval of NUREG-0737 requires that some changes be made in the previously adopted Statements of Policy. Moreover, the Commission has now had more time to reflect upon the distinction between interpretive and supplementary requirements, as originally set forth in NUREG-0694 and as modified in NUREG-0737, and believes that the number of supplementary requirements may be quite small. For these reasons, the Commission has decided that the Statement of Policy should be amended as set forth in the Appendix to this Memorandum and Order.[1]

It is so ORDERED.

For the Commission,

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington D.C.
this 18th day of December,[1] 1980.

[1]Chairman Ahearne concurs in amending the policy statement, but disagrees in how it should be amended. His dissenting views are attached to the Appendix.

U.S. NUCLEAR REGULATORY COMMISSION

FURTHER COMMISSION GUIDANCE

FOR POWER REACTOR OPERATING LICENSES

REVISED STATEMENT OF POLICY

I. BACKGROUND

After the March 1979 accident at Three Mile Island, Unit 2, the Commission directed its technical review resources to assuring the safety of operating power reactors rather than to the issuance of new licenses. Furthermore, the Commission decided that power reactor licensing should not continue until the assessment of the TMI accident had been substantially completed and comprehensive improvements in both the operation and regulation of nuclear power plants had been set in motion.

At a meeting on May 30, 1979, the Nuclear Regulatory Commission decided to issue policy guidance addressing general principles for reaching licensing decisions and to provide specific guidance for near-term operating license cases.[1] In November 1979, the Nuclear Regulatory Commission issued the policy guidance in the form of an amendment to 10 CFR Part 2 of its regulations,[2] describing the approach to be taken by the Commission regarding licensing of power reactors. In particular, the Commission noted that it would "be providing case-by-case guidance on changes in regulatory policies." The Commission has now acted on four operating licenses, has given extensive consideration to issues arising as a result of the Three Mile Island accident, and is able to provide general guidance. Following the accident at Three Mile Island 2, the President established a Commission to make recommendations regarding changes necessary to improve nuclear safety. In May 1979, the Nuclear Regulatory Commission established a Lessons Learned Task Force,[3] to determine what actions were required for new operating licenses and chartered a Special Inquiry Group to examine

[1]"Staff Requirements - Discussion of Options Regarding Deferral of Licenses," memorandum from Samuel J. Chilk, Secretary to Lee V. Gossick, Executive Director for Operations, May 31, 1979.

[2]"Suspension of 10 CFR 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings," 44 FR 65050 (November 9, 1979).

[3]"Lessons Learned from TMI-2 Accident," Roger Mattson to NRR staff, May 31, 1979.

all facets of the accident and its causes. These groups have published their reports.[4]

The Lessons Learned Task Force led to NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" and NUREG-0585, "TMI-2 Lessons Learned Task Force Final Report." The Commission addressed these reports in meetings on September 6, September 14, October 14, and October 16, 1979. Following release of the report of the Presidential Commission the Commission provided a preliminary set of responses to the recommendations in that report.[5] This response provided broad policy directions for development of an NRC Action Plan, work on which was begun in November 1979. During the development of the Action Plan, the Special Inquiry Group Report was received, which had the benefit of review by panels of outside consultants representing a cross section of technical and public views. This report provided additional recommendations. The Action Plan[6] was developed to provide a comprehensive and integrated plan for the actions judged appropriate by the Nuclear Regulatory Commission to correct or improve the regulation and operation of nuclear facilities based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. In developing the Action Plan, the various recommendations and possible actions of all the principal investigations were assessed and either rejected, adopted or modified. A detailed summary of the development and review process for the Action Plan was initially provided in NUREG-0694,[7] "TMI-Related Requirements For New Operating Licenses," and can now be found, as changed, in NUREG-0737, "Clarification of TMI Action Plan Requirements."[8]

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[4]Report of the President's Commission on The Accident at Three Mile Island, "The Need for Change: The Legacy of TMI," October 1979;
U.S. Nuclear Regulatory Commission, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations," NUREG-0578, July 1979;
U.S. Nuclear Regulatory, "TMI-2 Lessons Learned Task Force Status Report, " NUREG-0585, August 1979;
U.S. Nuclear Regulatory Commission Special Inquiry Group, "Three Mile Island: A Report to the Commissioners and to the Public," January 1980.

[5]U.S. Nuclear Regulatory Commission, "NRC Views and Analysis of the Recommendations of the President's Commission on the Accident at Three Mile Island," NUREG-0632, November 1979.

[6]U.S. Nuclear Regulatory Commission, "NRC Action Plans Developed as a Result of the TMI-2 Accident," NUREG-0660.

[7]U.S. Nuclear Regulatory Commission, "TMI-Related Requirements for New Operating Licenses," NUREG-0694, June 1980.

[8]U.S. Nuclear Regulatory Commission, "Clarification of TMI Action Plan Requirements," NUREG-0737, November 1980.

Actions to improve the safety of nuclear power plants now operating were judged to be necessary immediately after the accident and could not be delayed until the Action Plan was developed, although they were subsequently included in the Action Plan. Such actions came from the Bulletins and Orders issued immediately after the accident, the first report of the Lessons-Learned Task Force issued in July 1979, the recommendations of the Emergency Preparedness Task Force, and the NRC staff and Commission. Before these immediate actions were applied to operating plants, they were approved by the Commission. Many of the required immediate actions have already been taken by licensees and most are scheduled to be completed in the near future.

On February 7, 1980, based on its review of initial drafts of the Action Plan, the Commission approved a listing of near-term operating license (NTOL) requirements, as being necessary but not necessarily sufficient TMI-related requirements, for granting new operating licenses. Since then, the fuel load requirements on the NTOL list have been used by the Commission in granting operating licenses, with limited authorizations for fuel loading and low power testing, for Sequoyah, North Anna, Salem, and Farley. Full operating licenses were granted, based on the NTOL list, for Sequoyah and North Anna.

On May 15, 1980, after review of the last version of the Action Plan, the Commission approved a list of "Requirements For New Operating Licenses," contained in NUREG-0694, which the staff recommended for imposition on current operating license applicants. That list was recast from the previous NTOL list and sets forth four types of TMI-related requirements and actions for new operating licenses: (1) those required to be completed by a license applicant prior to receiving a fuel-loading and low-power testing license, (2) those required to be completed by a license applicant to operate at appreciable power levels up to full power, (3) those the NRC will take prior to issuing a fuel-loading and low-power testing or full-power operating license, and (4) those required to be completed by a licensee prior to a specified date.

The Commission also approved the staff's recommendation that the remaining items from the TMI reviews should be implemented or considered over time to further enhance safety.

On October 28, 1980, the Commission approved a "Clarification of TMI Action Plan Requirements," now contained in NUREG-0737, which supersedes NUREG-0694. More explicit requirements, revisions in previous requirements, different time schedules for implementation, and new

requirements in NUREG-0694, but taken from previously issued Commission bulletins and orders, form the core of NUREG-0737.

In approving the schedules for developing and implementing changes in requirements, the Commission's primary considerations were the safety significance of the issues and the immediacy of the need for corrective actions. As discussed above, many actions were taken to improve safety immediately or soon after the accident. These actions were generally considered to be interim improvements. In scheduling the remaining improvements, the availability of both NRC and industry resources was considered, as well as the safety significance of the actions. Thus, the Action Plan approved by the Commission presents a sequence of actions that will result in a gradually increasing improvement in safety as individual actions are completed and the initial immediate actions are replaced or supplemented by longer term improvements.

II. COMMISSION DECISION

Based upon its extensive review and consideration of the issues arising as a result of the Three Mile Island accident — a review that is still continuing — the Commission has concluded that the list of TMI-related requirements for new operating licenses found in NUREG-0737 can provide a basis for responding to the TMI-2 accident. The Commission has decided that current operating license applications should be measured by the NRC staff against the regulations, as augmented by these requirements.[9] In general, the remaining items of the Action Plan should be addressed through the normal process for development and adoption of new requirements rather than through immediate imposition on pending applications.

III. LITIGATION OF TMI-2 ISSUES IN OPERATING LICENSE PROCEEDINGS

In the November 1979 policy statement, the Commission provided the following guidance for the conduct of adjudicatory proceedings:

> 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 aspects and thus compliance with existing regulations may turn out to no longer warrant approval of a license application.

[9]Consideration of applications for an operating license should include the entire list of requirements unless an applicant specifically requests an operating license with limited authorization (e.g., fuel loading and low-power testing).

The Commission is now able to give the Boards more guidance.

The Commission believes the TMI-related operating license requirements list as derived from the process described above should be the principal basis for consideration of TMI-related issues in the adjudicatory process. There are good reasons for this. First, this represents a major effort by the staff and Commissioners to address more than one hundred issues and recommendations in a coherent and coordinated fashion. This entire process cannot be reproduced in individual proceedings. Second, the NRC does not have the resources to litigate the entire Action Plan in each proceeding. Third, many of the decisions involve policy more than factual or legal decisions. Most of these are more appropriately addressed by the Commission itself on a generic basis than by an individual licensing board in a particular case. Consequently, the Commission has chosen to adopt the following policy regarding litigation of TMI-related issues in operating license proceedings.

The "Clarification of Action Plan Requirements" in NUREG-0737, like the TMI-related "Requirements For New Operating Licenses" in NUREG-0694, can, in terms of their relationship to existing Commission regulations, be put in two categories: (1) those that interpret, refine or quantify the general language of existing regulations, and (2) those that supplement the existing regulations by imposing requirements in addition to specific ones already contained therein. Insofar as the first category — refinement of exisiting regulations — is concerned, the parties may challenge the new requirements as unnecessary on the one hand or insufficient on the other within the limits of the regulations. Insofar as the second category — supplementation of existing regulations — is concerned, the parties may challenge either the necessity for or sufficiency of such requirements. It would be useful if the parties in taking a position on such requirements stated (a) the nexus of the issue to the TMI-2 accident, (b) the significance of the issue, and, (c) any differences between their positions and the rationale underlying the Commission consideration of additional TMI-related requirements. It would be helpful if any certifications of questions regarding such positions to the Commission included the same information and such certifications are encouraged where Boards are in doubt as to the Commission's intentions in approving NUREG-0737. The Atomic Safety and Licensing and Appeal Boards' present authority to raise issues *sua sponte* under 10 CFR 2.760a extends to both categories.

In order to focus litigation of TMI-related issues, the staff and the Boards should use the Commission's existing summary disposition procedures, where applicable, in responding to TMI-related contentions.

The Commission believes that where the time for filing contentions has expired in a given case, no new TMI-related contentions should be accepted absent a showing of good cause and balancing of the factors in 10 CFR 2.714(a)(1). The Commission expects adherence to its regulations in this regard.

Also, present standards governing the reopening of hearing records to consider new evidence on TMI-related issues should be adhered to. Thus, for example, where initial decisions have been issued, the record should not be reopened to take evidence on some TMI-related issue unless the party seeking reopening shows that there is significant new evidence, not included in the record, that materially affects the decision.

Finally, the Commission will continue to monitor developments with regard to the litigation of our Action Plan requirements and will continue to offer guidance where appropriate.

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
the 18th day of December 1980.

CHAIRMAN AHEARNE'S DESSENTING VIEWS

I now support amending the guidance for litigating TMI-2 issues for the reasons mentioned in the Commission order and below. However, I do not support the Commission's revised statement of policy. Little guidance is provided to either the Board or the parties—they are simply told they can litigate whatever they wish and it would be "useful" or "helpful" to address certain questions.

Throughout the development of the TMI Action Plan and the various policy statements, I have believed the Commissioners should play a central role in determining the appropriate response to the TMI-2 accident. Unfortunately the "Revised Statement of Policy" relinquishes Commission control and attention from a major portion of this process. Therefore I would have preferred the following approach:

Revised Statement of Policy

I. Background

In June 1980 the Commission issued a Statement of Policy dealing with TMI-related requirements for new operating licenses.[1] This statement outlined the process by which the Commission evaluated the TMI-2 accident and then agreed to a list of requirements to be adopted in response to the accident.[2] It then provided guidance for litigation of TMI-2 issues in operating license proceedings.

Subsequently substantial controversy developed over the statement—particularly over treatment of requirements and issues which go beyond existing regulations. Due in part to this controversy, in part to a change in the composition of the Commission, in part to the uncertain results of ongoing litigation, and in part to confusion created by subsequent Commission statements, the Commission has decided to modify this aspect of the policy statement. In the long run the Commission believes it will save time by modifying its guidance at this juncture.

[1] "Futher Commission Guidance for Power Reactor Operating Licenses; Statement of Policy," 45 FR 41738 (June 20, 1980).

[2] "TMI-Related Requirements for New Operating Licenses," NUREG-0694 (June 1980) as modified by "Clarification of TMI Action Plan Requirements," NUREG-0737 (November 1980).

II. Modified Commission Guidance of Litigation on TMI-2 Issues in Operating License Proceedings

In the June Statement of Policy the Commission described the TMI-related requirements as falling into two categories: "(1) those that interpret, refine or quantify the general language of existing regulations, and (2) those that supplement the existing regulations by imposing requirements in addition to specific ones already contained therein." The Commission is modifying its guidance with respect to the second category. Rather than entirely precluding litigation of requirements that go beyond the regulations (other than those found in the Commission's list of requirements), the Commission will now provide parties an opportunity to certify such questions to the Commission. To the extent that an issue addresses items within the current regulations, certification is unnecessary since litigation was permissable under the original policy statement.

However issues which raise matters going beyond the existing regulations may now be certified directly to the Commission.[3]

A request for certification should clearly present (a) the nexus of the issue to the TMI-2 accident (i.e., in what way does the TMI accident provide a basis for the concerns presented), (b) the significance of the issue (i.e., what is the consequence of not addressing the issue), (c) to the extent possible, the differences in rationale underlying the certification from the rationale underlying the Commission consideration of additional TMI-related requirements (e.g., different reasoning, incorrect assumptions, incomplete information).

To the extent that a contention raises the need for a requirement already included in the Commission's list of requirements for new operating licenses, certification is unnecessary. As under the old policy statement, litigation of the need for those requirements is permitted without further action by the Commission. The Commission itself has already found sufficient basis for allowing consideration of those items.

It should be emphasized that this policy statement (as well as the previous policy statement) is intended to address issues arising from the TMI-2

[3]The Licensing Board should certify any such questions directly to the Commission. In the event that a party wishes to request directed certification, the Board should be given a reasonable opportunity to address the certification question prior to Commission action since (a) the Board might rule that the issue is within the existing regulations rendering certification unnecessary and (b) otherwise it would be helpful to have the benefit of the Board's reasoning. *See Toledo Edison Company* (Davis-Besse Nuclear Power Station, Unit 1), ALAB-297, 7 NRC 727 (1975).

accident. Other issues are to be treated according to normal Commission procedures.[4]

[4]*See e.g.*, 10 CFR 2.758.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearne, Chairman
Victor Gilinsky
Joseph M. Hendrie
Peter A. Bradford

In the Matter of **Docket No. 50-289 (Restart)**

METROPOLITAN EDISON COMPANY
(Three Mile Island Nuclear Station, Unit No. 1) **August 15, 1980**

In response to a question certified to it by the Licensing Board, the Commission grants the Board the authority to provide certain procedural assistance, including free transcripts, to intervenors in this proceeding.

MEMORANDUM AND ORDER

On August 8, 1980, the Atomic Safety and Licensing Board in this proceeding certified to the Commission the question of whether the Board can arrange for procedural assistance, particularly free transcripts, to intervenors in the proceeding. The Board noted that the recently adopted Commission rules, 10 CFR 2.708(d), 2.712(f) and 2.750(c), see 45 Fed. Reg. 49535 (July 25, 1980), apply only to an "adjudicatory proceeding on an application for a license or an amendment thereto," and concluded that because the re-start proceedng does not fall within this terminology, the Board was without authority to provide the kind of procedural assistance allowed by the new rules. Accordingly, the Board asked the Commission to extend the rules.

The Board has presented compelling reasons to permit procedural assistance in the particular circumstances of this proceeding. Procedural assistance of the type allowed by the new rules should (1) avoid inconvenience to Board members and resultant inefficiency when the

members lend transcripts to intervenors who cannot afford to purchase them; (2) assist the Board in limiting cross-examination to efficient and productive non-repetitive questioning, which the Board believes could better be done if intervenors had transcripts (which are "fundamental tools used in effective cross-examination," according to the Board); (3) improve the quality of direct and cross-examination by informed examiners who can rely upon transcripts; (4) avoid delay and inaccuracies in the filing of proposed findings of fact and conclusions of law, which the Board thought might well result if intervenors do not have access to transcripts; (5) promote the Board's resolution of mandatory issues in the proceeding if all participating parties are equipped with the fundamental litigation tools, particularly transcripts.

All these factors merit special consideration in this proceeding, where the Commission has made special efforts to expedite the proceeding. Significantly, with regard to proceeding transcripts, the board was unable to identify any disadvantage to parties in the proceeding if such assistance were to be provided to intervenors. It felt that rather than cause delay, access to transcripts by intervenors would allow the Board to expedite the proceeding. As the Board said:

> With a shorter hearing and record, with greater efficiency in preparing findings and the initial decision, much if not all of the cost of providing transcripts will be recovered.

Accordingly, we will grant the Board's request and give it authority in this case to undertake the forms of procedural assistance authorized by the new Commission rules.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 15th day of August 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman

In the Matter of **Docket No. 50-500**
50-501

THE TOLEDO EDISON COMPANY, *et al.*
(Davis-Besse Nuclear Power Station, Units 2 and 3) **December 1, 1980**

Upon the applicant's withdrawal of their application for construction permits for Units 2 and 3 of the Davis-Besse facility, the Chairman of the Appeal Panel strikes from the Appeal Panel's docket the two partial initial decisions issued by the Licensing Board authorizing Limited Work Authorizations, and rules that applicants' request that the proceeding be fully terminated be addressed to the Licensing Board which still retains jurisdiction over portions of it.

CONSTRUCTION PERMIT PROCEEDINGS: TERMINATION

Construction permit applicants who withdraw an application should terminate the adjudicatory proceeding on the application by motion, filed by counsel of record, with those tribunals still maintaining jurisdiction over the proceeding.

CONSTRUCTION PERMIT PROCEEDINGS: TERMINATION

Adjudicatory boards are empowered to impose conditions upon the withdrawal of a permit or license application after the issuance of a notice of hearing. 10 CFR 2.107(a)

MEMORANDUM AND ORDER

The Licensing Board has rendered two partial initial decisions in this construction permit proceeding involving Units 2 and 3 of the Davis-Besse

nuclear facility. LBP-75-75, 2 NRC 993 (1975); LBP-78-29, 8 NRC 284 (1978). No exceptions were filed to either decision and appellate review *sua sponte* was deferred to await final Licensing Board action in the proceeding.

By letter of January 24, 1980, counsel for the applicants advised the Chairman of the Appeal Panel that his clients had decided not to construct Units 2 and 3. In light of this development, counsel requested that the proceeding be terminated. On January 30, 1980, the Secretary to the Appeal Panel informed counsel in writing that no action would be taken on that request "pending further word respecting whether the [applicants] intend to withdraw their application for construction permits (or, instead, will pursue some other course)."

On February 13, 1980, the NRC staff filed its response to the termination request. In that response, the staff noted its agreement that action on the request should be withheld until the applicants announced their intentions with regard to the construction permit application. Beyond that, our attention was directed to the fact that the two partial initial decisions paved the way for the issuance of limited work authorizations (LWAs) under 10 CFR 50.10(e)(1)(3). Two such authorizations had been issued by the Director of the Office of Nuclear Reactor Regulation (NRR) and site preparation work had been performed in accordance with their terms. In these circumstances, according to the staff, any termination of this proceeding "must be preceded by appropriate NRC review, taking into account the conditions at the site resulting from activities undertaken pursuant to the two LWAs issued to Applicants with a view toward determining whether [such termination] requires the imposition of special conditions." Response, p. 7.[1]

We heard nothing further from the applicants until our recent receipt of a copy of a November 17, 1980 letter from an official of the Toledo Edison Company to the NRR Director. That letter stated that the applicants "hereby withdraw" their application for permits to construct Units 2 and 3. It went on to request that"[t]o the extent that action by the Atomic Safety and Licensing Board, Atomic Safety and Licensing Appeal Board, or Commission is required for this withdrawal to become effective, ...such action be promptly taken." No mention was made of the position taken by the staff in its February 13 memorandum.

1. It was perfectly appropriate for the applicants to notify this Commission of the withdrawal of their construction permit in the way in which they did. The same cannot be said, however, for the manner in which they renewed their request that the adjudicatory proceeding on that

[1]In this connection, the staff observed that the LWAs provided that any activities undertaken pursuant thereto were to be at the applicants' risk. See 10 CFR 50.10(e)(4).

application be brought to an end. A copy of a letter sent by a lay official of the lead applicant to an NRC staff official manifestly will not suffice for that purpose. Instead, a motion should have been filed by counsel of record for the applicants with those tribunals having present jurisdiction over the proceeding.

As the November 17 letter itself reflects, there is good reason why counsel — and not the client — should be the instrument for seeking relief in a matter in adjudication. Apparently, the Toledo Edison official who signed that letter was not familiar with the content of the staff's February 13 memorandum. But, having been served with a copy of that memorandum, applicants' counsel undoubtedly was well aware of the staff's concern respecting the possible significance of the site work performed under the aegis of the LWAs. Presumably, therefore, any motion filed by counsel looking to the termination of the proceeding would have at least addressed that concern.

2. Notwithstanding the foregoing consideration, in this instance limited relief will be given to the applicants on the strength of the November 17 letter. The two partial initial decisions will be struck from our docket. In addition, this proceeding will be removed from the list of proceedings in which appeal boards are now considering the generic issue pertaining to the environmental consequences of radon releases attributable to the mining and milling of uranium fuel. See ALAB-540, 9 NRC 428 (1979).

The applicants' request for a full termination of the proceeding must be addressed to the Licensing Board, which still retains jurisdiction over portions of it. We assume that the applicants (through their counsel) will now take the necessary steps properly to put the request before that Board. Before taking action, however, the Board is to accord the staff a reasonable opportunity to propose any conditions which its inspection of the current state of the site might suggest be attached to the termination order.[2]

It is so ORDERED.

FOR THE APPEAL PANEL
CHAIRMAN

C. Jean Bishop
Secretary to the Appeal Panel

This action was taken by the Appeal Panel Chairman under the authority of 10 CFR 2.787(b).

[2]The licensing boards have been expressly empowered to impose conditions upon the withdrawal of a permit or license application after the issuance of a notice of hearing. 10 CFR 2.107(a)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matter of **Docket No. 50-443**
50-444

PUBLIC SERVICE COMPANY OF NEW HAMSPHIRE, *et al.*
(Seabrook Station, Units 1 and 2)

December 9, 1980

The Appeal Board denies a petition requesting that the construction permits for the Seabrook facility be suspended pending the Board's ruling on the seismic issue remanded to it in CLI-80-33 (12 NRC 295).

RULES OF PRACTICE: SUSPENSION OF PERMITS

A decision on whether to suspend a permit pending a decision on remand must be based on "(1) traditional balancing of equities and (2) consideration of any likely prejudice to further decisions that might be called for by the remand." *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 521 (1977).

ATOMIC ENERGY ACT: SAFETY STANDARDS

The cost/benefit balancing process at the root of decisions made in implementation of the National Environmental Policy Act plays no part in the enforcement of the safety standards laid down by the Atomic Energy Act.

ATOMIC ENERGY ACT: SAFETY STANDARDS

The evaluation of safety risks attendant to the operation of a nuclear facility is not undertaken as an element of a cost-benefit analysis. Unless the unconditional safety standards prescribed by the Atomic Energy Act are met, a facility cannot obtain an operating license no matter how badly the facility may be needed. *Maine Yankee Atomic Power Company* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1007 (1973).

APPEARANCES

Ms. Ellyn R. Weiss and **Mr. William S. Jordan III,** Washington, D.C., for the intervenor, New England Coalition on Nuclear Pollution.

Messrs. Thomas G. Dignan, Jr., and **R. K. Gad III,** Boston, Massachusetts, for the applicants, Public Service Company of New Hamshire, *et al.*

Mr. Stuart K. Becker and **Ms. Maxine I. Lipeles,** Assistant Attorneys General of Massachusetts, Boston, Massachusetts, for the Commonwealth of Massachusetts.

Mr. Roy P. Lessy for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On September 25, 1980, by a divided vote the Commission remanded to us this construction permit proceeding involving the Seabrook nuclear facility in New Hamsphire. CLI-80-33, 12 NRC 295. The instructions given us were (1) to reopen the record to receive additional evidence on certain seismic issues; and (2) in the light of that evidence, to reconsider the conclusions we reached on those issues in ALAB-422, 6 NRC 33, 54-65 (1977) and ALAB-561, 10 NRC 410, 436-a *et seq* (1979). Following consultation with the parties, we entered an unpublished order on November 6 which established the schedule for the filing of prepared testimony and announced that the hearing itself would likely commence on April 6, 1981.

What we are now called upon to decide is whether the Seabrook construction permits should be allowed to remain in effect pending the outcome of the remand. In a motion filed on October 29 (over a month after the Commission ordered the remand), the intervenor New England

Coalition on Nuclear Pollution (Coalition) asks that the permits be suspended, thereby foreclosing further construction activities *pendente lite.* The intervenor Commonwealth of Massachusetts supports the motion in part.[1] Both the applicants and the NRC staff oppose it.

I

A review of the background of the seismic remand is necessary in order to put the Coalition's motion in proper perspective.

A. In an initial decision issued in 1976, the Licensing Board authorized the issuance of construction permits for the Seabrook facility. LBP-76-26, 3 NRC 857.[2] The decision prompted appeals by several of the parties, including the Coalition. A principal question presented by the Coalition's appeal was addressed to the Licensing Board's application of the seismic and geologic siting criteria for nuclear power plants which are contained in Appendix A to 10 CFR Part 100.

At the root of those criteria is the "Safe Shutdown Earthquake" (SSE) concept. As recently reemphasized:[3]

> The SSE for a particular site is that earthquake "which is based upon an evaluation of the maximum earthquake potential considering the regional and local geology and seismology and specific characteristics of local subsurface material" and "which could cause the maximum vibratory ground motion at the site...." 10 CFR Part 100, Appendix A, III(c), V(a). The nuclear power plant must be designed so that, should the SSE occur, "certain [specified safety] structures, systems, and components will remain functional." *Id.,* VI(a)....
>
> In short, the SSE is the earthquake postulated for the purpose of determining the adequacy of the seismic design of the facility. The plant has to be capable of being safely shutdown despite the effects of whatever vibratory ground motion might be experienced at the site as a result of the SSE. (One of the elements of the SSE determination is, of course, an ascertainment of the amount of such motion (Id., V (a)).)

Before the Licensing Board, the applicants and the NRC staff had adduced evidence in support of their position that the Seabrook SSE had a maximum intensity of VIII (measured on the Modified Mercalli scale) and

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[1] In the Commonwealth's view, pending the outcome of the remand there should be no additional construction work involving structures which might be affected by that outcome.

[2] On the strength of that authorization, the permits were issued on July 7, 1976. Their effectiveness was later twice suspended for periods of time for reasons unrelated to the matters now before us. With respect to the first suspension, see ALAB-366, 5 NRC 39, as modified in CLI-77-8, 5 NRC 503 (1977); ALAB-423, 6 NRC 115 (1977). As to the second suspension, see CLI-78-14, 7 NRC 952, 957-60 (1978); CLI-78-17, 8 NRC 179 (1978).

[3] *Dairyland Power Coop.* (La Crosse Boiling Water Reactor), ALAB-618, 12 NRC 551, 552 (November 17, 1980).

that the vibratory ground motion (acceleration) which might be experienced at the site as a result of that earthquake would not exceed 0.25g.[4] For its part, the Coalition had asserted (1) that the SSE should at a minimum be a Modified Mercalli intensity IX; and (2) that, even for an intensity VIII SSE, an acceleration value of approximately 0.4g should be assigned. For these propositions the Coalition had relied *inter alia* upon, respectively, (1) the probabilistic hypothesis advanced by one of its witnesses, Dr. Michael A. Chinnery; and (2) the testimony of another Coalition witness, Dr. Mihailo Trifunac. On the basis of its appraisal of the record, in its initial decision the Licensing Board had resolved the issue in favor of the applicant and the staff. In other words, it had found that the Seabrook facility need be designed so as to be capable of being shutdown safely in the event of a Modified Mercalli intensity VIII earthquake producing an acceleration at the site of 0.25g. LBP-76-36, *supra,* 3 NRC at 868-71, 919-22.

Challenging this result, the Coalition complained to us of the rejection of the contrary conclusions of Dr. Chinnery and Dr. Trifunac. By a divided vote, this Board turned the challenge aside. As the majority saw it, Dr. Chinnery's probabilistic theory was both technically deficient and inconsistent with Appendix A to 10 CFR Part 100. ALAB-422, *supra,* 6 NRC at 57-60. With respect to the matter of the maximum acceleration which an intensity VIII earthquake might occasion at the Seabrook site, the majority determined that the analytic approach of the staff's principal witness (Dr. Nathan M. Newmark) — which had led to the assignment of the 0.25g value — was preferable to that of Dr. Trifunac. *Id.* at 62-64.

Viewing the matter differently, Mr. Farrar[5] noted his dissent from this disposition of the seismic question and thus from the affirmance of the Licensing Board's authorization of the issuance of the Seabrook construction permits. 6 AEC at 106 *et seq.*[6] Instead of filing a full opinion at that time, however, he confined himself to a summary statement of his own conclusions. As he explained:

> ...my views on the seismic issues [do] not lead me to conclude that the plant should not be built. Rather those views call for a substantial upgrading of the plant's ability to withstand earthquakes. Although this is important to safety, the necessary design changes would not be foreclosed by any construction efforts taking place in the near future. Thus, there is no cause to delay the

[4]The acceleration associated with an earthquake is expressed in terms of a percentage of "g" (one g represents the gravitational acceleration of a free falling body).

[5]By reason of his recent resignation from the Appeal Panel, Mr. Farrar no longer is a member of this Board.

[6]All other issues raised by the Coalition and the other appellants were resolved in ALAB-422 in the applicants' favor. Jurisdiction was retained, however, over one question which this Board had raised *sua sponte* — a question which did not bear upon whether the facility should be built. 6 NRC at 104-05.

> release of today's decisions — which allow construction to proceed — while I complete the full elucidation of my response to my colleagues' seismic analysis. Accordingly, I present... only an outline of my conclusions on the seismic issues, without detailed supporting analysis. I will prepare a supplemental opinion later, and in it furnish the full reasoning underlying my position.

Id. at 106.[7]

B. On August 10, 1977, the Coalition filed a petition for Commission review of ALAB-422. On September 15, 1977, the Commission announced that it would defer its determination whether to grant review on the seismic issues to await Mr. Farrar's supplemental opinion.[8] That opinion was rendered in August 1979 and prompted a response the following month from the Appeal Board majority. ALAB-561, 10 NRC 410.

Acting on a Commission invitation, the Coalition filed a supplemental memorandum on September 26, 1979 in support of that portion of its petition for review of ALAB-422 which dealt with the seismic issues. The Commission was advised, *inter alia,* that, subsequent to his testimony before the Licensing Board, Dr. Chinnery had undertaken certain seismological studies under NRC contract and had reported the results of those studies to the NRC staff in 1978 and 1979. According to the Coalition (supplemental memorandum, pp. 10-11), Dr. Chinnery's reports provided a sufficient answer to the criticism which had been leveled in ALAB-422 against his probabilistic analysis (and reiterated in the Appeal Board majority's response in ALAB-561 to Mr. Farrar's full dissent).

Following its receipt of the rejoinders of the other parties to the Coalition's supplemental memorandum, the Commission called for an oral briefing by the parties, which took place on May 29, 1980. At that briefing, the Commission heard (albeit not under oath) from Dr. Chinnery, as well as from a panel of staff members and a technical representative of the applicants.

In the wake of the briefing, the Coalition requested that the adjudicatory record be supplemented by the inclusion of the two reports Dr. Chinnery had prepared for the NRC and the stenographic transcript of the oral presentations. This request was opposed by the applicants and the NRC staff on the principal ground that the Commission's Rules of Practice precluded the granting of such relief.

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[7]By way of a footnote, Mr. Farrar added:

> My conclusion on the seismic matter will affect the cost of the plant and thus the comparison of it to a plant at those alternative sites located outside the same seismic area. Given the standards laid down by the Commission..., the alternative site question would not likely be affected were my views on the seismic question to be adopted.

[8]The remainder of ALAB-422 was affirmed in CLI-78-1, 7 NRC 1 (1978).

In its remand order, CLI-80-33, *supra,* the Commission denied the Coalition's request for the reason that it was both granting review of ALAB-422 and ALAB-561 and calling upon this Board to reopen the record on the matters dealt with in the Chinnery reports and at the briefing.[9] With respect to the earthquake intensity question, the Commission concluded that (1) the majority of this Board had erroneously determined that Dr. Chinnery's methodology was inconsistent with Appendix A to 10 CFR Part 100; and (2) the "factual validity of Dr. Chinnery's hypothesis" required "greater exploration on the record" in light of the substantial time interval since his testimony before the Licensing Board in 1975 and the "subsequent publication of Dr. Chinnery's works and general increase in seismic knowledge." 12 NRC at 296-297. Regarding the acceleration question, the Commission perceived a need for additional evidence as to "the consistency of Appendix A and staff's methodology for correlating vibratory motion with the SSE." *Id.* at 298.

II

A. In its motion now before us, the Coalition characterizes (at p. 1) the Commission's remand order as embodying a ruling "that [this] Board had been incorrect in rejecting seismic methodology and conclusions proffered by the [Coalition]."[10] As has just been seen, however, that characterization is far wide of the mark. True enough, the Commission did overturn our legal determination that Dr. Chinnery's probabilistic analysis could not be squared with Appendix A to 10 CFR Part 100. But it did not likewise reject the primary, *and totally independent,* reason which we had assigned for declining to attach weight to that analysis. As to that reason — the technical deficiencies we found to inhere in the analysis — the Commission decided no more than that sufficient cause existed to have us ("as a matter of prudence") take additional evidence on the "factual validity of Dr. Chinnery's hypothesis" and then *reconsider* our prior conclusion with the new disclosures of record in mind. Once again, that cause was two-fold: (1) Dr. Chinnery's relatively recent seismic reports prepared for the Commission; and (2) the general increase in seismic knowledge over the five year period which had elapsed since the Licensing Board developed the record on which ALAB-422 and ALAB-561 were founded.

The same is to be said of this Board's earlier determinations on the acceleration question. The Commission did not invalidate the endorsement

[9]The briefing had covered both the earthquake intensity and the acceleration questions.

[10]In a like vein, the Coalition's memorandum in response to the oppositions of the applicants and the staff to the motion refers to the remand order as a "reversal" of the seismic portion of ALAB-422. Memorandum, p. 1.

in ALAB-422 of the staff's methodology which had led to the assignment of an 0.25g value to the acceleration of the SSE at the Seabrook site. Rather, it merely decided that there should be a further examination by the parties of the staff's analytic approach, to be followed by our reconsideration of the validity of that approach.[11]

B. In short, there exists simply the possibility that upon evaluation of the additional evidence to be received at next April's hearing, we (or some higher tribunal on further review) will decide that the present seismic design of the Seabrook facility must be altered to accommodate a more severe earthquake than that which was determined in ALAB-422 to be the SSE. Without presuming to assess the degree of likelihood that this contingency will materialize (an obvious impossibility at this juncture), we are persuaded that there is insufficient justification to order construction activities halted in the interim. Our reasons are these:

1. Although we do not accept the applicants' thesis that authority to entertain the Coalition's motion has not been conferred upon us, it is nonetheless significant that the Commission did not see fit to couple the remand with a permit suspension order of its own. The Commission was, of course, fully aware that, should the Coalition's position ultimately prevail, the inevitable consequence would be substantial and costly alterations in the facility's design. Had it thought this factor to be of the pivotal importance the Coalition attributes to it, it is reasonable to suppose that the Commission would have called a halt to construction itself.

Our confidence that the Commission does not share the Coalition's thinking on the suspension matter rests, however, on more than what was left unsaid in the remand order. As both the applicants and the staff remind us in August 1978 the Commission vacated a suspension of the Seabrook construction permits which had been earlier ordered because of a then possibility that the Seabrook site might have to be rejected in favor of an alternate site. CLI-78-17, 8 NRC 179. In the course of its opinion, it noted

[11]Thus, the situation here is markedly different from that in *Public Service Electric and Gas Company* (Hope Creek Generating Station, Units 1 and 2), ALAB-429, 6 NRC 229 (1977), cited to us by the Coalition. In that construction permit proceeding, this Board reversed outright a Licensing Board determination on a crucial safety issue on the ground that the record was insufficient to support the findings underlying that determination. The discussion in the opinion on the question of permit suspension pending the outcome of the further Licensing Board hearings ordered therin (*Id.* at 246-47) must be read in that light.
The discussion pertaining to permit suspension contained in *Southern California Edison Company* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-268, 1 NRC 383, 400-01 (1975), is of equally little assistance to the Coalition. That discussion was in the context of an affirmative determination that the applicants lacked the control over the exclusion area for the proposed facility site which was required by 10 CFR 100.3(a).

It might be added that in neither decision was a permit suspension actually directed.

that one of the parties had "refer[red] to the fact that Commission review of seismic issues in this case has not yet been completed as another basis for continuing the suspension." The Commission's response was this:

> That factor has no bearing on the suspension question. Mr. Farrar of our Appeal Board dissented from the Appeal Board majority's resolution of certain seismic issues, but he made clear that his position on these seismic issues, even were it accepted, would not preclude continued construction of the Seabrook facility, nor would it be likely to affect the alternate site question.

Id. at 180-81, fn. 7.[12]

2. These factors to one side, we are obliged by prior Commission precedent in this very case to decide the suspension question "on the basis of (1) traditional balancing of equities and (2) consideration of any likely prejudice to further decisions that might be called for by the remand." CLI-77-8, 5 NRC 503, 521 (1977). The Coalition has failed to make the requisite showing on either prong of this test.

For one thing, the motion is singularly devoid of any demonstration that the Coalition or its members might be irreparably injured if construction activities are permitted to continue while the seismic issues undergo further exploration.[13] Nor is the threat of any possible harm apparent. Whatever the result of the remand, before receiving operating licenses the applicants will be required to do anything necessary to accommodate it. To repeat, should the ultimate determination be that the facility's present seismic design is inadequate, the requisite changes will have to be made and implemented regardless of the amount of cost and inconvenience which might be involved.[14] As we had occasion to stress many years ago, the cost/benefit balancing process at the root of decisions made in the implementation of the National Environmental Policy Act plays no part in the enforcement of the safety standards laid down by the Atomic Energy Act:

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[12]The Commission had reference, of course, to the statement of Mr. Farrar quoted above, p. 673, *supra.*

[13]In denying in 1977 a Coalition motion to halt Seabrook construction, the Commission cited with approval this Board's observation in *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 632 (1977), that the irreparable injury factor is the "most crucial" one. CLI-77-27, 6 NRC 715, 716 (1977). Although that observation had been made in the context of a motion for a stay pending appeal, it has no less force in the circumstances now at hand.

[14]We appreciate, of course, that the cost of any seismic design changes that might ultimately have to be made will likely be borne by the ratepayers. But the same is true with regard to the substantial costs which would certainly be incurred by the applicants in the event that construction were now suspended. In short, the ratepayer is at appreciable economic risk irrespective of whether construction is allowed to continue or not.

> Though prospective endangerment of the environment (even if substantial may not provide an insuperable obstacle to the licensing of a nuclear power facility, public health and safety is an entirely different matter. Unless the safety findings prescribed by the Atomic Energy Act and the regulations can be made, the reactor does not obtain [an operating] license — no matter how badly it may be needed. Thus, in the safety sphere, the evaluaton of the risks attendant to reactor operation is not undertaken as an element of NEPA-type process by which costs may be traded off against benefits. Rather, the function of the evaluation is to ascertain whether the ultimate, unconditional standards of the Atomic Energy Act and the regulations have been met; *e.g.*, whether the public health and safety will be adequately protected.

Maine Yankee Power Company (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1007 (1973).

Given the fact that the applicants must meet absolute safety standards as a precondition to Seabrook operation, it also follows that a permit suspension is not needed to obviate "likely prejudice to further decisions that might be called for by the remand." The short of the matter is that, irrespective of how much additional work might be done in the interim, the state of Seabrook construction when the hearing is held in April neither will nor can have any bearing upon the determinations reached on the remanded issues.

Although these considerations are dispositive here, it is worthy of passing note that it appears from information supplied by the applicants (at our direction) that the additional construction work scheduled for the upcoming six months will alter the *status quo* to a relatively minor extent. Many of the principal safety-related structures of Unit 1 (*i.e.*, those which might be affected by a change in the Seabrook SSE) are already well along the road to completion and very few such structures in either unit will be advanced very far between now and the end of next May.[15] Thus, a suspension of the construction permits at this time seemingly would have little effect upon what the applicants will have to do in the event that the evidence adduced at the April hearing necessitates a significant alteration of the seismic conclusions reached in ALAB-422.[16]

Motion to suspend Seabrook construction permits *denied.*

[15]See attachment "A" to the November 12, 1980 affidavit of John DeVincentis, appended to the applicants' November 13, 1980 response to the Coalition's motion.

[16]Attached to the Coalition's response (see fn. 10, *supra*) is the affidavit of Gregory C. Minor, a consulting engineer. We can accept his conclusion that the information furnished to us by the applicants does not illume the precise extent to which additional construction work over the next several months might increase the difficulty of cost of any seismic design changes which might be required by the outcome of the remand. We did not call upon the applicants, however, to provide such an assessment inasmuch as, for reasons earlier stated in this opinion, that factor is not crucial to our decision on the suspension motion.

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

Administrative Judges:

Richard S. Salzman, Chairman
Dr. John H. Buck
Christine N. Kohl

In the Matter of **Docket No. 50-329 OM & OL**
50-330 OM & OL

CONSUMERS POWER COMPANY
(Midland Plant, Units 1 and 2)

December 17, 1980

The Appeal Board affirms the Licensing Board's prehearing conference order of October 24, 1980, which rejected petitioner's only contention and denied his untimely petition for leave to intervene in this proceeding to amend applicant's construction permits.

Mr. Wendell H. Marshall, Midland, Michigan, *pro se.*

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

MEMORANDUM AND ORDER

In its October 24, 1980, prehearing conference order the Licensing Board denied Wendell H. Marshall's petition for leave to intervene in the "OM" proceeding instituted to amend applicant's construction permits. The Board found Mr. Marshall's only contention to be inadmissible for lack of sufficient specificity. It also noted that the contention was untimely without justification and thus could be rejected pursuant to 10 CFR 2.714(a).

In the same order, however, the Board consolidated the OM proceeding with the one pending on the utility's application for an operating license

(the "OL" proceeding) for a hearing on the soil settlement issues common to both cases.[1] The Board therefore pointed out that, because Mr. Marshall is already an intervenor in the OL proceeding, the consolidation will thus permit him to participate in the OM proceeding (*ibid.*). The Licensing Board explicitly stated that such participation will include the right to conduct cross-examination on all issues and the right to request permission to sponsor a witness in the OM proceeding.

Mr. Marshall appeals the denial of his petition to intervene in the OM proceeding, and the staff has replied in opposition.[2] As discussed below, we affirm the Licensing Board's decision, but on a ground somewhat different than that stated by the Board.

The Commission ordered the hearing in the OM proceeding for the limited purpose of considering the following issues — (1) whether the facts set forth in Part II of the Director's Order of December 6, 1979, concerning soil construction activities under and around safety-related structures and systems, are correct; and (2) whether that order, which prohibits certain soil-related activities pending issuance of an appropriate amendment to the construction permits, should be sustained. Despite this narrow focus of the OM proceeding, Mr. Marshall offered the following contention in support of his petition to intervene (dated August 27, 1980):

> In the event of an accident at the Midland Nuclear Plant which is being built on the Tittabawasse River, in the City of Midland, Michigan, massive quantities of radioactive materials especially in the event of a Class 9 accident, will find their way into the river which flows into Saginaw Bay, the drinking water supply of the Midland-Saginaw area population.

The contention further urges that the staff's environmental impact statement for Midland include consideration of Class 9 accidents. At its September 10, 1980, prehearing conference, the Board gave Mr. Marshall the opportunity to clarify his contention. In response to the Chairman's questioning, Mr. Marshall referred to the soil compaction matter, the cooling pond dike, and the diesel generating system (Tr. 363- 368). He also stated, however, that his August 27 filing concerned "several jurisdictional problems" (Tr. 361), was "more elaborate" than the narrow OM proceeding

[1]The OM proceeding is confined to soil settlement issues. *See* orders of December 6, 1979, and March 14, 1980 (as amended May 20, 1980).

[2]The staff opens its argument in opposition to the appeal by urging that Mr. Marshall has failed to "brief" his case by "adequately" addressing the Licensing Board's rejection of his sole contention. The staff thus asks us to "disregard" Mr. Marshall's arguments. While Mr. Marshall's 12-page pleading is not a paradigm of clear legal writing and advocacy, we note that he is appearing *pro se*. Taking that fact into consideration, we think the more appropriate course is simply to make due allowance for any inadequacies in his papers.

(Tr. 363), and "incorporate[d] here all of the various things that are wrong with this complex to begin with" (Tr. 366).

In view of these statements and the August 27 contention itself, we believe that the real gist of Mr. Marshall's contention is his concern about the possibility of a Class 9 accident that might result in contamination to the Midland water supply.[3] This contention, if admitted, would have improperly expanded the very narrow scope of the OM proceeding. Thus, that reason, more than the lack of specificity, supports the Board's rejection of the contention.

Although our principal basis for rejecting Mr. Marshall's contention differs from that of the Licensing Board, we fully agree with its separate, alternative ground for rejection — untimeliness. Mr. Marshall filed his contention almost two weeks after the August 14, 1980, deadline explicitly set in the Licensing Board's order of July 24, 1980. He has offered no coherent or plausible excuse for the delay and thus has failed to establish the requisite "good cause" and other factors set forth in 10 CFR 2.714.[4]

Insofar as it rejected Mr. Marshall's only contention and thereby denied his petition for leave to intervene, the Licensing Board's October 24, 1980, order is *affirmed.* [5]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Dr. Buck did not participate in this order.

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[3]Comparison of the Marshall contention accepted in the OL proceeding with the one found inadmissible in the more limited OM proceeding is revealing. The former contention (filed October 31, 1978) states: "Present geological conditions, according to newspaper accounts, is [*sic*] causing the settling of the generator building at the Nuclear Power Plant site." This shows that Mr. Marshall could have framed a similar contention focusing on the soil settlement issue in the OM proceeding but instead chose to raise the very different Class 9 accident matter.

[4]Since the order clearly set the time for filing contentions, Mr. Marshall is precluded from arguing that, as a *pro se* litigant, he had difficulty in interpreting the Commission's rules and time limits for filing.

[5]Mr. Salzman is of the view that the Board's denial of intervention for want of the requisite specificity in the only contention proffered is an additional ground for affirmance.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Richard F. Cole
Dr. Dixon Callihan

In the Matter of **Docket No. 50-454-OL**
50-455-OL

COMMONWEALTH EDISON COMPANY
(Byron Nuclear Power Station, Units 1 and 2)

December 19, 1980

Ruling on the admissibility of an intervenor's revised contentions in this operating license proceeding, the Licensing Board admits certain contentions, denies others, and orders that discovery commence on all issues included in the admitted contentions.

RULES OF PRACTICE: CONTENTION REQUIREMENT FOR INTERVENTION

Petitioners for intervention must file a list of the contentions which they seek to have litigated, setting forth the basis for each contention with reasonable specificity. 10 CFR 2.714(b).

RULES OF PRACTICE: ADMISSIBILTY OF CONTENTIONS

A contention need not plead evidence to provide the basis for an allegation, and the merits of an issue are not to be considered at the pleading stage.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

Intervenors must frame their contentions with sufficient preciseness to show that the issues raised are within the scope of cognizable issues to be considered in an adjudicatory proceeding. To this end, a hearing participant must be specific as to the focus of the desired hearing, and contentions must serve the purpose of defining the concrete issues which are appropriate for adjudication in the proceeding.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

Originality in framing contentions is not a pleading requirement.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

Extraneous matters such as reservation of rights, statements of intention and directions for interpretation which accompany an intervenor's list of contentions will be disregarded as contrary to the Commission's Rules of Practice.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

Contentions which constitute a general attack upon the methods used by the NRC staff to insure compliance with regulations, without raising any issues specifically related to the matters under consideration, are not appropriate for resolution in a particular licensing proceeding.

NEPA: NEED FOR POWER

The general rule applicable to cases involving differences or changes in power demand forecasts is not *whether* the utility will need additional generating capacity but *when.* In an operating license proceeding, the original demand forecast is irrelevant because the precise timing of the need for a constructed facility is immaterial to the ultimate issue of whether to operate as such time as the plant is completed and available. The cost efficiency of a completed facility is left to the business judgment of the applicant and the wisdom of the state regulatory agencies responsible for scrutinizing the purely economic aspects of new generating facilities.

NEPA: RULE OF REASON

The end uses of electricity, and therefore the alleged environmental impacts associated with them, are too speculative and remote to satisfy the rule of reason for NEPA consideration.

NEPA: SCOPE OF INFORMATION REQUIRED FOR LICENSING (CLASS 9 ACCIDENTS)

Under the Commission's Statement of Interim Policy (Nuclear Power Plant Accident Consideration Under the National Environmental Policy Act of 1969, 45 FR 40101 (June 13, 1980)) environmental impact statements are to include a reasoned consideration of the environmental risks attributable to accidents at the particular facility, and approximately equal attention shall be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences of those releases.

RULES OF PRACTICE: CHALLENGE TO COMMISSION REGULATIONS

Contentions challenging the validity of NRC regulations are inadmissible under the provisions of 10 CFR 2.758.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

At the contention formulating stage of the proceeding, an intervenor may plead the inadequacy of documents or responses which have not yet been made available to the parties. The contention may be admitted subject to later refinement and specification when the additional information has been furnished or the relevant documents have been filed.

LICENSING BOARDS: CONSIDERATION OF GENERIC ISSUES (SAFETY)

Unresolved generic safety issues cannot be disregarded in individual licensing proceedings simply because they also have generic applicability; rather, for an applicant to succeed, there must be some explanation why construction or operation can proceed even though an overall solution has not been found.

In the absence of the staff's Safety Evaluation Report, intervenors may put in issue by their pleadings the adequacy of the NRC staff's treatment of unresolved generic safety issues in relation to the particular facility under consideration, subject to subsequent refinement and particularization after the SER has been filed.

MEMORANDUM AND ORDER

(Admissibility of Revised Contentions of Intervenor League of Women Voters)

I. PROCEDURAL HISTORY

Notice of the application of the Commonwealth Edison Company (Applicant) for an operating license for the Byron Nuclear Power Reactor was published in the *Federal Register* on December 15, 1978 (43 FR 58659). A timely petition for leave to intervene was filed by the Rockford League of Women Voters (League) as well as other Intervenors in this proceeding. A special prehearing conference was held by the Board in Rockford, Illinois on August 21-22, 1979. The Board ruled that the Intervenors had demonstrated the requisite interest in the subject matter of the proceeding to establish standing to intervene and they were admitted as intervening parties (Tr. 103).

The Board further ruled that the Intervenors, including the League, had stated one or more valid and viable contentions. The parties were therefore directed to meet and conduct negotiatons in an effort to refine and phrase proper contentions for the further conduct of the proceeding (Tr. 104-10). It is our understanding that representatives of the parties met on several occasions to discuss contentions.

On March 10, 1980, the League filed its Revised Contentions consisting of 146 numbered contentions. The Applicant filed its Answer to these contentions on April 18, 1980. The Staff filed its Answer to the revised contentions of the League on April 25, 1980.

I. LEGAL PRINCIPLES REGARDING CONTENTIONS

Intervenors are required by 10 CFR 2.714(b) to file "a list of the contentions which petitoner seeks to have litigated in the matter, and the bases for each contention set forth with reasonable specificity." This

contention requirement and procedure is for the purpose of framing the issues which will be the subject of subsequent discovery and proof in an evidentiary hearing. Such NRC contention practice is analogous to the pleadings traditionally employed by courts in judicial proceedings and trial practice.

The Appeal Board has construed the function of contentions as follows:

> "Section 2.714 should not be read and construed as establishing secretive and complex technicalities such as in some other areas of the law are associated with special pleading requirements for which some practitioners have an almost superstitious reverence. On the other hand, we cannot construe the section in a vacuum. Neither of these approaches provides an acceptable substitute for a construction which takes into account relevant statutory requirements, precedent, and common sense. The degree of specificity with which the basis for a contention must be alleged initially involves the exercise of judgment on a case-by-case basis. We have repeatedly emphasized that in passing upon the question of whether an intervention petition should be granted, it is not the function of a licensing board to reach the merits of any contention contained therein. Moreover, Section 2.714 does not require the petition to detail the evidence which will be offered in support of each contention."[1]

The purpose of and limitations upon the scope of cognizable contentions were thus further described.

> "A purpose of the basis-for-contention requirement in Section 2.714 is to help assure at the pleading stage that the hearing process is not improperly invoked. For example, a licensing proceeding before this agency is plainly not the proper forum for an attack on applicable statutory requirements or for challenges to the basic structure of the Commission's regulatory process. Another purpose is to help assure that other parties are sufficiently put on notice so that they will know at least generally what they will have to defend against or oppose. Still another purpose is to assure that the proposed issues are proper for adjudication in the particular proceeding."[2]

It has been recognized that the imposition of reasonable limitations upon the scope of trial-type hearings in administrative proceedings is essential. If facts pertaining to the licensing of a particular nuclear power plant are at issue, an adjudicatory proceeding is the right forum. But "if someone wants to advance generalizations regarding his particular views of what applicable policies ought to be, a role other than as a party to a trial-type hearing whould be chosen."[3]

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[1]Philadelphia Electric Company (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20 (1974).
[2]*Ibid.* at 20-21.
[3]Duke Power Company (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-128, 6 AEC 399, 401 (1973).

It is clear that a contention need not plead evidence to provide the basis for an allegation, and that the merits of an issue are not to be considered at the pleading stage. For example, in the leading *Grand Gulf* case,[4] a contention merely asserted that the alternatives of utilizing other methods of producing energy had not been adequately considered. At a prehearing conference, counsel stated that he intended to introduce evidence that there were geothermal sources that could be utilized. The Appeal Board stated:

> "Applicant points to the fact that its environmental report represents that there are 'no known potential geothermal sites in the MSU service area' and that a like representation is to be found in the Staff's draft environmental statement. The regulatory staff...makes a somewhat similar point in its brief: that petitioner has neither buttressed its allegation that there are geothermal sources in the area nor indicated that the alleged sources would or could provide a feasible alternative to the Grand Gulf facility. But, at the risk of undue repetition, we stress again that, in passing upon the question as to whether an intervention petition should be granted, it is not the function of a licensing board to reach the merits of any contention contained therein. Moreover, Section 2.714 does not require the petition to detail the evidence which will be offered in support of each contention."[5]

These principles continue to be applied by the Appeal Board. In the recent *Allens Creek* case,[6] an intervenor alleged that a marine biomass farm should be substituted for the nuclear facility, claiming that it would be environmentally preferable. The licensing board rejected the biomass contention, holding in effect that the petitioner was required not merely to allege that this alternative would be environmentally preferable but also to explain why that is so. This holding was overruled as contrary to the *Grand Gulf* decision and reasoning, because it was sufficient for the petitioner at the pleading stage merely to state his reasons (*i.e.*, the basis) for his belief that the suggested alternative warranted further consideration because biomass sources were available and environmentally preferable.[7] There is no room to doubt that *Grand Gulf* has been adhered to over the years, and that an intervenor is not required in its pleadings to "establish that its assertion is well-founded in fact."[8]

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[4]Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423 (1973).
[5]*Ibid.* at 426.
[6]Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).
[7]*Ibid.* at 548-49.
[8]*Ibid.* at 549, fn. 10. *See also* Viriginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979); Duke Power Company (Transportation of Spent Fuel from Oconee to McGuire),

It is incumbent upon intervenors to frame their contentions with sufficient preciseness to show that the issues raised are within the scope of cognizable issues to be considered in an adjudicatory proceeding. To this end, a hearing participant "must be specific as to the focus of the desired hearing,"[9] and contentions must serve the purpose of defining the "concrete issues which are appropriate for adjudication in the proceeding."[10] Properly framed contentions will further reasonably inform the other parties what issues they will be required to defend against or oppose to develop a complete record in an evidentiary hearing.

II. CONTENTIONS

Three broad objections by the Staff and the Applicant to the League's revised contentions will be dealt with as threshold matters First, it is alleged that approximately 22[11] or 45[12] of the 146 contentions are almost word-for-word copies of contentions filed by another intervenor in another NRC proceeding. From this the Staff concludes that the "Board must look askance at verbatim transpositions of contentions from one case to another" while determining the specificity of the Byron contentions.[13] The Applicant "urge[s] the Board to summarily reject all of the contentions cribbed from the *Midland* proceeding as being presumptively without bases."[14]

We decline the invitation to penalize the alleged lack of originality in framing contentions. As the cases cited *supra* illustrate, contentions are a form of pleading. Lawyers have for many years copied the pleadings of others, and annotated form books in many volumes are prepared and sold by law book publishers to the profession. Originality is not a pleading requirement. If fatal defects result from this alleged method of pleading contentions, they can be addressed in specific objections to discrete contentions.

The second broad objection raised by the Applicant relates to the League's so-called Additional Matters and Reservations contained in a preamble to its revised contentions. This preamble contains a number of reservations of rights, directions as to the interpretation and intended scope of references, statements of intention, and requests that any contentions deemed to be an attack on regulations shall be considered as a petition

[9]BPI v. Atomic Energy Commission, 502 F.2d 424, 429 (D.C. Cir. (1974).
[10]Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 769 (1977).
[11]Staff's Answer, dated April 25, 1980, p. 4.
[12]Applicant's Answer, dated April 18, 1980, p. 6.
[13]Staff's Answer, p. 4.
[14]Applicant's Answer, p. 7.

pursuant to 10 CFR 2.758. The Applicant's objections to this preamble are well taken, and such statements and directions will be disregarded as contrary to the Commission's Rules of Practice (10 CFR 2.714, 2.758) and the cases cited in Section I, pp. 3, 5, *supra.*

Finally, it is urged that some of the revised contentions are beyond the scope of the issues previously submitted by the League, and should be treated as untimely amendments requiring a balancing of the five factors set forth in 10 CFR 2.714(a)(1). We do not regard these revised contentions as nontimely within the meaning of our rules. At the special prehearing conference held in Rockford, Illinois on August 21-22, 1979, none of the Intervenors was represented by counsel. The Intervention Board requested all parties to confer and negotiate regarding contentions, after it held that each Intervenor had shown standing and set forth at least one viable contention in its petition. The Board did not intend to analyze each contention, nor to limit the lay parties to the narrow scope of the profferred contentions. It appears that the parties did in fact hold several meetings and informal discussions of proposed contentions. A notice of appearance of the League's counsel was filed at the same time the revised contentions were filed. It would be time consuming and unproductive for the Board to go through the exercise of sorting through 146 contentions to determine which were within the ambit of an original petition. It would also be unfair to the Intervenors because the Board never intended nor indicated to them that they were rigidly bound to the scope of unreviewed contentions in developing or negotiating a set of contentions reflecting their concerns. These objections are denied.

Contentions 1, 3 and 4

These contentions question the ability of the Staff to carry out properly the regulatory responsibilities which have been delegated to it. They constitute a general attack upon the methods used by the Staff to insure compliance with regulations. Such contentions are not appropriate for resolution in a particular licensing proceeding, and they fail to raise any issues specifically related to this operating license proceeding. We decline to convert this proceeding into a generalized investigation of the Staff's ability to regulate effectively the nuclear industry. Accordingly, profferred Contentions 1, 3 and 4 are denied.

Contentions 2, 5, 10, 88, 89, 90 and 116

These contentions relate to quality assurance and quality control, which are subjects that could form a viable contention and litigable issue. However, as drafted these contentions are too broad and diffuse to put in issue properly the question of the Applicant's ability and willingness to

comply with the Commission's quality assurance requirements. These contentions are therefore consolidated as Revised Contention 1A, and redrafted by the Board to read as follows:

> **Revised Contention 1A.** Intervenor contends that the Applicant does not have the ability or the willingness to comply with 10 CFR Part 50, Appendix B, to maintain a quality assurance and quality control program, as evidenced by its past history of noncompliance. In addition, Applicant's quality assurance program does not require complete independence of the quality assurance functions from other departments within the company.

As thus revised, Contention 1A is admitted.

Contentions 6, 82 and 121

These contentions are objected to by the Staff because they are new issues not revised from earlier contentions, and the bases for late filing were not provided. That objection is overruled for the reasons set forth in Section II, pp. 7-8, *supra.* However, these contentions do constitute a recitation of generalities regarding all ACRS letters, and all generic issues mentioned in various ACRS letters and testimony before Congress. They are too vague and generalized to constitute specified issues, and accordingly these contentions are denied.

Contentions 7, 11, 12, 13, 79, 118, 127, 128, 130, 131, 132, 133, 139 and 140

These contentions attempt to deal with the economic costs of constructing this nuclear facility, and the question of whether the power from Byron Station is needed at this time. They do not purport to deal with the direct environmental costs of operation as compared with nonoperation of the Byron nuclear facility. Some of these contentions attempt to reanalyze the Applicant's original power demand forecasting. However, the general rule applicable to cases involving differences or changes in demand forecasts has been stated to be "not *whether* Niagara Mohawk will need additional generating capacity but *when.* "[15] The instant proceeding is an operating license proceeding, not a construction permit hearing. The original demand forecasting is irrelevant since the precise timing of the need for a constructed facility is immaterial to the ultimate issue of whether to operate at such time as the plant is completed and available. The cost efficiency of the Byron facility is left to the business judgment of the Applicant and "to

[15]Niagara Mohawk Power Corporation (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 357 (1975). *See also* Carolina Power and Light Company (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), CLI-79-5, 9 NRC 607 (1979).

the wisdom of the State regulatory agencies responsible for scrutinizing the purely economic aspects" of new generating facilities.[16] Contention 140 deals with the potential unavailability of uranium fuel supply, and is not germane to this operating license proceeding. Contention 131 concerns alleged environmental impacts associated with the ultimate use of the electric power generated at Byron. The end uses of electricity are too speculative and remote to satisfy the rule of reason for NEPA consideration.[17] These contentions are therefore denied.

Contentions 8 and 62

These contentions concern an alleged failure to assess the consequences of Class 9 accidents. By its Statement of Interim Policy, effective June 13, 1980, the Commission revised its policy for considering the more severe kinds of very low probability accidents, commonly referred to as Class 9 accidents. This followed the Three Mile Island (TMI) accident of March 28, 1979. The Staff's environmental impact statements pursuant to NEPA are to include a reasoned consideration of environmental risks attributable to accidents at the particular facility, and "approximately equal attention shall be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences of those releases."[18] These contentions are admitted.

Contentions 9, 114, 119, 125 and 126

These contentions involve allegations regarding the Applicant's financial qualifications to complete or operate the facility. They are admitted as raising the issue of whether Applicant is financially qualified to operate the Byron facility in a safe manner. .

Contentions 14, 15, 16, 83, 134, 136 and 137

These contentions attempt to raise issues concerning environmental impacts from the uranium fuel cycle. To the extent that these contentions attack the promulgation of the rule, they constitute a challenge to the validity of NRC regulations, including 10 CFR 51.20, revised Table S-3, and such portions of these contentions are therefore inadmissible under the provisions of 10 CFR 2.758. Contention 15 attempts to raise the question of

[16]Consumers Power Company (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 163 (1978). See also Public Service Company of Oklahoma (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 755, 805 (1979).

[17]Consumers Power Company (Midland Plant, Units 1 and 2), CLI-74-5, 7 AEC 19, 28 (1974); *Id.*, ALAB-458, 7 NRC 155, 176 (1978).

[18]Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969, 45 *Federal Register* 40101 (June 13, 1980).

permanent disposition or management of nuclear wastes. That matter is now pending before the Commission itself in proposed rulemaking on the storage and disposal of nuclear waste, and the results of that generic proceeding will be applicable to all proceedings affected thereby.[19] Contention 15 is therefore rejected. Contentions 14, 16, 83, 134, 136 and 137, insofar as they allege that the effects of radioactive discharges associated with the operation of Byron Station have not been adequately considered, are admitted.

Contentions 17, 120 and 143

These contentions allege that the Environmental Report is inadequate as omitting necessary information, including responses by the Applicant to many questions directed to it by the Staff. That situation may be normal at this stage of the proceeding, as the Applicant suggests.[20] However, it is equally normal to allow an intervenor to plead the inadequacy of documents or responses which have not yet been made available to the parties.[21] This contention is admitted, subject to later refinement and specification when the additional information has been furnished or the relevant documents have been filed.

Contention 18

This contention asserts that Applicant is building the Byron facility primarily for the sale of electricity to users and utilities outside its service area in the State of Illinois. Such an immaterial allegation does not constitute a cognizable issue, and is beyond the scope of this proceeding. The contention is denied.

Contentions 19, 78, 108 and 146

These contentions involve the issue of emergency planning. The Commission has promulgated new final regulations concerning emergency planning, effective November 3, 1980,[22] which extensively amend and upgrade such requirements. This subject can constitute a litigable issue. These contentions are admitted, subject to subsequent updating, refinement and clarification.

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[19]PR-50, 51 (44 FR 61372).
[20]Answer of Applicant to Revised Contentions, p. 19.
[21]The Staff has recently indicated that the DES will be filed in January 1982, the FES in July 1982 and the SER in June 1982.
[22]45 FR 55402 et seq. (August 19, 1980).

Contentions 20-49, 68, 69, 73, 74, 75, 77, 80, 86 and 106

These contentions allege that certain identified unresolved safety issues or generic items are relevant to pressurized water reactors, including Byron, and that they have not been resolved generically. These contentions raise matters discussed in NUREG-0410, the testimony of NRC Staff witnesses in the *Black Fox* proceeding, NUREG-0510, and NUREG-0471.[23] Both the Staff and the Applicant object to these contentions as being merely a "laundry list" of Task Action Plans (TAPS) insufficient to raise litigable issues, citing *River Bend*.[24] That case must be analyzed more extensively than the "check list" criticism or the nexus requirements set forth by the Applicant in its quotations from *River Bend* (6 NRC at 772-73).[25] In spite of the failure of an interested state in that case to assert the requisite nexus between the facility and unresolved generic safety questions, that did not end the Licensing Board's responsibility. The Board was required to make a finding of "reasonable assurance" that "the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public" (10 CFR 50.35(a)).[26] The Appeal Board further stated:

> "Of necessity, this determination will entail an inquiry into whether the staff review satisfactorily has come to grips with any unresolved generic safety problems which might have an impact upon operation of the nuclear facility under consideration. The SER is, of course, the principal document before the licensing board which reflects the content and outcome of the staff's review. The board should therefore be able to look to that document to ascertain the extent to which generic unresolved safety problems which have been previously identified in a TSAR item, a Task Action Plan, an ACRS report or elsewhere have been factored into the staff's analysis for the particular reactor — and with what result. To this end, in our view, each SER should contain a summary description of those generic problems under continuing study which have both relevance to the facilities of the type under review and potentially significant public safety considerations. This summary description should include information of the kind now contained in most Task Action Plans. More specifically, there should be an indication of the investigative program which has been or will be undertaken with regard to the problems, the program's anticipated time-span, whether (and if so what) interim measures have been devised for dealing with the problem pending the completion of the investigation, and what alternative courses of action

[23]NUREG-0410 was a report prepared by the NRC Staff and submitted to Congress in 1978 in response to Section 210 of the Energy Reorganization Act, which requires that the NRC develop plans to resolve "unresolved safety matters" and report to Congress annually. The Black Fox testimony cited by the league contains a May 1978 revision of the description of Class A Task Action Plans. NUREG-0510 is the 1979 report to Congress NUREG-0471 describes the Class B, C and D Tasks.

[24]Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977).

[25]Applicant's Answer, pp. 22-23.

[26]6 NRC at 774.

might be available should the program not produce the envisaged result. In short, the board (and the public as well) should be in a position to ascertain from the SER itself — without the need to resort to extrinsic documents — the staff's perception of the nature and extent of the relationship between each significant unresolved generic safety question and the eventual operation of the reactor under scrutiny."[27]

The vital importance of the SER in analyzing the impact of unresolved generic safety problems upon the operation of Byron is clear. However, the SER has not yet been filed in this case, and the Staff does not anticipate that it will be filed before June 1982.[28]

The Appeal Board has further examined these questions in *North Anna*[29] In that case it stated:

"In our *River Bend* decision of last fall, we dealt at some length with the significance of the so-called, 'unresolved generic safety issues' in a construction permit proceeding. These safety issues — identified either in the reports of the Advisory Committee on Reactor Safeguards to the Commission or in the staff's 'Task Action Plans — are applicable to reactors in general (or at least to a large class of them) and are the subject of ongoing attempts to find a universally applicable solution.' Of course, these 'unresolved' issues cannot be disregarded in individual licensing proceedings simply because they also have generic applicability; rather, for an applicant to succeed, there must be some explanation why construction or operation can proceed even though an overall solution has not been found."[30]

Continuing, the Appeal Board discussed the differences in this regard between construction permit and operating license proceedings:

"In River Bend, we said that such explanations should appear in the Safety Evaluation Report for the facility. We also described generally the type of reason which would be sufficient to let *construction* go on on the face of an unresolved generic question. Where *operation* of a facility is involved, similar analysis is necessary; but, as to certain issues, the justification for giving an applicant the green light can obviously be more difficult to come by. For example, the reason often given for allowing construction activity is that there is still time to find a solution and build it into the plant's design. At the operating license stage, that reason is not available. But there may be one or more other justifications for permitting the plant to operate. The most common are that a solution satisfactory for the particular facility has been implemented; a restriction on the level or nature of operation adequate to eliminate the problem has been imposed; or the safety issue does not arise until the later years of plant operation."[31] (Emphasis in original)

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[27] *Ibid.*, at 774-75.
[28] Footnote 21, page 13, *supra.*
[29] Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245 (1978).
[30] *Ibid.*, at 247-48.
[31] *Ibid.*, at 248.

In undertaking to ascertain whether the Staff dealt appropriately with the "unresolved" issues in that operating license proceeding the Appeal Board prophetically observed:

> "We wish to say precisely what we have and have not done. In view of the limitations imposed by regulations, and the fact that our review was necessarily unaided by any of the parties, we have not probed deeply into the substance of the reasons put forth by the staff for allowing operation to go forward. Rather, we have only looked to see whether the generic safety issues have been taken into account in a manner that is at least plausible and that, if proven to be of substance, would be adequate to justify operation. *Scrutiny of the substance of particular explanations will have to await a contested proceeding.* "[32] (Emphasis supplied)

The league is entitled to put in issue by its pleadings the adequacy of the Staff's treatment of unresolved generic safety issues in relation to the Byron facility. The specificity and nexus contemplated by *River Bend, supra,* cannot be expected until the Staff's SER has been filed. Accordingly, these contentions are admitted, subject to subsequent refinement and particularization after the SER has been filed and appropriate discovery completed. Of course, all admitted contentions are subject to motions for summary disposition after the completion of discovery, if "there is no genuine issue to be heard."[33] That will give the Applicant an opportunity to renew its challenge of the applicability of Contentions 33, 34 and 35 to this proceeding.[34]

Contentions 51-61 and 63

These contentions purport to describe deficiencies revealed by the accident at TMI and to relate them to the Byron facility. The Staff does not object to Contentions 52-59 and 63. The Applicant objects to all of them, in part because of asserted design differences between TMI and Byron. These contentions plead litigable issues and are admitted.

Contentions 66, 70, 72 and 105

These contentions assert that in certain described respects, the Byron design does not comply with Staff Regulatory Guides. It is true, as the Staff and Applicant assert, that regulatory guides are not regulations *per se.* A regulatory guide sets forth one, but not necessarily the only, method which may be employed by an applicant in order to conform to a regulatory

[32] *Ibid.,* fn. 7, p. 248. *See also* Northern States Power Company (Monticello Nuclear Generating Plant, Unit 1), ALAB-620, 12 NRC 574 (November 24, 1980).
[33] 10 CFR Section 2.749; Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 426 (1973).
[34] Applicant's Answer, pp. 24-32.

standard. However, at some point and probably in the SER, the Staff will analyze and discuss the reasons why it finds acceptable (or not acceptable) an alternative method which this Applicant has chosen to employ in order to conform to a regulatory standard. For the same reasons discussed regarding unresolved generic safety issues, *supra,* these contentions will be admitted, subject to subsequent refinement with respect to nexus and particularization requirements.

Contentions 64 and 65

These contentions relate to "all safety problems identified by the TMI accident and not affirmatively found to be inapplicable" to Byron (No. 64), and to "each unresolved safety problem" (No. 65). Such contentions are too broad and sweeping, and rely on large numbers of unidentified documents, to comply with NRC pleading requirements. There is insufficient precision in description or attempt even to allege a nexus in these contentions, and accordingly they are denied.

Contentions 67, 71 and 76

These contentions allege noncompliance with General Design Criteria from 10 CFR Part 50, Appendix A. These criteria are broad and generally applicable to all large classes of reactors. They are "intended to provide engineering goals rather than precise tests or methodology" by which reactor safety can be gauged.[35] Nevertheless an analysis of the methods used by Applicant in finding an acceptable solution will be made by the Staff. These contentions are therefore admitted, subject to subsequent refinement and clarification.

Contentions 50, 81, 84, 85, 87, 95, 97, 98, 99, 100, 102, 103, 104, 107, 109, 110, 111, 112, 113, 115, 117, 122, 123, 124, 129, 135, 141, 142 and 144

These contentions adequately plead issues which are within the scope of this proceeding, which are deemed to be sufficiently concrete to constitute litigable issues. They are therefore admitted as contentions of the league.

Contentions 91, 92, 93, 94, 96, 101, 138 and 145

These contentions do not adequately plead cognizable issues in this proceeding, and they are too general, broad and lacking in requisite specificity to frame litigable contentions. They are consequently rejected.

[35]Petition for Emergency and Remedial Action, CLI-78-6, 7 NRC 400, 406 (1978).

ORDER

For all the foregoing reasons and based upon a consideration of the entire record in this matter, it is, this 19th day of December 1980.

ORDERED

1. That the League's Contentions 2, 5, 8, 9, 10, 14, 16, 17, 19, 20-63, 66-78, 80, 81, 83-90, 95, 97-100, 102-117, 119, 120, 122-126, 129, 134-137, 141-144 and 146 are admitted.

2. That the League's Contentions 1, 3, 4, 6, 7, 11-13, 15, 18, 64, 65, 79, 82, 91-94, 96, 101, 118, 121, 127, 128, 130-133, 138-140 and 145 are denied.

3. That discovery shall commence forthwith upon all issues included in the admitted contentions, and

4. That responses to requests for discovery shall be regarded as continuing in nature, and shall be supplemented as reasonably necessary to render them current and accurate pursuant to the provisions of 10 CFR 2.740(e)(3).

THE ATOMIC SAFETY AND LICENSING BOARD

ADMINISTRATIVE JUDGE
Marshal E. Miller

ADMINISTRATIVE JUDGE
Richard F. Cole

ADMINISTRATIVE JUDGE
Dixon Callihan

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Herbert Grossman, Chairman
Glenn O. Bright
Richard F. Cole

In the Matter of **Docket No. 50-367 CPA**
(Construction Permit Extension)

NORTHERN INDIANA PUBLIC SERVICE COMPANY
(Bailly Generating Station, Nuclear 1)

December 24, 1980

The Licensing Board in this construction permit extension proceeding denies for litigation purposes (1) all contentions regarding the merits of a proposed change in design for the facility utilizing "short pilings," and (2) certain newly-raised contentions dealing with matters unrelated to the proposed extension.

RULES OF PRACTICE: LITIGABILITY OF ISSUES (CONSTRUCTION PERMIT EXTENSION PROCEEDING)

Intervenors in a construction permit extension proceeding may only litigate those issues that (1) arise from the reasons assigned to the requested extension, and (2) cannot abide the operating license proceeding. *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear 1), ALAB-619, 12 NRC 558 (1980).

MEMORANDUM AND ORDER

(Denying (1) Newly-Filed Contentions and (2) The Short Pilings Issue

MEMORANDUM

Newly-Filed Contentions

In their supplemental petitions, the State of Illinois (opening para.) and the Porter County Chapter Intervenors (PCCI Contention 12) incorporated by reference unspecified issues that had been raised in documents filed with the NRC during 1979 in support of requests for hearings not involving the requested extension. Pursuant to this Board's provisional and final[1] orders following the special prehearing conference, intervenors were permitted to submit as timely-filed specifically worded contentions in place of their allusions to matters contained in the referenced documents.

PCCI submitted these "newly-filed" contentions, numbered "R-I [Re-worded-Incorporated] 1" to "R-I 15," in their response to the Board's Provisional Order Following the Special Prehearing Conference. These contentions were simultaneously adopted *in toto* by the State of Illinois in its response to our provisional order.

Except for Contentions R-I 10-12, 14 and 15, relating to the alleged need for a new environmental impact statement or supplement to the final environmental statement, the newly-filed contentions are not directly related to the requested construction permit extension. They raise generic safety issues involving post-TMI considerations, Mark II containment design, post-accident monitoring, ATWS, etc., and site-specific safety issues that either had been resolved at the construction permit proceeding or are ordinarily deferred until the operating license stage. Most, if not all, of the issues were previously raised by these or other intervenors and rejected in prior orders on the grounds that no *prima facie* case has been made by the intervenors that these were compelling safety matters that could not abide the operating license proceeding. PCCI and the State of Illinois have made no further showing that these matters cannot abide the operating license stage and request (PCCI Arguments in Support of the Newly-Filed Contentions, dated August 28, 1980, p. 2) merely that they "be allowed sufficient discovery to enable them to establish a *prima facie* showing" to that effect.

On that basis alone — that the burden is on the petitioners in the first instance, without discovery, to make that required *prima facie* showing —

[1]Our final order, LBP-80-22, dated August 7, 1980, is found at 12 NRC 191.

this Board would have been inclined to reject the contentions as not falling within the scope of the proceeding as delineated in our Order Following Special Prehearing Conference. However, because of the imminence of the Appeal Board's ruling on the petitions by the Gary Petitioners and Dr. Schultz, which was expected to shed further light on its decision in *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2) ALAB-129, 6 AEC 414 (1973), we deferred ruling on these contentions.

On November 20, 1980, the Appeal Board issued *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear 1), ALAB-619, 12 NRC 558, affirming this Board's rejection of the petitions of the Gary Petitioners and Dr. Schultz. As anticipated, it discussed its prior decision in *Cook* in a manner which offers further guidance to this Board. It read into the *Cook* decision a determination (Op. 17) that had previously escaped this Board, that an intervenor in an extension proceeding could "only" litigate issues that (1) arose from the reasons assigned to the requested extension and (2) could not abide the operating license proceeding. Considering that the newly-filed contentions, with the possible exception of those relating to the environmental statements, are unrelated to the reasons assigned for the requested construction permit extension (the first prerequisite), this Board has no choice but to reject the contentions, without reaching the question of whether the issues can abide the operating license proceeding (the second prerequisite).

We make no rulings with regard to the environmental contentions pending the receipt of the Staff's determination of the type of environmental analysis to be made. Nevertheless, upon reviewing those contentions we do feel constrained to offer our opinion, that the National Environmental Policy Act of 1969 requires only incremental analyses and not those duplicative of prior analyses. *See generally, Consumers Power Company* (Big Rock Point Nuclear Power Plant) LBP-80-25, 12 NRC 355 (September 12, 1980), and the cases cited therein.

Short Pilings Issue

The Board also deferred ruling on the short pilings issue[2] to await the Appeal Board's decision on the City of Gary's and Dr. Schultz' petitions.

[2]NIPSCO's consultant had testified at the construction permit hearing that the company anticipated driving the foundation pilings to bedrock or glacial till. After the construction permit had issued, NIPSCO communicated to the NRC Staff its intention to install pilings extending only to the glacial lacustrine deposits. In *Northern Public Service Company* (Bailly Generating Station, Nuclear 1) CLI-79-11, 10 NRC 733 (1979), the Commission denied petitions to determine that the proposed change in design constituted a construction permit amendment involving significant hazards considerations that required a hearing. In our Order Following Special Prehearing Conference, LBP-80-22, *supra*, 12 NRC at 198-204, we discussed

Unfortunately, *Bailly*, ALAB-619, *supra*, is not quite as informative with regard to issues arising from the reasons assigned for the construction permit extension as with matters unrelated to the delay in construction, except to reaffirm that related matters might be heard if they could not appropriately abide the operating license proceeding. However, since ALAB-619 did not *broaden* the scope of *Cook*, *supra*, we need not look beyond the answers to the questions we posed to the parties on the short pilings issue[3] to decide *not* to hear that issue in this proceeding.

To begin with, it is clear that, had the short pilings design proposal been in the present posture at the time of the construction permit hearings, the matter would have been considered by the Licensing Board. Despite Permittee's insistence that it is the option of an applicant to defer the operating license proceeding the consideration of design features such as the short pilings proposal (NIPSCO's Objections to Provisional Order, dated June 30, 1980, p. 9; NIPSCO's Response to Board Questions, dated August 25, 1980, pp. 2-4), it is inconceivable that a known design feature of this significance would not have been brought up by the Staff and heard by the board, even if the applicant had sought to defer it. It is also clear to us that only a preliminary, and not a dispositive, review could have been made by a construction permit board. Certainly, considering the uncertainties attendant to the actual placement of the pilings, a board could not now be in a position to offer a final verdict on that design feature. PCCI admit as much when they state (Response to Board's Question on the Short Pilings Issue, p. 4) that "an evaluation of pilings requires consideration of essentially an unknown quantity - i.e., the subsoil composition." In fact, the review of PCCI's and Illinois' submissions with regard to short pilings discloses no substantial reason for a board to *deny* the design change. Intervenors appear to assert merely that short pilings are a somewhat innovative design for nuclear facilities, which require close scrutiny by a licensing board or the NRC Commissioners.

It is clear from reviewing the parties' responses to the Board's questions that the most drastic remedy that conceivably could result from a hearing on the short pilings design in its present posture would merely be the implementation of 10 CFR 50.35(a) to this design feature, under which a research and development program would be required to resolve any safety questions associated with it. Whether any such program sanctioned by the Board would agree in every particular with the extensive program already adopted by the Permittee and Staff, as summarized in the Staff's Response

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the issues raised by intervenors concerning the merits of the short pilings proposal, and posed four questions to the parties.

[3] *See*, fn. 2, *supra*. The questions are found at 12 NRC, p. 203.

to the Board Questions (Lynch Affidavit, pp. 2-8), is not critical in deciding whether a hearing on that issue should be held at this juncture. Nothing submitted to the Board suggests that there exists any material insufficiency in the program already adopted to test the short pilings design in its site-specific application to the Bailly facility. Consequently, we have no basis for finding that the absence of a board's approval of that specific testing program constitutes a compelling reason for determining that a hearing should be held now, rather than at the operating license stage.

ORDER

For the foregoing reasons, it is this 24th day of December 1980
ORDERED

That the newly-filed Contentions numbered R-I 1-9 and 13 *are denied;* and

That all contentions by Intervenors with regard to the merits of the short pilings proposal *are denied.*

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Herbert Grossman, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. Frank F. Hooper
Glenn O. Bright

In the Matter of **Docket No. 50-358 OL**

CINCINNATI GAS AND ELECTRIC COMPANY, *et al.*
(William H. Zimmer Nuclear Station)

December 24, 1980

The Licensing Board denies three motions of applicants related to the intervenors' challenge of applicants' financial qualifications to construct and operate the Zimmer facility and sets a tentative date for a hearing on the financial qualifications issue (including certain matters relevant thereto delineated by the Board).

MEMORANDUM AND ORDER

(Denying Applicants' Motions Concerning Contention 13)

Contention 13 of the Miami Valley Power Project (MVPP), an intervenor in this operating license proceeding, challenges the financial capability of the Applicants (Cincinnati Gas and Electric Company *et al.*) to construct and operate the Zimmer plant. Three motions bearing upon this contention are now before us: the Applicants' motion for dismissal of Contention 13 for default; their earlier motion for summary disposition of that contention; and their motion to require the NRC Staff to provide justification of its inability to proceed on certain matters, including Contention 13. For the reasons which follow, we deny all three motions.

A.1. The motion for dismissal of Contention 13 for default has a long procedural history. Its immediate foundation is the failure of MVPP to

answer or otherwise respond to interrogatories propounded by the Applicants on November 21, 1979 (Applicants' Seventh Set of Interrogatories to MVPP). Earlier, on two occasions, MVPP had responded to questions on its Contention 13 (MVPP's Answer to Applicants' Second Set of Interrogatories, dated February 22, 1979; MVPP's Answers to Applicants' Third Set of Interrogatories, filed April 11, 1979). Moreover, at the behest of MVPP, we reopened discovery on Contention 13 to explore the basis of new cost estimates unveiled by the Applicants in the summer of 1979. See our Memorandum and Order Ruling on Various Motions and Rescheduling Evidentiary Hearing, dated October 1, 1979 (unpublished), at pp. 4-5.

The Applicants, Staff and MVPP each filed new discovery requests concerning Contention 13. The Applicants and Staff each answered (or objected to) MVPP's interrogatories. MVPP failed to respond to the requests outstanding against it. The Applicants thereupon, on January 8, 1980, moved to dismiss Contention 13 for default. By our Memorandum and Order of January 31, 1980 (unpublished), we denied that motion but directed MVPP to respond by February 19, 1980 to all except one of the interrogatories. MVPP failed to do so and, as a result, the Applicants on February 25, 1980 renewed their motion to dismiss Contention 13. The Staff supported the motion. Neither MVPP nor any other party responded.

In our Memorandum and Order Denying Motion to Admit Additional Contentions, LBP-80-24, 12 NRC 231 (August 20, 1980), we denied the request of Dr. David Fankhauser, another intervenor in this proceeding, to admit a new contention questioning the Applicants' "financial capability." The basis for Dr. Fankhauser's request had in part been new cost information transmitted to us and the parties by the Applicants on May 6, 1980. We declined to admit Dr. Fankhauser's new contention in large part because of its overlap with MVPP's Contention 13 and Dr. Fankhauser's failure to demonstrate why admitting his contention would likely lead to the development of a more complete record on the financial qualifications question. Notwithstanding such denial, we ruled that we would be prepared to consider Dr. Fankhauser a co-sponser of Contention 13, and to permit him to file evidence-in-chief, if he were to demonstrate that he has testimony to sponsor which could serve to create a more complete record. *Id.* at 239. We established a schedule for such demonstration, permitting Dr. Frankhauser to file information no later than 15 days following service of the portion of the Staff's Safety Evaluation Report (SER) dealing with financial qualifications. We also noted that we would defer ruling on the Applicants' motion to dismiss Contention 13 for default until after we have received the Staff's financial qualifications SER. *Id.* at 239, fn. 10.

By Memorandum dated September 17, 1980 (unpublished), we inquired when the Staff would be able to go to hearing on the financial qualifications issue. We also outlined three subjects which we expected the Staff to consider, either in its SER on financial qualifications, or through testimony or some other document entered into the record of this proceeding. By letter dated October 20, 1980, the Staff stated that its financial analysts were involved on a full time basis on the financial aspects of the Three Mile Island (TMI) accident and that, therefore, it could not project a meaningful schedule. By letter dated December 9, 1980, however, the Staff reported that the financial review of TMI had been deferred and, as a result, that it anticipates that its financial review in this proceeding will be completed during the last half of January, 1981. It added that it was analyzing new information which the Applicants had forwarded to it in November 1980 (with copies to the Board and parties) and that it would be prepared to go to hearing as soon after the issuance of its financial qualifications SER as the Board decides is proper.

2. We are confronted here with a situation where the financial implications of the Zimmer application appear to have changed dramatically since the financial qualifications of the Applicants were reviewed at the construction permit stage. At that time, the project was estimated to cost approximately $288 million (Construction Permit FES, September, 1972, p. XI-21). By 1977, the estimated capital cost has risen to $470 million (Operating License FES, NUREG-0265, 10.4). As recently as July 30, 1979, the Applicants estimated the total cost of the facility to be $850 million. In May, 1980, the estimate was raised to $1 billion. And according to the material submitted by the Applicants in November, the cost is now estimated at $1,067,320,000. Projected operating costs have also risen: in 1977, the estimated annual cost of fuel, operation and maintenance, and decommissioning was $53,200,000 (Operating License FES, NUREG-0265, Table 10.1). In its most recent submission, the Applicants projects operating costs (not including decommissioning) of $1,299,576,000 for the first five years of operation ($259,915,200 annually), more than a five-fold increase in three years.

These significant increases have not been reviewed in an adjudicatory proceeding. If we should dismiss Contention 13 for default, they would not be so reviewed. In their January 8, 1980 and February 25, 1980 dismissal motions, the Applicants assert that the question of the financial qualifications of an applicant for an operating license is not a serious safety matter which would require independent Licensing Board review should the contention be dismissed. In the case upon which they principally rely, *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 17-21 (1978), the Commission explicitly declined to

define the precise relationship between safety and financial qualifications. It limited the precision with which financial qualifications of an applicant need be analyzed but stressed that the prospect of future rate increases is a factor which should be taken into account. Moreover, in our view, the potential safety problems which could result from the financial difficulties faced recently by the owners of the damaged TMI reactor belie the asserted lack of safety significance of a financial qualifications inquiry. See, *e.g.*, "Potential Impact of Licensee Default on Cleanup of TMI-2," NUREG-0689, November, 1980.

It is clear to us that MVPP's failure to respond to the Applicants' interrogatories concerning Contention 13, and to our Order of January 31, 1980 directing a response to all but one of those interrogatories constitutes a default which could warrant our granting the relief requested by the Applicants. This is so even though MVPP on two earlier occasions had responded to questions on Contention 13. For the recent developments with respect to that issue—which caused MVPP to seek, and us to grant, a reopening of discovery—are likely to comprise the most significant elements in the resolution of Contention 13.

Nonetheless, we do not believe that Contention 13 should be dismissed for default. Recent developments, such as the issuance of NUREG-0689, emphasize the safety significance of the financial qualifications issue. Those developments, together with the interest in the financial qualifications issue asserted by more than one intervenor, lead us to the conclusion that this issue should be litigated in an adjudicatory hearing. For that reason, there seems to be no useful purpose for us to await the issuance of the Staff's SER to rule on the Applicants' motion. Our ruling at this time will enable us to hold the hearing on Contention 13 earlier than would otherwise be the case. At the hearing, we will expect the Applicants and Staff to produce knowledgeable officials to address the substantive matters outlined in our Memorandum of September 17, 1980. The prospect of future rate actions of agencies of the State of Ohio to respond to financial developments is relevant to those substantive matters and should comprise a portion of the parties' direct case on Contention 13.

Even though we are not dismissing Contention 13, we are granting the Applicants the alternate relief which they seek. If MVPP is to present a direct case with respect to Contention 13, and if it is to seek any further discovery on Contention 13 (to the extent permitted by our Memorandum and Order dated October 1, 1979), it must respond to the outstanding

discovery requests relevant to that contention by no later than January 16, 1981.[1] To avoid surprise, MVPP must also, no later than 7 days prior to the commencement of the evidentiary hearing on Contention 13, identify, and make available for inspection and copying, any documents of which it is then aware and upon which it intends to rely or which it intends to utilize during cross-examination. (If MVPP identifies these documents less than 14 days prior to the hearing, it should advise the Applicants and Staff of these documents by telephone).[2]

To preclude potential schedule conflicts on the part of one or more of the Board members, we would hope to hold the evidentiary hearing on Contention 13 during the last week in February, 1981.

B. The developing financial information which we have described has rendered obsolete the Applicants' April 23, 1979 Motion for Summary Disposition of Contention 13.[3] Even assuming that at that time there was no genuine issue of material fact to be heard, some of the facts upon which the Applicants then relied are clearly no longer applicable to the financial qualifications issue now before us (*e.g.,* statement of material facts, paragraphs 29 and 30). Moreover, MVPP in its response to the motion, filed May 18, 1979, sets forth certain material facts which appear to be in dispute.[4] Given these circumstances, we deny the Applicants' motion..

C. Finally, the Staff has responded to the Applicants' motion to require the NRC Staff to provide justification of its inability to proceed on certain matters by setting forth proposed schedules for the various matters about which we inquired in our Memorandum of September 17, 1980. As discussed previously, the Staff stated that its financial qualifications review will be completed during the last half of January, 1981, and that it will be prepared to go to hearing shortly thereafter. The Staff also provided a schedule for the completion of its review of unresolved generic issues. This schedule does not appear to us to be unreasonable or to require that we take any action at this time to attempt to shorten it. For that reason, we dismiss the Applicants' motion as moot.

For the foregoing reasons, it is, this 24th day of December, 1980.

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[1]We are affording MVPP this additional opportunity to present a direct case on Contention 13 in part because of the change in its lead counsel. See notice of withdrawal of former counsel of record, dated September 25, 1980, and notice of appearance of new counsel of record, dated November 6, 1980.

[2]We request Dr. Fankhauser also to notify the Applicants and Staff by telephone (on the schedule established earlier) if he seeks to present a witness on Contention 13.

[3]In our Prehearing Conference Order of June 4, 1979 (unpublished), we noted that we were deferring ruling on this motion, pending receipt of additional information concerning Commission actions emanating from the TMI accident.

[4]We note, however, that MVPP's response is technically deficient in that the facts are not supported by affidavit.

ORDERED

That the Applicants' motion for dismissal of Contention 13 for default is *denied;*

That the hearing on Contention 13 is *tentatively scheduled* for the last week of February, 1981, with participation by MVPP subject to the conditions outlined herein;

That the Applicants' motion for summary disposition of Contention 13 is *denied;* and

That the Applicants' motion to require the NRC Staff to provide justification of its inability to proceed on certain matters is *dismissed* as moot.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-155**
(10 CFR 2.206)

CONSUMERS POWER COMPANY
(Big Rock Point Plant) **December 18, 1980**

The Director of Nuclear Reactor Regulation denies a petition which requested suspension of operation of the Big Rock Point Plant pending resolution of safety issues concerning emergency planning, loose materials in the reactor vessel, reactor instrumentation, plant shielding, operability of containment isolation valves, impacts of aircraft crashes, fire protection, and prevention of loss of feedwater incidents.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petitions dated November 4, 1979, and January 6, 1980, Ms. JoAnn Bier and Ms. Shirley J. Johns requested that the Nuclear Regulatory Commission's (NRC or the Commission) Director of Nuclear Reactor Regulation issue an order to Consumers Power Company (the licensee) to delay startup of the Big Rock Point Plant pending resolution of eight items considered by them to be safety issues. Six of the seven issues identified in the November 4, 1979 request were repeated, with clarifications, in the request of January 6, 1980. An eighth issue was added in the January 6, 1980 submittal. Notice of receipt of the November 4, 1979 petition was published in the *Federal Register* on December 11, 1979 (44 FR 71489).

The petitions were not received by the Commission prior to restart of the Big Rock Plant. Consequently, the petitions have been treated as requests for an order to show cause why Facility Operating License No. DPR-6 for the Big Rock Point Plant should not be suspended pending resolution of the issues raised. A preliminary safety assessment of the issues raised in the petitions was issued on March 5, 1980. Based on that assessment I concluded that sufficient assurance of safety existed to permit the Big Rock

facility to continue operating pending final disposition of the issues raised in the petitions.

Evaluation of the issues raised in the petitions has now been completed. Based on analysis of each of the issues raised which is set forth below, I have determined that the operating license for the Big Rock facility should not be suspended. The analyses for Items 2, 3, 5, and 6 of the November 4, 1979 petition and Item 4 of the January 6, 1980 petition are unchanged from those contained in the March 5, 1980 Safety Assessment.

DISCUSSION

Issue: "1.

> We demand that our school systems have workable, safe evacuation plans for our children and that all private citizens be informed of appropriate individual evacuation actions."

Response:

The Big Rock Point Emergency Plan currently approved by the NRC requires notification of a number of government organizations including the local sheriffs, Michigan State Police and the Michigan State Department of Health in the event of a serious emergency. Local and State officials would be responsible for notification of local school systems and evacuation, if needed.

New emergency planning regulations were published in the *Federal Register* on August 19, 1980 (45 FR 55402). These new regulations (copy attached) became effective on November 3, 1980 and are generally to be implemented by April 1, 1981 by licensees of operating plants. Section II A, B, and C of the revised Appendix E states:

"As a minimum, the following items shall be described:

A. Onsite and offsite organizations for coping with emergencies and the means for notification, in the event of an emergency, of persons assigned to the emergency organizations.

B. Contacts and arrangements made and documented with local, State, and Federal governmental agencies with responsibility for coping with emergencies, including identification of the principal agencies.

C. Protective measures to be taken within the site boundary and within each EPZ to protect health and safety in the event of an accident; procedures by which these measures are to be carried out (e.g., in the case of an evacuation, who authorizes the evacuation, how the public is to be notified and instructed, how the evacuation is to be carried out); and the expected response of offsite agencies in the event of an emergency."

The Big Rock Point Plant's Emergency Plan is being evaluated against these requirements.

On September 5, 1980, we requested Consumers Power Company to begin implementation of their June 9, 1980 version of the Big Rock Point Emergency Plant, although we have not yet completed our review. This request was based on our finding that this version provides an improvement over the previous plan, affords a greater margin for protection of public health and safety, and does not decrease the effectiveness of emergency preparedness. Consumers Power Company has recently informed us that they expect to implement the June 9, 1980 version of the Emergency Plan by December 31, 1980.

Based on: (1) the existence of an approved Emergency Plan which conforms to our current regulations, and (2) the results so far of our review of the draft revision of the plan, we have not identified any deficiencies in emergency planning which are so significant as to require suspension of the operating license.

Issue: "2.

We demand accountability for all diffuser pieces, which if left within the reactor vessel could interfere with rod movement and cause flow blockage as in the partial meltdown at the Fermi I Plant in Detroit."

Response.

On April 20, 1979, during shutdown conditions, Big Rock Point personnel detected a vibration-type noise in the lower pressure vessel when the No. 1 recirculation pump was in service. Because of an unrelated problem (a leak in a control rod drive housing) the reactor core was defueled and vessel internals removed. Subsequent inspection revealed that the No. 1 recirculation inlet baffle plate was loose from its mounting brackets on the vessel wall. The recirculation inlet baffle plates were not completely effective, and in 1963 a new skirt baffle was installed on the core support plate and completely encircled all the support tubes. The old baffle plates had been left in place and over the years the three hold-down bolts were worn through allowing the baffle plate to vibrate against the new skirt baffle. The safety consequences of this failure were minimal since the plates are designed such that they cannot enter the core or constitute a flow blockage. During the 1979 outage, new diffuser plates were installed using larger hold down bolts and positive nut locking devices.

All the bolt ends and nuts from the old plates were accounted for and the reactor vessel was cleaned and inspected to assure that there were no other loose materials that could affect reactor operations.

Issue: "3.

We demand that Consumers Power Company systematically and absolutely make the necessary design alterations in the reactor level vessel instrument system LEREO9 and LSREO9 which initiates reactor scram, containment isolation and core spray actuations."

Response:

By Licensee Event Report 79-22 submitted to the NRC to letter of September 22, 1979, the licensee reported a potential deficiency in the water level instrumentation used for reactor scram and initiation of engineered safety features. CPCO modified the instrumentation and submitted an evaluation of the acceptability of the modification to us by letters of October 23 and October 31, 1979. By Amendment No. 31 dated November 2, 1979 (copy attached to our March 5, 1980 Assessment) we approved revised license Technical Specifications for the modified instruments. The Safety Evaluation accompanying that amendment addresses the acceptability of changes to the Technical Specifications and the acceptability of the modification made to the water level instruments. As explained in that document, we have concluded that the design alterations are acceptable and that no further actions are necessary.

Issue: "4.

We demand that the biological shield be made sufficient to contain deadly gamma rays in the event of loss-of-coolant accident (LOCA), area residents would be protected and plant personnel would be able to perform necessary functions to bring the plant under control."

Response:

One of the Lessons Learned from the TMI-2 accident is that radiation fields resulting from contained radiation sources after an accident may make it difficult to effectively perform accident recovery operations or may impair safety equipment. As a result, by letter of October 30, 1979 we asked nuclear power plant licensees to perform a design review of plant shielding by January 1, 1980 and to implement needed changes by January 1, 1981. Consumers Power Company submitted the design review by letter of December 27, 1979 and identified areas of the plant which would need additional shielding protection if NRC design criteria were to be met.

By letter dated February 22, 1980 and supplements dated April 2, May 6, August 25 and September 2, 1980, Consumers Power Company requested a delay in implementing the plant shielding requirement until the completion of an ongoing risk assessment of the plant. Consumers Power

Company has estimated that this risk assessment will be completed by April 1981.

On September 5, 1980 in a letter to all licensees, we provided clarification of the TMI Action Plant requirements including modifications to the implementation schedules for certain items. These proposed changes included a delay in the scheduled implementation of post accident shielding until January 1, 1982. This schedule for the implementation of post accident shielding was subsequently approved by the Commission as indicated in NUREG-0737, "Clarification of TMI Action Plan Requirements." By letter dated October 14, 1980, the staff responded to the licensee's request for this delay. Because the implementation date for these requirements has been delayed until January 1, 1982 for all licensees, as discussed above, we concluded that no additional delay specifically for the Big Rock facility is needed at this time.

As required by the staff, the licensee has completed a review of vital areas in which personnel occupancy may be limited by radiation during post-accident operations. Our safety evaluation of the implementation of "Category A" Lessons Learned requirements was issued on May 2, 1980 and stated that the control room, the interim Technical Support Center and the Operational Support Center are sufficiently shielded that they would remain accessible for continuous occupancy. The vital areas in which personnel occupancy may be limited are the backup emergency and the emergency diesel general fuel supply. The licensee initiated work to implement changes for these three items, and two of them, the relocation of the backup emergency diesel and the modification to the emergency diesel general fuel supply, should be completed shortly. With respect to the third item, the licensee began implementation of the modifications but has recently informed us that preliminary results from the probabilistic risk assessment being conducted for the Big Rock Point plant could affect the need for the modification to the backup cooling water supply hose to core spray heat exhanger. Accordingly, they indicated that work on this third item has been stopped. Because of the delay in the implementation of additional shielding requirements until January 1, 1982, as discussed above, the licensee had additional time to further assess this modification.

The NRC design criteria assume a very severe accident with a very large radiation source term and assume that stringent limits on radiation exposure to personnel would be met.

Because of the staff safety evaluation which concluded that the control room, the interim Technical Support Center and the Operational Support Center would remain accessible under post accident conditions, and the steps already taken to protect two of the three remaining vital areas of concern, it is our judgment that a deferral of implementation of additional

shielding protection requirements until 1982 will not result in exposure of plant personnel to significant risk from a loss-of-coolant accident or a greater risk to the public than previously evaluated, if such an accident should occur. However, we will require more immediate actions if further review indicates they are warranted.

Issue: "5.

We demand that repetitive malfunction of their containment isolation valves CV/4096, CV/4097 be resolved."

Issues: "6.

We demand that the repetitive malfunctions of valves CV/4027, CV/4117, CV/4105, MO/7050 be resolved."

Response:

Repetitive malfunctions have occurred in several containment isolation valves. Valve CV/4097 is a butterfly valve in the supply line of the containment ventiliation system. The valve is a replacement valve installed in April 1974. Excessive leakage through this valve was reported March 31, 1975, June 5, 1975, May 3, 1976 , July 2, 1976, February 1, 1978, September 12, 1978 and February 1, 1979. Our records indicate that with the possible exception of one test, the leak rate through the line during accident conditions would have been acceptably limited by another operable insolation valve (CV/4096) in the same line. In one instance (LER RO-12-76 dated July 2, 1976) our readily available records do not indicate whether the leak rate through the line would have been acceptably low. In each case, the licensee took corrective action to bring the leakage back to within acceptale limits and after repetitive failures the licensee initiated a review with the vendor to bring about long term improvements. We will continue to monitor the test results on CV/4097 to determine if additional corrective actions are needed. Our records do not indicate repetitive failures of valve CV/4096.

MO/7050 is a main steam isolation valve. A failure of this valve to close was reported April 5, 1973. The licensee ordered a new type of valve packing as a long term corrective action. We will also continue to monitor the test results on this valve to assure that the corrective action taken is sufficient.

CV/4027 is an automatic isolation valve in the reactor and fuel pit drain line. Leakage in excess of technical specification limits for this line was reported by Licensee Event Reports (LERs) dated June 10, 1975, and September 27, 1978. In each instance, Valve CV/4117, which is redundant to Valve CV/4027, was operable and would have prevented excessive

leakage through the line. The valve seats of CV/4027 have been machined to reduce the leak rate and the licensee has committed to installation of new valve seats. A recent LER dated October 17, 1980 reported through seat leakage in excess of technical specifications limits. Backup valve CV/4117 has been disabled in the closed condition until repairs can be made.

We have no record of failure on valve CV/4117. This valve was identified in several Licensee Event Reports noted above as the valve which provided redundancy to a valve with excessive leakage.

CV/4105 is an air operated isolation valve on the demineralized water line inside containment. Our records do not indicate a repetitive failure of this valve.

Based on our review of these valve malfunctions and the corrective actions taken by the licensee, it is our judgment that these events did not significantly affect the health and safety of the public. It is our further judgment that these valve malfunctions do not indicate a significant pattern of valve failures. Therefore, we conclude that these valve malfunctions do not require shutting down the Big Rock Point Plant.

Issue: "7.

We demand evidence that the BRNPF could withstand the crash of a B-52 Bomber without disaster to surrounding environment."

Response:

The concern with overflight of the Big Rock facility by aircraft began in 1963, when the Air Force installed an aircraft tracking station at Bayshore, Michigan, which is located approximately five miles from the Big Rock Point Plant. Following this installation, the Air Force began training the tracking station personnel in the detection of approaching aircraft. Concurrently, the Air Force was training the flight crews in avoiding detection by the radar station.

In the beginning it appeared that the Air Force was using the Big Rock Point Plant as a flight target, since there were many close overflights. Consumers Power Company management complained to the Atomic Energy Commission (AEC) regarding this matter, and an agreement was reached with the Air Force at that time to discontinue the direct low level overflights. Low level overflights in the near vicinity of the plant continued until 1970 when the Big Rock Point Plant insurer raised the insurance rates because of these training flights in the near vicinity of the plant. At that time, the Consumers Power President, James H. Campbell, contacted Congressman Gerald Ford, requesting that these training flights in the near vicinity of the Big Rock Point Plant be discontinued. At about this same time, in January of 1971, a flight crashed into the Little Traverse Bay

approximately two miles from shore and about two miles from the plant. As a result of these events the Air Force established a training corridor which misses the Big Rock Plant by three miles. Air Force charts were also marked to show that overflights of the Big Rock Point Plant were "Off-Limits" and all training flights were to be confined to the corridor. From that time until July 1979 no low level overflights have been observed by plant personnel. In July 1979 a low level overflight was observed and a complaint was registered by Consumers Power Company management. The Air Force stated that restrictions on overflights would also be added to the flight checklists.

We reviewed the risk associated with aircraft near Big Rock Point in the Systematic Evaluation Program. At the request of the NRC staff, the Air Force undertook a study to update an earlier analysis of the risk of a military aircraft on training route IR 600/601 crashing into the plant. The study was based on recorded data on flight frequency, navigation error, and crash rate. The Air Force calculated that the probability of a crash at the plant (represented by a square target area 3.45 miles on a side) was approximately 10^{-8} per year. The staff has reviewed the Air Force analysis and is in essential agreement with the methodology employed and the finding that a military aircraft crash at the plant is an extremely remote event. Furthermore, in the course of this review, the staff was informed by the Air Force that permission had been requested from the Federal Aviation Administration (FAA) to adjust route IR 600/601 so that in effect it would be located at a greater distance from the plant. The staff was subsequently informed that the request had been approved and the Air Force has published the new route. The adjusted route will pass approximately 12 miles west of the plant. We conclude that the risk to plant safety of military aircraft on route IR 600/601 in its present configuration meets the acceptance criteria of section 2.2.3 of the NRC Standard Review Plan for new plants and is therefore acceptable.

Issue: "8.

We demand that minimum requirements as established by the Nuclear Regulatory Commission for the Fire Protection System be met."

Response:

By License Amendment No. 17, dated March 6, 1978, No. 25, dated April 4, 1979, and No. 32 dated March 27, 1980, we issued license conditions to assure that an acceptable level of fire protection is achieved at the Big Rock Point Plant. Amendments No. 17 and No. 25 added limiting conditions of operation and surveillance requirements to assure that existing fire protection equipment is operable and to require that modifica-

tions be made on a time schedule specified in Amendment No. 25 to further enhance fire protection at the plant. The staff safety evaluations associated with these amendments summarize our considerations in imposing these limiting conditions. Amendment No. 32 increased the number of fire brigade members from three to five. It is our judgment that sufficient measures have been taken to permit continued plant operation prior to full implementation of all identified improvements identified in License Amendment No. 25.

In addition, the Commission published on November 19, 1980 (45 FR 76602), a revised Section 10 CFR 50.48 and a new Appendix R to 10 CFR 50 regarding fire protection features of nuclear power plants. The revised Section 50.48 and Appendix R will become effective February 17, 1981. A copy of this *Federal Regiser* Notice is enclosed. Appendix R and Section 10 CFR 50.48 contain provisions and implementation dates applicable to the Big Rock Point Plant.

The petition of November 4, 1979 included one concern not repeated in the petition of January 6, 1980. That item (concern number 4) is addressed below.

Issue: "4.

We demand that all NRC requirements issued to Consumers Power Company regarding the Oyster Creek occurrence [sic] be implemented with no proposed changes, technical specifications or administrative control compromises allowed."

Response:

Following a loss of feedwater event at Oyster Creek Nuclear Generating station on May 2, 1979, we determined that Big Rock Point was susceptible to a similar problem and would require a change in the technical specifications appended to the license prior to startup from the 1979 outage. Our evaluation indicated that two additional technical specifications were appropriate for Big Rock Point and these technical specifications were issued October 30, 1979 prior to plant startup. Amendment No. 30, which changed the technical specifications and a copy of the associated NRC Staff Evaluation was included with our Assessment dated March 5, 1980. It is our judgment that the changes made are appropriate for Big Rock Point and do not constitute any compromise of safety.

CONCLUSION

Based on the forgoing discussion and the provisions of 10 CFR 2.206 I have determined that there is no adequate basis for the issuance of an order to show cause why Facility Operating License No. DPR-6 for the Big Rock Point Plant should not be suspended. The requests of Ms. JoAnn Bier and Ms. Shirley Johns are, therefore, 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 Big Rock Plant, located at the Charlevoix Public Library, 107 Clinton Street, Charlevoix, Michigan 49720. A copy of this decision will also be filed with the Secretary for further Commission 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 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 18th day of December 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-155**
(10 CFR 2.206)

CONSUMERS POWER COMPANY
(Big Rock Point Plant) **December 18, 1980**

The Director of Nuclear Reactor Regulation denies a petition under 10 C.F.R. 2.206 which requested that the Big Rock Point Plant be shut down because it does not meet minimal Nuclear Regulatory Commission requirements relating to containment integrity.

DIRECTOR'S DECISION UNDER 10 C.F.R. 2.206

By petition dated April 1, 1980, Christa-Maria, on behalf of Concerned Citizens for the Charlevoix Area, requested that the Big Rock Point Plant be shutdown immediately because it does not meet minimal Nuclear Regulatory Commission (NRC) requirements relating to containment integrity. This petition has been considered under the provisions of 10 C.F.R. 2.206 of the Commission's regulations. Notice of receipt of the petition was published in the *Federal Register* July 7, 1980 (45 FR 45748).

The basis of Christa-Maria's petition is the contention that the steel containment at the Big Rock Plant is insufficient to contain radiation in the event of an accident. Petitioner asserts that continued operation of the Big Rock Point Plant with an unshielded steel containment is in direct violation of NRC requirements. Upon consideration of the information set forth in Christa-Maria's petition, it has been determined that Christa-Maria has not presented any new information or reasons which constitute a basis for shutting down the Big Rock Point Plant.

DISCUSSION

Christa-Maria asserts that the unshielded steel containment at the Big Rock Point Plant is insufficient to contain radiation and that this is in direct

violation of "requirement 2.213" of NUREG 0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendation," which states that nuclear power plants must shut down immediately in the event of a complete loss of safety function.

It is assumed that the reference to "requirement 2.213" of NUREG 0578 in Christa-Maria's petition is a typographical error and that the reference was intended to be to Section 2.2.3. In that section, the NRC Lessons Learned Task Force had originally proposed that the Technical Specifications for each reactor should provide that the reactor be placed in a hot shutdown condition within 8 hours and a cold shutdown condition within 24 hours from the time that the reactor is found to be or has been in operation with a complete loss of safety function. However, based on further review, the NRC staff determined that rather than implement the original proposal at this time a broad new rulemaking should be undertaken which would require plant shutdown for various human and procedural errors. Accordingly, the NRC's September 13, 1979 letter to all licensees indicated that no further action on section 2.2.3 would be required by the licensees pending the actions of the rulemaking process. Consequently, the "requirement" which Christa-Maria asserts the Big Rock facility is violating is not currently a requirement for NRC licensees.

The issue of adequate shielding from post-accident radiation fields is still under active review. One of the lessons learned from the TMI-2 accident is that radiation fields resulting from contained radiation sources after an accident may make it difficult to effectively perform accident recovery operations or may impair safety equipment. As a result, by letter of Octtober 30, 1979, we asked nuclear power plant licensees to perform a design review of plant shielding by January 1, 1980 and to implement needed changes by January 1, 1981. The NRC design criteria assume a very severe accident with a very large radiation source term and assume that stringent limits on radiation exposure to personnel would be met. Consumers Power Company submitted the design review by letter of December 27, 1979 and identified areas of the plant which would need additional shielding protection if NRC design criteria were to be met.

By letters dated February 22, April 2, May 6, August 25, and September 2, 1980, Consumers Power Company had requested a delay in implementation of additional shielding protection until the completion of an ongoing risk assessment of the plant, estimated to be April 1981. The requested delay was effectively mooted by the publications of NUREG-0737, "Clarification of TMI Action Plan Requirements" which modifies the implementation date for necessary changes to January 1, 1982.

As required by the staff, the licensee has completed a review of vital areas in which personnel occupancy may be limited by radiation during

post-accident operations. Our safety evaluation of the implementation of "Category A" Lessons Learned requirements was issued on May 2, 1980 and stated that the control room, the interim Technical Support Center and the Operational Support Center are sufficiently shielded that they would remain accessible for continuous occupancy. The vital areas in which personnel occupancy may be limited are the backup emergency diesel, backup cooling water supply hose to the core spray heat exchanger and the emergency diesel general fuel supply. The licensee initiated work to implement changes for these three items., and two of them, the relocation of the backup emergency diesel and the modification to the emergency diesel general fuel supply, should be completed shortly. With respect to the third item, the licensee began implementation of the modifications but has recently informed us that preliminary results from the probabilistic risk assessment being conducted for the Big Rock Point plant could affect the need for the modification to the backup cooling water supply hose to core spray heat exchanger. Accordingly, they indicated that work on this third item has been stopped. Because of the delay in the implementation of additional shielding requirements until January 1, 1982, as discussed above, the licensee had additional time to further assess this modification.

Because of the conservatism of the design requirements against which the shielding acceptability must be evaluated, it is our judgment that a deferral of implementation until 1982 will not result in exposure of plant personnel to significant risk from a loss-of-coolant accident or a greater risk to the public than previously evaluated, if such an accident should occur.

CONCLUSION

Based on the foregoing discussion and the provisions of 10 C.F.R. 2.206, I have determined that there is no adequate basis for shutting down the Big Rock Point Plant. The request by the Concerned Citizens of Charlevoix Area is, therefore, *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 Big Rock Point Plant, located at the Charlevoix Public Library, 107 Clinton Street, Charlevoix, Michigan 49720. 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 18th day December 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

Victor Stello, Jr., Director

In the Matter of **Docket No. 50-271**
(10 CFR 2.206)

VERMONT YANKEE NUCLEAR POWER CORPORATION
(Vermont Yankee Nuclear Power Station)

December 29, 1980

The Director of the Office of Inspection and Enforcement denies a request under 10 CFR 2.206 which asked that the Commission conduct a full and public investigation into the operation and safety of the Vermont Yankee Nuclear Power Station, that a public hearing be held on the findings of such investigation, and that the Vermont Yankee facility, shut down for refueling and miscellaneous repairs at the time of the request, remain shut down until the requested investigation and hearing were completed.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

Ms. Virginia Callan and Mr. Cort Richardson, by letter to Chairman Ahearne dated November 27, 1980, on behalf of the Vermont Yankee Decommissioning Alliance, as well as several other individuals,[1] have requested that the Commission conduct a full and public investigation into the operation and safety of the Vermont Yankee Nuclear Power Plant, that a public hearing be held on the findings of such investigation, and that the facility remain shutdown[2] until the requested investigation and hearings are completed. Ms. Callan and Mr. Richardson's letter has been referred to the

[1]Randolph Wilson of South Royalton, Vermont; Leslie J. Dowling of Brattleboro, Vermont; Lisa Limont and others on behalf of the Ad Hoc Citizens Group for Safety at Vermont Yankee, of Greenfield, Massachusetts; MacNeil of Greensboro, Vermont; and Jean V. Lowell of Holland, Vermont.

[2]As of the date of Ms. Callan and Mr. Richardson's letter, the Vermont Yankee facility was shutdown for refueling and miscellaneous repairs.

Office of Inspection and Enforcement for action pursuant to 10 CFR 2.206 of the Commission's Regulations.

Ms. Callan and Mr. Richardson contend that recently a number of serious and unexpected problems have surfaced at the Vermont Yankee facility. Their letter states that "there will be a real and imminent threat to human life if Vermont Yankee reopens." Specifically, they allege that cracks and corrosion in a sixty foot section of pipe in the plant's water cleanup system have recently been discovered; that the facility's turbine generator showed signs of significant wear and will require repairs; that the recent replacement of a large number of bolts in the facility's piping support system raises concerns about the safe operation of the facility; that the Dry Well Torus emergency containment system has a history of repeated and costly failures in repair attempts "resulting in years of operation without the full benefit of this critical safety system;" that Vermont Yankee is the only plant in the country that refuses to install an inerting system; and finally that the plant has been allowed to operate since "last June" without any further action from Vermont's Water Resources Board on the company's applicaton to renew its water discharge permit.

On December 15, 1980, the Office Director and members of his Staff, met with four representatives, including Ms. Callan and Mr. Richardson, of the Vermont Yankee Decommissioning Alliance in Bethesda, Maryland to discuss the issues raised in Ms. Callan and Mr. Richardson's letter.

After considering the requests, for the reasons set forth below, I have concluded that a full and public investigation into the issues they raise is not warranted and that the public health and safety does not require that the Vermont Yankee facility remain shutdown. Accordingly, I have determined not to grant the requested relief.

I

All of the issues which Ms. Callan and Mr. Richardson cited in their letter had been identified previously and are being resolved on a generic basis. The letter contained no new information or safety concerns unknown to the NRC. The five issues raised by Ms. Callan and Mr. Richardson's letter that are within NRC jurisdiction are discussed in detail below. Findings and actions taken by the licensee and the NRC are addressed. The sixth issue, regarding action of the Vermont Water Resource Board, does not lie within the purview of the NRC, and therefore is not addressed in this decision.

1. Reactor Water Cleanup System Cracks and Repair

Ms. Callan and Mr. Richardson's letter alleges that "cracks and corrosion have been discovered in components of the plant's water cleanup system including a sixty foot section of the very important reactor water discharge pipe." They contend that these cracks and corrosion have the potential for causing a loss of coolant in the reactor that would result in immediate danger to the public.

The reactor water cleanup (RWCU) system installed at the Vermont Yankee (VY) plant is not a nuclear safety related system. It functions neither to provide cooling for the reactor core nor to mitigate the consequences of any of the analyzed accidents considered in the facility design. The design function of the RWCU system is to provide purification (cleaning) of reactor water, which is accomplished by continuously removing a portion of the reactor water and processing it through filter demineralizer units to undergo mechanical filtration and ion exchange processes. Except for an approximate 60 foot length of piping and two associated valves located inside the drywell containment, all other RWCU system piping and components are located outside the drywell and are subject to routine visual surveillance during plant operaton. The visual surveillance, together with leakage monitoring instrumentation, provide assurance of early detection of a leak should one occur. The RWCU system piping inside the drywell provides the tap-off point from which reactor coolant water is taken to be processed. This piping and associated isolation valves are a part of the reactor coolant system pressu e boundary. This portion of RWCU piping, along with all other piping inside the drywell, is subject to continuous monitoring by leakage detection instrumentation. (Limited access to the drywell prohibits routine visual surveillance of RWCU piping during normal plant operations). The drywell leakage monitoring systems provide assurance of leak identification at an early stage so that proper corrective actions can be taken well before leakage becomes sufficient to compromise the reactor coolant barrier integrity.

A further point should be made to bring into perspective the problem of cracking in RWCU system piping. One could postulate, in spite of assurance of leakage detection capability provided by routine surveillance and leakage monitoring systems, that a complete break (severence) occurs in the 4 inch diameter RWCU piping inside the drywell. The emergency core cooling systems (ECCS) installed at the VY plant are capable of providing adequate core cooling and protection for a spectrum of pipe break sizes, up to and including the break of a 28 inch diameter recirculation system pipe. The complete loss of a 4 inch

diameter RWCU system pipe is well within the capability of and protection afforded by the ECCS and thus, no danger to the health and safety of the public should occur.

Notwithstanding the above, the integrity of the RWCU system, along with all other piping attached directly to the reactor coolant system, is of importance. To provide additional assurance of piping integrity, or conversely, to provide assurance that degradation of piping integrity is identified well before significant leakage could develop, all reactor coolant system pressure boundary piping inside the drywell, including RWCU system piping, is subject to inservice inspection (ISI). The ISI program is performed in accordance with industry codes and standards. For Vermont Yankee the governing Code is the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, 1974 Edition, Section XI Rules for Inservice Inspection of Nuclear Power Plant Components. This provides a systematic means of inspecting reactor coolant system piping. Inspections conducted under the ISI program employ techniques, such as radiography and ultrasonic examination, capable of detecting pipe cracks at the incipient stage of development, well before they could be detected by visual observation with the unaided eye. The ISI program schedule is established such that all reactor coolant system piping is inspected within a ten year interval. The ten year interval is then divided into three inspection periods, with inspections conducted yearly within each period, usually during an annual refueling outage. Development and implementation of an ISI program, as well as reporting the results therefrom are a condition of the VY license to operate. Implementation of the ISI program at VY is routinely inspected by the NRC's Office of Inspection and Enforcement, Region I. The inspections include a thorough review of the ISI program and procedures, witnessing of a portion of the ISI work in progress, verification of compliance with program requirements and review of program inspection results. The latest series of NRC inspections of the VY ISI program started in September, 1980 (see NRC Region I Inspection Reports 50-271/80-16 and 50-271/80-20).

The ISI program inspections conducted by VY during the 1980 refueling outage constituted the first inspection of the third period in the first ten year interval, as prescribed by Section XI of the Code and Section 50.55a of the Commission's regulations. During this inspection, VY personnel identified cracks in several welds located in a 60 foot section of the RWCU piping inside the drywell. The initial inspection

findings were reported to the NRC in accordance with licensee requirements (see VY licensee event report, LER 50-271/80-37). Continued inspection of the subject piping over a two week period ultimately revealed six welds with cracks, out of 17 welds inspected. The cracks were located in an area called the heat affected zone of the weld, which is at the weld to pipe metal interface. Heat affected zones of welds have historically (industry-wide) been susceptible to cracking due to a number of factors, including pipe material content, induced stresses, and sensitization of the metal during welding. An additional, seventh crack was found on the surface of a "sweepolet" (a piping component that provides a transition point from the 4 inch RWCU pipe to a 20 inch pipe). This seventh crack was located in a high stress area of the sweepolet.

As a result of the inspection findings and due to the extensive number of defects identified, VY plant management decided to replace all RWCU system piping inside the drywell, as well as the drywell penetration and the piping up to the first isolation valve outside the drywell. This approach was taken instead of one involving identification and repair of each individual defect, and is considered conservative. A pipe replacement program was developed and implemented by VY personnel. The pipe replacement program became the most time limiting work item in comparison with all other outage maintenance work and ultimately extended the length of the recent outage beyond the scheduled completion date.

NRC Region I ISI Specialists were onsite for the routine inspection of the ISI program when the RWCU system cracks were first identified by the licensee. (Had the Regional inspectors not been onsite, a special inspection would have been conducted as a result of the finding of cracks in the RWCU system). In addition to completing a review of the routine program, the Regional inspectors closely followed developments in the RWCU crack problem. The review included: independent evaluation of weld radiographs, review of the bases for additional weld inspections once the initial defects were found, and review of the piping replacement program, including procedures and techniques used, quality controls applied, and inspection of activities in progress. Inspection of the area by Regional Specialists was conducted over four separate special inspection trips of one week each during the period from September 29 to November 21, 1980. Within the scope of the areas reviewed, no noncompliances or deviations from industry codes or NRC regulations were identified. It should also be noted that VY

management developed and maintained the initiative in selecting the proper alternatives for corrective actions throughout the development of the RWCU crack problem.

NRC Staff compared the VY ISI findings to the criteria established in NUREG-0313, Rev. 1, *Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping,* dated October, 1979. NUREG-0313 summarizes the NRC Staff findings and conclusions regarding the occurrence of intergrannular stress corrosion cracking (IGSCC) in BWR piping systems, and presents methods acceptable to the Staff for repair of pipe cracks. Upon comparison with the NUREG-0313 criteria, the staff considers the most likely cause of the VY RWCU system pipe cracks to be IGSCC, in that: (1) the factors necessary to cause IGSCC were present in the RWCU piping at VY, and (2) previous industry-wide history of IGSCC in RWCU systems has caused the RWCU pipes to be classified as "service sensitive" lines. Final confirmation of the pipe crack mechanism will be obtained once the metallurgical analysis results from samples of the affected welds are available. The licensee will report the analysis results to the NRC Staff for review. In accordance with NUREG-0313, one repair plan acceptable to the Staff consists of replacing existing service-sensitive piping with corrosion-resistant piping whose material constituents are controlled within specified limits. VY management informed the NRC staff in a letter dated November 10, 1980 that the RWCU repair would be completed with material conforming to NUREG-0313, Rev. 1. This formal commitment was acknowledged in an NRC letter to VY dated December 12, 1980.

As a result of the completion of RWCU system repairs by VY in the manner described above, the RWCU system piping is expected to be in conformance with applicable regulatory requirements and industry codes. Actual repairs were complete as of 12/17/80. Satisfactory completion of VY actions in this area is being verified by the NRC inspection staff as part of the routine inspection program.

In sum, the problem of cracks in Vermont Yankee's RWCU piping system raised by Ms. Callan and Mr. Richardson has already been addressed by the licensee and the NRC. The piping system has been replaced by the licensee and will be reviewed by NRC inspectors. In addition, the RWCU piping system has been, and will continue to be, subject to continuous monitoring and inspection for leaks. Finally, even in the event of a complete break in the RWCU system piping, the ECCS would afford adequate cooling of the reactor core.

In view of the preceding, I conclude that additional "full and public investigation" into the problem of cracks and corrosion in Vermont Yankee's RWCU piping system is not warranted. In addition, Vermont Yankee's actions with respect to the RWCU system are in conformance with its license and thus, in the absence of some safety issue, a basis does not exist for preventing the facility from resuming operation.

2. Vermont Yankee 1980 Refueling Outage Turbine Generator Activities

Ms. Callan and Mr. Richardson have also alleged that Vermont Yankee's turbine generator shows signs of significant wear and will require repairs.

The main turbine generator system converts the energy of the steam produced by the reactor into electrical energy. The turbine generator is not a nuclear safety related system, and it functions neither to provide cooling for the reactor core nor to mitigate the consequences of any of the accidents considered in the facility design. During the 1980 refueling outage, Vermont Yankee performed inspection of selected portions of the turbine generator unit in accordance with routinely scheduled maintenance and in order to establish a data base on turbine condition. In this regard, Information Notice (IN) 79-37, *Cracking in Low Pressure Turbine Discs* (12/31/79), was forwarded to Vermont Yankee providing notification of a possibly significant matter in that embedded cracking in keyways and disc base areas had been observed in Low Pressure (LP) turbines manufactured by Westinghouse Company. Although Vermont Yankee utilizes a turbine generator unit manufactured by General Electric, (GE) the NRC staff notified all holders of facility operating licenses and requested consideration of the identified problem. Vermont Yankee currently maintains a turbine generator inspection and maintenance schedule such that each component is serviced at intervals of 3 to 5 years. Based on the manufacturer's (GE) recommendation and the concerns expressed in IN 79-37, an accelerated inspection effort was scheduled for the 1980 refueling outage.

As part of the turbine generator unit inspection, the following component areas were addressed:

Journal bearing inspection - The journal bearings support the weight of the turbine shaft and provide a bearing surface for shaft rotation. The bearings consist of a metal ring lubricated by the turbine generator lube oil system. The bearings are custom fitted to the shaft since the

shaft actually "bows" due to its weight and does not in all cases provide a flat bearing surface. Inspection of No. 6 bearing by the licensee revealed uneven wear. The bearing was sent to a contractor for machining to provide for proper rotor seating. The bearing was subsequently reinstalled.

Turbine erosion (water wear)

As the steam supplied to a turbine progresses through the turbine, the thermal energy content of the steam is transferred to the turbine as rotational energy and increasing fractions of the steam condense to water. The water initially appears as droplets entrained in the fast moving steam, and containing enough kinetic energy to have an erosion effect as they impact metal surfaces. This is a well known condition, which all turbine manufacturers and operators recognize. Turbines are designed and built with provisions to drain off the water collected. Nonetheless, water erosion does, and will continue to occur, and monitoring it is a regular maintenance item. One frequent location for water wear is the keyways of low pressure turbine wheels, with the erosion track continuing radially across the wheel hub. Indications of this condition were found on the 2-6 wheels of the A-low pressure turbine, and on 2-8 wheels of the B-low pressure turbine. The extent and depth of the erosion was measured by ultrasonic techniques, and analysis was performed to predict the future growth of these areas. An analysis considered the present size, the rate of attack, and the stream field in the area. From this, GE forecast conditions six years of operation later. Using conservative (rapid) growth rates and comparing these 6 year later depths with the "critical" depth at which concern would arise for rapid failure, GE predicted that the erosion at the most critical location would be about 37% of allowable depth.

GE recommended that the licensee conduct another inspection of the water wear in the turbine wheel keyways in 6 years. Vermont Yankee now plans to inspect the high pressure turbine in 1982, one low pressure turbine in 1983, and other low pressure turbine in 1984.

Other areas where water or steam erosion were found included steam headers, crossover piping and the low pressure turbine innercasing. Where the depth of erosion caused the minimum wall thickness to be approached, wall thickness was restored by weld metal buildup. This is a well established and accepted method of repair. Vermont Yankee decided that future erosion could be better controlled by a change in the material of the crossover piping from a copper bearing material to a nickel bearing material. Two of the pipes were replaced during the

current outage, and the other two are scheduled for replacement during the 1981 outage.

Inspection of turbine discs and blading revealed a cracked blade in the eighth stage of the A-low pressure turbine. The blade was removed, and a blade on the opposite side was shifted to maintain symmetry and balance. The licensee concluded that this crack represented an isolated, random occurrence and was not a precursor of other failures.

In summary, I find that Vermont Yankee has responded properly and conservatively to concerns expressed by the NRC in IN 79-37, and to the results of other planned turbine inspections. Therefore I find that there is no basis for conducting an extensive public investigation and hearing on the subject of turbine integrity.

3. Anchor Bolt Replacement

Ms. Callan and Mr. Richardson's letter also alleged that a large number of bolts in the facility's piping support system had recently been replaced and that such replacement raised serious questions concerning the safe operation of the plant.

While performing routine inservice inspections at the Millstone Unit 1 power plant in Waterford, Connecticut during the Spring 1978 refueling outage, the plant personnel identified structural failures of piping supports installed on safety related systems. Subsequent licensee inspections of undamaged supports showed a large percentage of concrete anchor bolts associated with the supports that were not tightened properly. These findings were reported to the NRC. Subsequently, the licensee of the Shoreham power plant on Long Island, New York reported deficiencies it had identified concerning the design of base plates used in piping system supports. The deficiencies involved rigid plate assumptions used in the design of anchor bolt installations. Further NRC review at Architect Engineering (A/E) firms (the organizations principally involved in anchor bolt design and installation) showed a wide range of design practices and installation procedures used in concrete anchor bolt installations. The NRC determined that current trends in the industry are to employ more rigorous controls and bolt installation verifications than had been applied previously.

In recognition of the safety significance and potential generic applicability of this information, the NRC issued IE Bulletin 79-02 on March 8, 1979 to establish the NRC's findings in the area and require that

certain actions be taken to determine the status of anchor bolt installations at all power plants. As further information was received by the NRC from licensee responses to the Bulletin, supplements to Bulletin 79-02 were issued (Revision 1 on June 21, 1979 and Revision 2 on November 8, 1979) to clarify certain requirements and to direct that additional actions be taken. The major work effort associated with Bulletin 79-02 developed along two paths:

(1) test and qualify or replace anchor bolts installed on plant safety related systems to assure original design requirements were met; and
(2) re-evaluate certain assumptions used in the seismic analyses to define piping and support system design loads.

Issues related to the seismic design analyses developed during the 1978-1979 period and led to the issuance of further Bulletins by the NRC (IE Bulletins 79-04, 79-07, and 79-14). NRC staff efforts were consolidated to review the anchor bolt and seismic issues together in 1979.

Vermont Yankee developed a testing and analysis program to address NRC Bulletin requirements on seismic and anchor bolt issues. The program to verify the adequacy of installed anchor bolts began in mid-1979. After identifying the types and locations of supports on all seismic piping systems, defining suitable design acceptance criteria, and developing test and inspection procedures, testing of installed anchor bolts at Vermont Yankee began in July, 1979. Testing consisted of torquing or load tensioning the anchor bolts to specified limits to determine whether the bolts could maintain prescribed loads. The installation of each anchor bolt was also inspected and compared to stringently defined installation criteria that included depth of embedments, location and length, dimensions, thread engagement and various gap distances and clearances. Testing of bolts began in areas in the plant readily accessible during normal plant operations and continued for all plant areas during the 1979 refueling outage.

Bolt testing completed by mid-August 1979 revealed instances of failure to meet testing and inspection criteria at a rate in excess of pre-established limits. A small percentage (5%) of the bolts tested were found loose, but could be tensioned to above design loads. However, it was noted that for the "as found" installation, a larger percentage of the bolts failed one or more of the other inspection criteria. Inspection of the support installations continued, but testing was stopped. Instead, a program was begun to replace all slide type anchor bolts with bolts of

an improved design and to correct installation deficiencies. By October, 1979 the scope of the replacement program level had been refined to include 450 pipe supports containing 2500 anchor bolts. By the end of the 1979 refueling outage, one half of the total number of supports had been modified. This encompassed all supports normally inaccessible during plant operations. All anchor bolts were replaced and bolt installations brought into total conformance with design criteria by the Spring of 1980.

The NRC staff closely followed licensee actions in this case through reports submitted by VY, meetings held with licensee staff and through NRC inspections performed as part of the routine inspection program. NRC inspectors reviewed the development of the initial test/inspection program, development of the bolt replacement program, activities of work in progress, and completed bolt installations. Any identified installation deficiencies that had the potential to impact adversely the operability of a piping system were corrected expeditiously. Instances of this type were specifically reported to the NRC by the submission of licensee event reports. In no case did a loss of system operability occur.

NRC inspection of the licensee's bolt inspection and test results identified only a few instances (less than 6) in which a bolt head was tack welded to a base plate with the bolt shank cut off or missing. Deficiencies of this type involved one bolt out of several installed in any given size support. All other deficiencies involved deviations from bolt installation criteria or deviation from a specification. Some deficiencies also involved broken or damaged bolts. Factors contributing to these deficiencies could have included (but are not limited to): inadequate quality controls applied during original support/bolt installation; less stringent criteria defined for initial installation when compared to the criteria in current industry standards; difficulty in performing the initial installation due to physical constraints (such as support location and/or limited accessibility); worker carelessness; and insufficient design.

NRC review of the completed anchor bolt installations, as well as the seismic analysis program, is ongoing through the routine inspection program.

The company directly involved with the initial anchor bolt installation was the Hartwell Company, under contract to Ebasco, the Architect/Engineer (A/E) for initial plant construction. Under contract no. NY-706116. Hartwell was responsible for "furnishing material, fabri-

cating and erecting the complete power plant piping system, including related hangers and supports." Ms. Callan and Mr. Richardson raised concerns questioning the adequacy of other work conducted by this company. These concerns are not warranted for the following reasons:

NRC inspections during the plant construction period, while done under a sampling program, showed with a high degree of confidence that no major breakdown in the construction QA/QC area occurred. In particular, no major QA/QC problems were identified in regard to reactor coolant pressure boundary and/or safety system piping installations.

Tests conducted under the Technical Specification surveillance program on plant safety systems have demonstrated system operability (and hence piping integrity) under both normal operating and transient conditions.

Tests conducted under the Inservice Inspection program have not identified deficiencies that would be attributable to improper construction QA/QC.

In summary, although deficient installations have been identified in the use of pipe support anchor bolts, the deficiencies have been rectified. Past NRC inspection findings in the area of piping and support installations do not support contentions of generic fraudulent installations practices and concerns of present operation in a degraded safety condition. Consequently, I have determined that further investigation into the bolt replacement problem is not warranted and that there is insufficient cause to prevent the VY plant from resuming power operation.

4. Torus Modifications

Ms. Callan and Mr. Richardson allege that there have been repeated failures in attempts to repair Vermont Yankee's Dry Well Torus emergency containment system and that the system is again undergoing repair. Ms. Callan and Mr. Richardson contend that these problems increase the danger of a life-threatening accident at the facility since the torus system was designed to serve as a back-up to the plant's primary cooling system in the event of a loss of coolant accident.

Vermont Yankee utilizes a Mark I or "drywell-torus" primary containment design. The Mark I design is a pressure suppression type

and is made up of a drywell in the shape of an inverted light bulb connected via vent pipes to a torus shaped suppression pool. The objectives of the primary containment system are, in the event of a design basis loss-of coolant accident (LOCA), to prevent the release of fission products to the environment in excess of the federal limits specified in 10 CFR Part 100, to provide pressure suppression, and to provide a source of water to certain Emergency Core Cooling Systems (ECCS).

The suppression chamber is a steel pressure vessel in the shape of a torus, located below and encircling the drywell. The suppression chamber is held on supports which transmit vertical and seismic loading to the reinforced concrete foundation slab of the reactor building. Eight circular vent pipes connect the drywell and the suppression chamber. The pressure suppression chamber serves not only as a heat sink for blowdown from the drywell after an accident but also as a source of water or heat sink for the following ECCS functions:

1. Core spray injection and testing.
2. Low pressure coolant injection mode of residual heat removal (RHR) and testing.
3. High pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) pumps alternate source of water.
4. Heat sink for steam blowdown from safety/relief valves.
5. Heat sink for HPCI and RCIC turbine exhaust steam.

The first generation of General Electric (GE) BWR nuclear steam supply systems are housed in a Mark I containment system. A total of 25 BWR facilities with the Mark I containment system have been or are being built in the United States; of these, 22 are licensed for power operation. The original design of the Mark I containment system considered postulated accident loads previously associated with containment design. Since the establishment of the original design criteria, additional loading conditions have been identified which arise in the functioning of the pressure suppression concept utilized in the Mark I containment system design. These additional loads result from the dynamic effects of drywell air and steam being rapidly forced into the suppression pool (torus) during a postulated LOCA and from suppression pool response to safety/relief valve (SRV) operation generally associated with plant transient operating conditions. Because these loads had not been considered in the original design of the Mark

I containment, the NRC determined that a detailed reevaluation of the Mark I containment system was required.

In February and April, 1975 the NRC transmitted letters to all utilities owning BWR facilities with Mark I containment system designs requesting the owners to quantify the hydrodynamic loads and to assess the effect of these loads on the containment structure. The utilities formed a Mark I owners group and GE was designated as the Group's lead technical organization. The objectives of the Group were to determine the significance of the loads and identify courses of action needed to resolve any outstanding safety concerns. The task was divided into two programs, the short-term progrm (STP) and long-term program (LTP).

The objectives of the STP were to verify that each of the Mark I containment systems would maintain its integrity and functional capability when subjected to a postulated design basis LOCA, and to verify that licensed Mark I BWR facilities could continue to operate safely without endangering the health and safety of the public, while a comprehensive LTP was conducted. The STP acceptance criterion (a safety-to-failure factor of 2) was used to justify continued operation of each plant. The NRC concluded in NUREG-0408 that a sufficient margin of safety had been demonstrated to assure the functional performance of the containment and, therefore, no undue risk to the health and safety of the public existed at Vermont Yankee. Subsequently, the staff granted the operating Mark I facilities exemptions relative to the structural factor of saftey requirements of 10 CFR 50.55(a). These exemptions were granted for an interim period while the comprehensive LTP was being conducted.

The licensee committed to a long term program to upgrade the Mark I torus from a safety factor of 2 to a factor of 4. At no time did the licensee operate without the full benefit of this system.

In July of 1978, Vermont Yankee commenced modification of the torus support column to torus shell connections as part of the LTP to strengthen the connections. Since the modifications were being performed while the plant was in operation, the attachment of gussets to the outer shell required welding in areas where the torus shell had water on the opposite side. A special weld procedure was developed and qualified. As a precaution, nondestructive examinations (NDE) were performed during welding of the pads. NDE revealed surface cracks in the base metal after the gussets had been partially or

completely welded to the pads. The licensee developed a plan of action to shutdown the plant, repair the areas of concern and conduct a pneumatic test of the torus prior to returning to power.

During the October 1979 refueling outage the following work was performed in conjunction with the LTP;

. 20 depressions resulting from indications in the torus wall that had been ground out were repaired.
. 64 weld metal pads were welded to the torus shell.
. 44 gussets were welded to the pads.

During the 1980 fall refueling outage the following work was accomplished as part of the "Mark I owners group LTP":

Addition of support saddles under the torus at each ring girder. Saddles were welded to the torus shell and anchored to the basemat. Saddles are required in order to stiffen the torus shell assembly and reduce its response to dynamic condensation loads. The saddles also transmit torus uplift loads (produced by pool swell) to the basemat.

Replacement of safety relief valve ramsheads with T-Quenchers and addition of T-Quencher supports. The T-Quencher is a perforated pipe connected to the end of the safety valve discharge torus bay and welded to two adjacent ring girder.
Installation of Vent Header Deflectors and Supports located below the vent header. They are designed to reduce the load on the vent header produced by pool swell uplift.
Installation of Downcomer Ties. Sections of pipe connected to clamps at either end were welded to the downcomers. This design prevents the downcomers from deflecting radially.

Modification of RHR Return Line Reroute and Support in Torus. This modification results in the piping running closer to the ring girder where it is supported. An elbow was added to promote better thermal mixing of the RHR return water with the pool.

Replacement of 2" Safety Relief Valve Dishcarge Line (SRVDL) Vacuum Breakers with 10" vacuum breakers. These allow equalizing of the SRVDL-Drywell pressure without the occurrence of a high water leg in the line.

Replacement of wetwell-drywell vacuum breaker cast aluminum disc assembly with a wrought aluminum disc assembly. This mitigates damage to the disc during the chugging phase of a steam blowdown.

Reinforcement of 4" torus spray header support. A plate was welded to the existing support to reduce the displacement of the pipe caused by pool swell uplift loads.

Modifications to Submerged Piping (HPCI and RCIC condensate returns, RCIC Turbine Exhaust) to reduce impact and drag loads.

Modifications to torus catwalk to facilitate removal during power operations.

The above modifications have been periodically monitored by the NRC Resident and Region based inspectors. The licensee has completed the LTP modifications that should restore the original Torus safety-to-failure factor. The licensee has committed to submit a plant specific analysis according to criteria provided in NUREG-0661. This analysis will either confirm that the design, with LTP modifications in place, has the intended margins of safety, or it will identify any additional plant modifications that are necessary to restore intended margins of safety in the containment design. It is re-emphasized that at no time did the NRC authorize Vermont Yankee operation without the full benefit of the Mark I containment system.

In summary, I find that the continuing NRC and industry review and analysis of the various safety features of power reactors disclosed that certain design criteria for the BWR Mark I containment system did not contain the degree of conservatism originally expected. I further find that GE, the containment system designer, and the NRC licensees with Mark I containment systems, working together have developed on a generic basis corrective actions which, when implemented, will restore the degree of conservatism originally expected. Vermont Yankee has during the recent plant outage completed those corrections applicable to its facility. Further, I find that the licensee is committed to submit, on a timely basis, a plant specific analysis which will confirm the adequacy of modifications made to date, or describe such supplementary modifications as may be required.

Therefore, I find that there is no basis for conducting an extensive public investigation and hearing on the subject of containment system integrity.

5. Inerting of Containment.

Ms. Callan and Mr. Richardson also allege that Vermont Yankee is the only facility in the country that does not have an installed inerting system. Ms. Callan and Mr. Richardson contend that "this safety unit would forestall a hydrogen explosion that would breach the reactor containment in the event of an accident."

Inerting is not required for the Vermont Yankee plant by a ruling of the Appeal Board [ALAB-229, September 18, 1974; 8 AEC 425, 428 (1974)]. On October 2, 1980, the Commission published in the Federal Register a proposed rule entitled "Interim Requirements Related to Hydrogen Control and Certain Degraded Core Considerations" (45 FR 65466). This rule would require the Vermont Yankee plant to inert sometime after rulemaking is completed. The inerting would be required as an interim measure while long term rulemaking on degraded or melted cores proceeds. The proposed rule states that:

"While the decrease in residual risk due to inerting these containments is small, as determined by probabilistic analyses, (a) there are no significant countervailing safety disincentives; (b) the cost of inerting is small; and (c) there has been substantial satisfactory experience with inerting Mark I containments."

Requiring Vermont Yankee to inert immediately would be very costly because it would substantially extend the present outage in order to add equipment not included in the present design. Therefore the proposed rule does not call for immediate inerting.

The NRC regards the operation of the Vermont Yankee plant with deinerted containment as acceptable pending completion of the rulemaking process. Consequently, an investigation into the inerting issue is not warranted and no basis exists that would require preventing the Vermont Yankee facility from resuming power operation.

II

Based on the foregoing, I have determined that conduct of the requested additional investigation at Vermont Yankee is not warranted and would not serve to enhance safety based on the high level of NRC inspection effort that has already been expended over several years on the issues raised by Ms. Callan and Mr. Richardson. In addition, because there were no unexpected problems identified during the current outage at Vermont

Yankee, because the licensee was responsibly addressing previously identified NRC concerns, because the licensee's corrective action toward resolution of these concerns is acceptable to the NRC, and because there is reasonable assurance that Vermont Yankee can continue to operate without undue risk to the public health and safety, I have determined that no basis exists that would require the facility to remain shutdown. Consequently, I have denied Ms. Callan and Mr. Richardson's requests for a full and public investigation into the safe operation of the Vermont Yankee facility and for continued shutdown of the facility until the investigation is complete.

Ms. Callan and Mr. Richardson have also requested a hearing on the findings of an investigation into the issues they have raised. Under 10 CFR 2.206, Ms. Callan and Mr. Richardson are not entitled to a hearing as a matter of right. I would view their request for a hearing as one that asks the Commission to exercise its authority to grant a discretionary hearing. Because I have denied Ms. Callan and Mr. Richardson's request for an investigation into the issues they raise, I would not recommend that the Commission grant a discretionary hearing to Ms. Callan and Mr. Richardson.

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 in the local public document room at Brooks Memorial Library, 224 Main Street, Brattleboro, Vermont, 05321.

Additionally, a copy of this decision will be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR Section 2.206(c) of the Commission's regulations. As provided in 10 CFR 2.206(c), this decision will constitute final action of the Commission twenty-five (25) days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

R.C. DeYoung
Acting Director
Office of Inspection and
Enforcement

Dated at Bethesda, Maryland
this 29th day of December 1980.

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