

NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

January 1, 1980 — June 30, 1980

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PREFACE

This is the eleventh volume of issuances (1 - 953) 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 January 1, 1980 to June 30, 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

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In the Matter of

Docket No. 27-39

**NUCLEAR ENGINEERING
COMPANY, INC.**

(Sheffield, Illinois
Low-Level Radioactive
Waste Disposal Site)

January 22, 1980

The Commission denies licensee's motion for reconsideration and clarification of (1) its prior Order sustaining the immediate effectiveness of a show-cause order issued by the Director, Nuclear Materials Safety and Safeguards, and (2) its Notice of Hearing directing the Licensing Board to consider and decide whether the licensee could unilaterally terminate its license.

RULES OF PRACTICE: DUE PROCESS

Where an independent Licensing Board will make findings after a full adversary proceeding before it, an unsupported claim of "structural" bias, *i.e.*, that the Board will consider itself bound to follow the Commission's "apparent conclusions" expressed in a preliminary opinion not addressed to the merits, does not raise a cognizable due process issue.

DISQUALIFICATION STANDARDS

The Commission's adjudication of preliminary issues in a proceeding does not disqualify it from later considering an appeal on the merits of that proceeding. *NLRB v. Donnelly Garment Co.*, 330 U.S. 219, 236-37 (1977). This principle applies even if the decision could be construed as implying that the Commission reached tentative views on issues yet to be resolved. *FTC v. Cement Institute*, 333 U.S. 683, 701 (1948).

MEMORANDUM AND ORDER

This proceeding involves the low-level radioactive waste disposal facility operated by Nuclear Engineering Company, Inc. (NECO) near Sheffield, Illinois. On March 20, 1979, the Director, Nuclear Materials Safety and Safeguards (NMSS), issued an immediately effective Order to Show-Cause requiring NECO to resume its responsibilities and obligations under the license for the Sheffield site. In response, on March 22, 1979, NECO moved the Commission, as the only tribunal with jurisdiction to consider the Director's Order, for emergency action to stay the immediate effectiveness of that Order. Subsequently, on June 6, 1979, we issued (1) a Memorandum and Order (Order) which sustained the immediate effectiveness of the Director's Order; and (2) a Notice of Hearing (Notice) which directed the Atomic Safety and Licensing Board (Board) originally convened to consider NECO's license renewal application to consider and decide whether NECO could unilaterally terminate its license for activities at Sheffield without affirmative action by the Commission. The Notice and Order fully discuss the events leading to their issuance, and except as is necessary to our discussion herein, we will not recapitulate what is said there.

On June 18, 1979, NECO moved for reconsideration and clarification of the Commission's Order and Notice. NECO contends that the Order and Notice appear to prejudice the issues now pending before the Board. In particular NECO alleges that our decision appears to decide or significantly color the issue of NRC jurisdiction over NECO. NECO also contends that the Commission's Order, as well as the Director's Order to Show-Cause, are factually in error because they fail to identify any specific threat to the public health and safety.

The NRC staff and the State of Illinois both oppose NECO's motion. The NRC staff contends that our Order decided only those issues necessary for ruling on NECO's motion for emergency action filed on March 22, 1979. In staff's view, because NECO sought our decision on the immediate effectiveness of the Director's Order, NECO cannot be heard now to complain that the Order will influence the remainder of this proceeding. Staff also contends that the Commission had adequate facts on which to find a danger to public health and safety. The State of Illinois presents essentially the same arguments.

Subsequently, on July 19, 1979, NECO filed a supplement to its motion for reconsideration to present a staff memorandum released by the NRC pursuant to NECO's request under the Freedom of Information Act. In that memorandum, Mr. L.B. Higginbotham of the Office of Inspection and Enforcement (IE) recommended against the issuance of a proposed show-

cause order which would have supplemented the Director's Order by directing NECO to show-cause why it should not pump radioactive water from certain trenches at the Sheffield site. This proposed order was never issued. Mr. Higginbotham's opinion was based on his belief that (1) the Order was unenforceable, (2) the health and safety concerns regarding the radioactive water were uncertain, (3) the Order did not require action not already included in the Director's Order of March 20, and (4) NMSS, as the licensing office, should order the action. NECO contends that Mr. Higginbotham's opinion regarding the radioactive water demonstrates that there was no immediate threat to public health and safety which would justify the Director's immediately effective Order of March 20. Consequently, NECO believes that we should rescind that Order.

Staff contends that NECO's supplemental motion and the Higginbotham memorandum do not provide a basis for reconsideration of our Order and Notice. Staff argues that the memorandum presents only one NRC employee's thoughts essentially on the legally proper bases for a show-cause order which was intended to supplement the Director's Order. Moreover, staff notes that in our Order of June 6, 1979, we held as a matter of law that potential threats to public health and safety could provide a basis for an immediately effective show-cause order. Finally, staff asserts that the Director's Order was supported by the facts.

On October 19, 1979, NECO filed a second supplement to its motion for reconsideration to present a staff memorandum regarding a request by the State of Kansas for NRC assistance with a licensing review of a proposed low-level waste repository. NECO contends that this memorandum demonstrates that the staff considers properly buried waste to be no longer possessed and that a licensee would discharge any responsibility for decommissioning a waste facility by paying into a perpetual care fund. NECO claims that it relied on this policy and, thus, the Commission is now estopped from asserting that NECO possesses the radioactive waste buried at Sheffield. Accordingly, NECO believes that the Commission must rescind the Director's Order to Show-Cause, because it was premised on NECO's possession of the waste buried at Sheffield, and that the proceeding must be dismissed.

Staff contends that NECO's additional submission does not provide a legally sufficient basis for Commission reconsideration of the Order of June 6, 1979, or a basis for concluding that the Commission is estopped from conducting further proceedings regarding the Sheffield site. In staff's view, the memorandum is a statement of preliminary staff thoughts on proposed deep salt mine burial of low-level waste, but does not purport to set out Commission policy on the issue of possession. Moreover, Staff believes that the document does not support NECO's contention that a licensee has no further responsibility for material once it is placed in a disposal facility. Finally, staff argues that there can be no estoppel against the United States in

this situation.

At the outset, we note that NECO requested the Commission to consider the immediate effectiveness of the Director's Order to Show-Cause and to redefine the issues pending before the Licensing Board. The Commission followed its usual procedures for considering motions before it and the parties extensively briefed the issue of immediate effectiveness. 10 CFR 2.730. In view of NECO's request, the parties' responses, and the relation of immediate effectiveness to health and safety, we decided that issue. Under these circumstances, NECO cannot now be heard to complain that the Commission, following the requirements of the Administrative Procedure Act and its own regulations, issued a reasoned decision on the very issue NECO presented to us.

NECO acknowledges that our Order explicitly disclaimed any intention to reach a decision on the merits of the issues pending before the Licensing Board, and that the Order is limited to the immediate effectiveness of the Director's Order. Nonetheless, NECO now contends that the Board will consider itself "bound to follow the Commission's *apparent* conclusions." (Emphasis supplied) (Pet. Mot. at 7.) NECO offers no reasons to explain why the Board will so selectively read our opinion. This unsupported and apparently unique claim of "structural" bias does not appear to us to raise a cognizable due process issue, or to otherwise support the allegation that our decision prejudged the issues before the Board. Thus, we find no reason to clarify our Order of June 6, 1979.

It is well-established that our adjudication of preliminary issues in a proceeding does not disqualify us from later considering an appeal on the merits of that proceeding. *NLRB v. Donnelly Garment Co.*, 330 U.S. 219, 236-237 (1977). This principle applies even if our decision could be construed as implying that we reached tentative views on the issues yet to be resolved. *FTC v. Cement Institute*, 333 U.S. 683, 701 (1948). The expression of such tentative views in the course of our exercise of administrative responsibilities does not overcome the presumption that administrators are assumed to be people of conscience and intellectual discipline, capable of judging a particular controversy fairly on its merits. *Cf. Withrow v. Larkin*, 421 U.S. 35, 47 (1975). Thus, the Commission is not disqualified by virtue of its preliminary opinion from subsequently reconsidering the same issues on the fuller record which would result from an adversary proceeding.

NECO would find prejudgment in the attenuated situation in which an independent Licensing Board will make findings after a full adversary proceeding before it. NECO's contention will not pass muster. First, if, as NECO contends, the Board is bound to our apparent conclusions, it is certainly bound to our explicit disclaimer that our opinion was not addressed to the merits of the issues pending before it. Second, even if the apparent conclusions of our opinion are as claimed by NECO, we must assume that the

Board members are also intellectually disciplined and capable of judging the issues fairly on the basis of the full record they will develop. NECO has made no showing that the Board is not "capable of judging a particular controversy fairly on the basis of its own circumstances." *United States v. Morgan*, 313 U.S. 409, 421 (1941). *Cf.*, *Porter County Chapter of the Izaak Walton League of America, Inc. v. Nuclear Regulatory Commission*, Nos. 78-1556, 78-1559, 78-1560 and 78-1561 (D.C. Cir. decided September 6, 1979). Slip op. at 16. Third, NECO's arguments are based on its view of the Commission's *apparent* conclusions. There is no need to elaborate on the proposition that NECO's perception of our conclusions will not necessarily be shared by the Licensing Board. The other pleadings filed with us in this proceeding do not perceive such "apparent" conclusions. Finally, NECO's contention is clearly premature because the Licensing Board has not, as yet, issued an opinion. Thus, we must dismiss as unfounded speculation NECO's argument that our Order of June 6 will improperly affect the Board's resolution of the issues pending before it.

Lest NECO or the Licensing Board labor under any misconception about this matter, we take this occasion to affirm that our June 6 Memorandum and Order addressed only NECO's request to take emergency action to rescind a Director's Order and to stay the immediate effectiveness of that Order and was issued for that purpose only. Based on information available at that preliminary state of the proceeding, we upheld the immediate effectiveness of the Director's Order, and declined to take the course which NECO requested. We found that the Director's Order should remain in effect "at least until the issues have been resolved by a Licensing Board." Complementing this holding, we stated that we were making no determination of the merits of the issues in the Show-Cause proceeding. In light of all this, it would be futile for the parties or the Licensing Board to scrutinize our June 6 Memorandum and Order in an attempt to discover a determination or significant "coloration" of those issues.

NECO has also moved us to reconsider our Order of June 6. NECO's arguments in support of reconsideration are similar to arguments it previously presented. Moreover, NECO's motion presents no basis for our reconsideration of arguments made to and considered by us in reaching our initial decision. Thus, there is nothing in that motion which would warrant our reconsideration of the Order of June 6. *Wisconsin Electric Power Company*, (Point Beach Nuclear Plant, Unit No. 2) 4 AEC 678 (1971), *Pacific Gas and Electric Company*, (Diablo Canyon Nuclear Power Plant; Unit No. 2), ALAB-30, 4 AEC 685 (1971).

NECO's first supplemental motion and the Higginbotham memorandum also do not provide an adequate basis for reconsideration. NECO has not demonstrated that the particular matter discussed in the memorandum detracts from the circumstances addressed by the Director's Show-Cause

Order. That Order was concerned with the totality of conditions at the Sheffield site, not just the pumping of water from certain trenches. Moreover, our investigation into the Director's exercise of discretion focused on the information known by him or which could have been obtained by him prior to his decision. Clearly, the Director could not have abused his discretion by failing to consider an opinion which became available only after he made his decision. Thus, we do not find that Mr. Higginbotham's personal views on a later proposed order require us to rescind the Director's Order of March 20.

NECO's second supplement and the staff memorandum on which it is based also do not affect the result we reach today. Our Order of June 6, 1979, explicitly noted that we were not passing on NECO's legal theories. The question of whether NECO possesses radioactive material buried at Sheffield is just such a merits issue. As such, it is now pending before the Licensing Board. Accordingly, NECO is free to present its evidence and arguments to the Licensing Board at the proper time.

For all of the above reasons, NECO's motion of June 18, 1979, and the supplements to that motion, dated July 19, 1979, and October 19, 1979 are denied.

Is is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 22nd day of January, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

HOUSTON LIGHTING AND
POWER COMPANY

Docket No. 50-466

(Allens Creek Nuclear
Generating Station, Unit 1)

January 10, 1980

The Appeal Board affirms the Licensing Board's denial of the intervention petitions of four individuals.

RULES OF PRACTICE: INTERVENTION

Any individual desirous of obtaining entry into an NRC licensing proceeding on the strength of a notice published in the *Federal Register* by the agency has the obligation to inquire into the content of the notice and to comply with its requirements.

RULES OF PRACTICE: INTERVENTION

Persons whose residence is in sufficiently close proximity to a proposed nuclear facility to give them an interest in that facility's licensing proceeding are duty-bound to take at least some steps to obtain such readily available information as might be required to protect their interest in a reasonably timely fashion.

Messrs. Jack R. Newman, Robert H. Culp and David B. Raskin, Washington, D.C., and **Messrs. J. Gregory Copeland, C. Thomas Biddle, Jr., and Charles G. Thrash, Jr.**, Houston, Texas, for the applicant, Houston Lighting and Power Company.

Mr. Stephen A Doggett, Rosenberg, Texas, for the appellants, **Kathryn Otto, Patricia L. Strellein and Donald D. Weaver**.

Mr. Eugene E. Mueller, Houston, Texas, appellant *pro se*.

Mr. Stephen M. Sohlnkl for the Nuclear Regulatory Commission staff.

DECISION

This construction permit proceeding involving (at its outset) Units 1 and 2 of the proposed Allens Creek Nuclear Generating Station was initiated by a notice of hearing issued in late 1973. In September 1975, the applicant advised the Licensing Board that construction of the facility had been deferred indefinitely. Almost two years later, in August 1977, the Board was informed that the applicant had decided to go forward (albeit with only one of the two units) and wished to have the then dormant licensing proceeding reactivated.

In light of this development, the Licensing Board published in May 1978 a "Notice of Intervention Procedures"¹ which, as amended in September 1978,² provided that new petitions for leave to intervene in the proceeding could be filed so long as they were founded on contentions "aris[ing] because of the changes in the proposed plans for the station and with respect to new evidence or information that had not been available prior to" December 9, 1975.³ This notice produced a substantial number of intervention petitions. Several of them were denied in February 1979 on the ground that they did not comply with the restrictions which had been imposed by the Board; *i.e.*, the contentions stated therein neither were based upon information that had become available subsequent to December 1975 nor had arisen from the proposed changes in plant design associated with the reduction of the facility from two units to one.

On appellate review, we held the restrictions invalid. ALAB-535, 9 NRC 377 (1979). See also ALAB-539, 9 NRC 422 (1979); ALAB-544, 9 NRC 630 (1979). This led the Licensing Board to issue a "Supplementary Notice of Intervention Procedures," 44 *Fed. Reg.* 35062 (June 18, 1979). In it, the Board authorized the filing of an intervention petition by any person who had not earlier filed such a petition "because of the restrictions on permissible conditions contained" in the 1978 notice, as amended.⁴ The Board went on to require that persons taking advantage of this authorization state that the restrictions were in fact the reason for the failure to have sought intervention in response to that notice.

On August 6, 1979, the Licensing Board entered an order in which it scheduled a special prehearing conference on October 15 for the purpose of considering the numerous intervention petitions filed pursuant to the supplementary notice. The order went on to direct that the petitioners file their contentions no later than September 14.

¹ 43 *Fed. Reg.* 23666 (May 31, 1978).

² 43 *Fed. Reg.* 40328 (September 11, 1978).

³ On that date, we had affirmed a partial initial decision which had been rendered by the Licensing Board earlier in 1975 on certain of the issues presented in the proceeding. See ALAB-301, 2 NRC 853.

⁴ Hereinafter, the "1978 notices."

Following the conference, at which the petitioners were given an opportunity to be heard,⁵ the Licensing Board entered an order on November 19, 1979 in which it granted some of the intervention petitions and denied others. Among the petitions denied were, *inter alia*, those filed by Eugene E. Mueller, Kathryn Otto, Patricia L. Streilein, and Donald D. Weaver. With respect to each of these petitioners, the Board ruled that, for one reason or another, there had been noncompliance with the terms of the supplemental notice or the August 6 order. Accordingly, the Board decreed, their papers would be treated as merely requests to make limited appearance statements.

Now before us are appeals by all four individuals from the denial of intervention.⁶ The appeals are opposed by both the applicant and the NRC staff.

A. The petitions of both Ms. Streilein and Mr. Weaver were devoid of any representation as to why they had failed to seek timely intervention in response to the notice and amended notice issued the prior year. We are told, however, that, for two independent reasons, the Licensing Board erred in denying the petitions on that ground: (1) the supplementary notice issued in June 1979 improperly had required petitioners to state affirmatively that they had not filed a petition in 1978 because of the restrictions contained in the notices of that year; and (2) in any event, publication of the supplementary notice in the *Federal Register* was insufficient to hold them accountable for knowledge of the requirement.

1. We reject summarily the first of these lines of argument. It is readily apparent upon even the most cursory analysis that the challenged requirement was imposed in full conformity with the three opinions⁷ we had rendered in connection with our invalidation of the restrictions contained in the 1978 notices.⁸

We need not rehearse in detail everything which was said in those opinions. It suffices to note that we did not there hold that the 1978 notices were entirely void, with the consequence that the issuance of a new notice was mandated. Rather, we specifically left the Licensing Board free to decide for itself whether any further notice was required in the interest of insuring that no person had been dissuaded from filing an intervention petition because of the invalid restrictions in the 1978 notices.

More particularly, in ALAB-539 we expressed doubt that the restrictions had "served to discourage potential petitions (although . . . [they] may have had an effect upon the choice and development of the contentions which were set forth in the petitions filed)." 9 NRC at 427. A short time thereafter, however, we were confronted with the assertion of one of the already admitted

⁵ See, in this connection, ALAB-565, 10 NRC 521 (October 1, 1979).

⁶ Ms. Otto, Ms. Streilein and Mr. Weaver are represented on the appeal by counsel; Mr. Mueller's appeal has been prosecuted *pro se*.

⁷ ALAB-535, ALAB-539, ALAB-544, *supra*.

⁸ We have been given insufficient cause to alter any of the conclusions reached in those opinions.

intervenor to the effect that this doubt was not justified. Not being in a position to determine ourselves "where the truth lies on that matter," we concluded in ALAB-544 that the Board below (in conjunction with the applicant and staff) should decide whether, out of an abundance of caution, it would be best to provide another opportunity to intervene to any persons who in fact had not previously sought intervention for the reason that they could not satisfy the terms of the 1978 notices. 9 NRC at 632.

As is evident from the supplementary notice, the Board decided to give any such persons a fresh chance to intervene. Having done so, it was entirely appropriate for the Board to insist that those endeavoring to avail themselves of the further intervention opportunity aver explicitly that they were within the limited class to whom the supplementary notice was addressed.

2. We find it unnecessary to reach these petitioners' second point, that publication of the supplementary notice in the *Federal Register* is not a sufficient basis for holding them to an awareness of its terms. To begin with, it is quite apparent from the fact that they sought intervention in July 1979 that, even though they may not read the *Federal Register*, both had learned of the notice from some other source. Whether or not their informant had disclosed to them the full text of the notice is of no present moment. Before filing their petitions on the strength of the notice, it was their plain duty—as it is the obligation of any individual desirous of obtaining entry into an NRC licensing proceeding on the basis of such a notice—to make inquiry into the possible existence of preconditions. From all that appears, this was not done by either petitioner. Nor can it be said that it would have been an onerous undertaking. A copy of the supplementary notice was (as petitioners could easily have ascertained) routinely furnished to, and available for inspection in, the local public document room located for this facility in the Sealy Public Library in Sealy, Texas. Ms. Streilein and Mr. Weaver reside, respectively, in Richmond and Simonton, Texas. All three communities are situated in the general vicinity of the plant site. See Final Environmental Statement, p. 2-2.

Beyond that dispositive consideration, at the special prehearing conference Ms. Streilein's counsel represented (in her absence) that his client had become aware of the proceeding in September 1978 but that it was her then impression that she could not intervene in it (Tr. 1227-28). He went on to indicate that he was not certain whether she had believed that intervention was foreclosed to everyone or just to herself (Tr. 1229-30). The Licensing Board thereupon had directed counsel to "go back and call Ms. Streilein again and try to get more information, or have her come in personally and tell us what went on" (Tr. 1230). But, although counsel was given until 4:00 p.m. the following day to comply with this direction, without explanation Ms. Streilein did not appear and no further information was forthcoming.

Mr. Weaver likewise did not attend the conference. One of the other petitioners (a Mrs. Bishop) informed the Board, however, that she had reached him by telephone in Hawaii that morning and had asked him whether he had known of the 1978 notices and been "intimidated" by them (Tr. 1233). According to Mrs. Bishop, he had given an affirmative answer (*ibid*). That

was the extent of their conversation; Mr. Weaver had not told her when he had learned of the 1978 notices or provided an explanation for his failure to have included such a representation in his intervention petition (Tr. 1234-35). In the totality of circumstances, the Licensing Board declined (and we think rightly) to attach any weight to these hearsay statements (Tr. 1235; November 19 order, p. 5).

In sum, the record at hand leaves us with the firm conviction that these petitioners did little, if anything, to ascertain precisely what was required of them to become a party to the proceeding and then to discharge their obligations. This being so, we are totally disinclined to hold that the Licensing Board was wrong in not excusing their failure to comply with the easily fulfilled, and manifestly appropriate, requirement which the supplementary notice had imposed.⁹

B. By her own explicit admission, Ms. Otto's failure to file an intervention petition in response to the 1978 notices was not induced by anything contained therein. Instead, as she informed the Licensing Board in a September 13, 1979 letter and at the special prehearing conference (see Tr. 764-66), her inaction had stemmed from a belief at the time that Allens Creek was to be either a coal-fired or hydroelectric facility¹⁰—a belief said to have been fostered by her unawareness of the issuance and publication of the 1978 notices. She assertedly did not learn of her error until the Spring of 1979 (Tr. 765).

Here, as in the case of the Streilein and Weaver appeals, there is no occasion to reach the question of the legal significance of *Federal Register* publication of notices pertaining to the opportunity to intervene in a licensing proceeding. According to Ms. Otto's September 13 letter, she resided in Simonton, Texas, during the period she was under a misapprehension respecting the type of plant proposed for the Allens Creek site. As she herself acknowledged in the letter, Simonton is "only a few miles from [that] site."¹¹ In that circumstance, the misapprehension is more appropriately attributed to a lack of diligent inquiry on her part than it is to a lack of accessibility of the *Federal Register*. Surely, living in the virtual shadow of the proposed facility, it would not have been at all difficult for her to seek confirmation from a knowledgeable source of the accuracy of her assumption that nuclear generation was not involved.

Moreover, the applicant has represented in its brief to us that articles relating to the filing of intervention petitions under the 1978 notices appeared in daily newspapers of general circulation published in nearby Houston. And

⁹ In reviewing the ruling below, we of course have confined ourselves to the record before the Licensing Board. But that these petitioners now insist that, in fact, they were dissuaded by the 1978 notices forecloses any claim that *Federal Register* publication left them unaware of the content of those notices. See also p. 12, *infra*.

¹⁰ The September 13 letter made reference only to a coal-fired plant. The hydroelectric alternative was first mentioned by Ms. Otto at the conference (Tr. 765).

¹¹ It appears from the Final Environmental Statement (at p. 2-2) that the distance is approximately 10 miles.

we think it not unlikely that, apart from those specific articles, the proposal to build a *nuclear* facility in the Houston area has received considerable media attention ever since it first surfaced.¹²

In a word, then, Ms. Otto's challenge to the denial of her intervention petition must fail for essentially the same reasons applicable to Ms. Streilein and Mr. Weaver. We stress again that, the legal import of *Federal Register* publication to one side, persons whose residence is in sufficiently close proximity to a proposed nuclear facility to give them an interest in that facility's licensing proceeding are duty-bound to take at least some steps to obtain such readily available information as might be required to protect their interest in a reasonably timely fashion. Not having done so, Ms. Otto cannot be heard to complain.

C. Mr. Mueller's petition was denied for the entirely different reason that he had failed to submit his contentions by September 14, 1979, the deadline prescribed in the Licensing Board's August 6, 1979 order. (The contentions were filed, instead, on September 25.) At the October special prehearing conference, he explained that he had not read the order or the Commission's Rules of Practice but had relied upon the advice of "some friends" to the effect that he was entitled to file his contentions fifteen days prior to the commencement of the conference (Tr. 757-63).

In the course of granting him leave on December 3, 1979 to file a supplemental brief in support of his appeal, we instructed Mr. Mueller to tell us whether he had received the August 6 order (a copy of which had been served upon him at the time of its issuance). By way of response, Mr. Mueller states merely that "[i]n the past I have received a lot of correspondence concerning the Allens Creek project . . . Because I have to make a living, with limited resources and time [I] may have lost [track] of the" August 6 order.¹³

This explanation will not do. To be sure, there has been an appreciable quantity of submissions and orders in this case and, since the date upon which his intervention petition was filed, Mr. Mueller no doubt has received copies of most (if not all) of them. Although many may have been of little concern to him, that does not excuse his failure to have examined each as it arrived for the

¹² Needless to say, newspaper articles are a particularly effective means of informing persons of the institution and progress of a licensing proceeding involving a proposed reactor in their area.

¹³ In view of that response, we are giving effect to the well-recognized presumption that served documents have been received by the addressees.

purpose of determining its possible crucial importance to the prosecution of his intervention endeavor.¹⁴ Whatever may have been the other demands upon his time, that much assuredly could be fairly expected of him.

Mr. Mueller's principal contention on the appeal, *i.e.*, that the Licensing Board lacked the authority to establish the September 14 deadline for the filing of contentions, is dispositively answered by the Rules of Practice. 10 CFR 2.711(a) expressly empowers licensing boards to extend or shorten the time provided by the rules for the taking of any action.¹⁵

Insofar as it denied the intervention petitions of the four appellants here involved, the Licensing Board's November 19, 1979 order is *affirmed*.¹⁶
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹⁴ Certainly, he should have paid particular attention to any Licensing Board orders served upon him.

¹⁵ Mr. Mueller does not argue alternatively that the Board below abused its discretion in imposing the September 14 deadline. In any event, given the large number of intervention petitions filed in response to the supplementary notice, the Board was fully justified in concluding that contentions should be filed a month before the special prehearing conference. See ALAB-565, *supra*, 10 NRC at 523-524. Any petitioner experiencing difficulty in meeting the deadline could have applied for an extension of time.

¹⁶ We still have before us an appeal taken by another individual, Robert Alexander, from the denial in a November 20, 1979 order of his untimely intervention petition. That appeal is in the briefing process.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Michael C. Farrar
Thomas S. Moore

In the Matter of

**HOUSTON LIGHTING AND
POWER COMPANY, et al.**

**Docket Nos. 50-498A
50-499A**

(South Texas Project, Units 1 and 2)

**TEXAS UTILITIES GENERATING
COMPANY et al.**

**Docket Nos. 50-445A
50-446A**

**(Comanche Peak Steam Electric
Station, Units 1 and 2)**

January 14, 1980

The Appeal Board grants a petition for directed certification and summarily affirms the order of the Licensing Board (LBP-79-27) denying applicants' motions for specified relief founded on the theory that the doctrines of *res judicata* and collateral estoppel preclude the relitigation of certain issues in this proceeding.

Messrs. E. W. Barnett, Houston, Texas, and J. A. Bouknight, Jr., Washington, D.C., for the Houston Lighting and Power Company.

Messrs. Joseph B. Knotts, Jr., and C. Dennis Ahearn, Washington, D.C., for the Texas Utilities Generating Company.

Messrs. Michael I. Miller and David M. Stahl and Ms. Martha E. Gibbs, Chicago, Illinois, for the Central Power and Light Company and the Central and South West Corporation, et al.

Mr. Marc R. Poirier, Washington, D.C., for the Public Utilities Board of the City of Brownsville, Texas.

Ms. Susan Braden Cyphert, Mr. Frederick H. Parmenter, Ms. Nancy Lugue and Mr. David A. Dopsovic, for the United States Department of Justice.

Mr. Frederic D. Chananla and Ms. Ann Hodgdon for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

The Houston Lighting and Power Company (Houston), supported by the Texas Utilities Generating Company (TUGCO), has petitioned us to undertake an interlocutory review (by way of directed certification¹) of the Licensing Board's October 5, 1979 order in these two antitrust proceedings. LBP-79-27, 10 NRC 563. In that order, the Board denied motions filed by Houston and TUGCO seeking certain specified relief. The motions were founded on the theory that other parties to the proceedings, Central Power and Light Company and its privies, are precluded by the doctrines of *res judicata* and collateral estoppel from now relitigating issues said to have been resolved against Central in *West Texas Utilities v. Texas Electric Service Company*, 470 F. Supp. 798 (N.D. Tex. 1979), *appeal pending*, No. 79-2677 (5th Cir.). For the reasons stated in its opinion, the Board found neither doctrine to be applicable in the circumstances of this case.

Based upon a full consideration of the papers before us², we (1) *grant* directed certification; and (2) *affirm* summarily on the opinion below.³

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹ See 10 CFR 2.718(i); *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478 (1975).

² All of the parties briefed not merely the question of whether interlocutory appellate review was warranted but, as well, the merits of the controversy. See our unpublished orders of November 13 and December 18, 1979.

³ Although the Houston petition did not raise the point, the TUGCO response asserted that the Licensing Board failed to apply properly the summary disposition provisions in the Commission's Rules of Practice, 10 CFR 2.749. We regard that assertion as being so insubstantial as to require no extended discussion. It suffices to note that, the Board having decided (and, as we have determined, correctly) the *res judicata* and collateral estoppel questions against TUGCO and Houston, there was no possible basis for awarding summary disposition to either of those parties. In these circumstances, there is nothing to commend the argument that Central was required to do more than it had done to counter TUGCO's statement of assertedly undisputed facts—which consisted of nothing more than a recitation of the district court findings and was accompanied by no independent support for the "facts" contained therein.

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

**CAROLINA POWER AND
 LIGHT COMPANY**

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

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

January 29, 1980

In response to the staff's appeal, the Appeal Board affirms with modification the Licensing Board's supplemental initial decision on the subject of the applicant's management capabilities to construct and operate the Shearon Harris facility without undue risk to the public health and safety. In modifying the supplemental decision, the Appeal Board deletes a condition imposed by the Licensing Board on the previously authorized construction permit requiring the staff to institute an adjudicatory proceeding at the operating license stage to consider this issue. In lieu thereof, the Appeal Board imposes on the staff certain procedural requirements designed to assure proper consideration of the issue at the operating license stage, without now deciding on the need for a hearing at that time.

RULES OF PRACTICE: STANDING TO APPEAL

As a general rule, the Appeal Board will entertain an appeal from a licensing board ruling only if the appellant can establish that, in the final analysis, some discernible injury to it has been sustained as a consequence of the ruling. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-252, 8 AEC 1175, 1177 (1975); *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-157, 6 AEC 858, 859 (1973).

RULES OF PRACTICE: STANDING TO APPEAL

The Appeal Board may entertain an appeal, as an exception to the general rule enunciated in ALAB-157 (Davis-Besse), where extraordinary circumstances justify appellate review notwithstanding the absence of discernible injury to the applicant. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-252, 8 AEC 1175, 1177-78 (1975).

LICENSING BOARD: DELEGATED AUTHORITY

Licensing boards possess only such powers as have been conferred upon them by the Commission either by regulation or otherwise. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976).

RULES OF PRACTICE: OPERATING LICENSE HEARING

A finding under Section 2.104(a) of the Commission's Rules of Practice that a hearing on an operating license application is required in the public interest (1) is to be made only after the filing of that application; and (2) should be founded on the content of the application, together with all current available information having a bearing upon the need to hold an evidentiary hearing irrespective of whether one might be requested by the applicant or an interested person.

LICENSING BOARD: DELEGATED AUTHORITY

In carrying out its adjudicatory responsibilities, a licensing board has broad authority to impose conditions on the sought permit or license which require that certain measures be taken relating to plant construction or operation in the interest of safety or the preservation of environmental values. But that authority does not allow a condition which, in effect, triggers the initiation of a new and independent adjudicatory proceeding at a later date.

LICENSING BOARD: DELEGATED AUTHORITY

Licensing boards have no independent authority to initiate any form of adjudicatory proceeding; rather what is required is the prior issuance, by some other component of the Commission, of one of the five types of order or notices specified in 10 CFR 2.700. *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), ALAB-381, 5 NRC 582, 592 (1977).

Mr. Edwin J. Rels for the Nuclear Regulatory Commission staff.

DECISION

This construction permit proceeding involves the four units of the proposed Shearon Harris nuclear facility to be located in North Carolina. In January 1978, the Licensing Board rendered an initial decision in which it authorized the construction of the facility. LBP-78-4, 7 NRC 92. Later that year, on the appeal of the joint intervenors,¹ we affirmed. ALAB-490, 8 NRC 234.²

What now brings the proceeding back to us is a supplemental initial decision rendered by the Licensing Board last July,³ following a further evidentiary hearing directed by a Commission order issued subsequent to ALAB-490. See CLI-78-18, 8 NRC 293 (1978). In that supplemental decision, the Board imposed an additional condition upon the Shearon Harris construction permits. Asserting that the Board exceeded its jurisdiction in taking that action, the NRC staff has appealed and asked us to strike the condition. None of the other parties to the proceeding has filed a brief in response to the appeal (although the applicant advised us by letter, without elaboration, that it agrees with the staff). At our invitation, however, the Board below recently supplied us with a memorandum in elaboration of the basis for its conclusion that it possessed the authority to impose the condition in question.⁴

I

A. The background of the present controversy is this. When the proceeding was first before it, the Licensing Board requested the staff to

¹ Conservation Council of North Carolina and Wake Environment, Inc. The appeal was confined to a single issue, the need for the power to be generated by the facility.

² The affirmance embraced the need-for-power issue raised by the appeal, as well as (on *sua sponte* review) all other issues considered by the Licensing Board except for that of the environmental effects of radon (Rn-222) generated in the course of the mining and milling of uranium. Decision on that generic matter was deferred pending the outcome of our exploration of it in other licensing proceedings. See 8 NRC at 241-42; 244. An evidentiary hearing on radon releases is now scheduled for late February. See *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-566, 10 NRC 527 (October 11, 1979).

³ LBP-79-19, 10 NRC 37 (1979).

⁴ LBP-80-3, 11 NRC 106 (January 14, 1980). With our leave, the staff responded to that memorandum in a January 23, 1980 supplemental memorandum of its own.

address certain specific questions relating to its assessment of the management capabilities of the applicant. The staff did so through the testimony of two supervisory inspectors assigned to the Commission's regional office having territorial jurisdiction over North Carolina. Those witnesses alluded to certain problems which had been encountered at other nuclear facilities owned and operated by this applicant. They went on, however, to take note of corrective measures which the applicant had taken to obviate a repetition of those problems and stated that they did not have any present concerns regarding the applicant's ability to manage the construction and operation of Shearon Harris. In its initial decision, the Board cited this testimony and expressly noted that it was "satisfied with the responses to its questions regarding management . . ." LBP-78-4, *supra*, 7 NRC at 108-09.

In April 1978 (some three months after the initial decision had been rendered and while the intervenors' appeal from it was still pending before us), the staff brought to our attention the fact that one of the line inspectors at the applicant's two-unit Brunswick facility (which is in operation) believed that "his views on the management capability of [the] [a]pplicant to staff and operate the Harris facility had not adequately been presented to the Licensing Board." In this connection, the staff transmitted copies of the handwritten notes which the line inspector apparently had given to the supervisory inspectors at their request to assist them in the preparation of their testimony.⁵

In ALAB-490, we referred to these developments and expressed concern respecting the depth of the interrogation of the supervisory inspectors by the Licensing Board. Although nonetheless perceiving no necessity to call for a further exploration of the management capability matter, we admonished the staff "to keep the construction and operation of the Shearon Harris facility under particularly close surveillance to insure that the remedial measures [said to have been initiated by the applicant] indeed prove to be effective . . ." 8 NRC at 244.

Our handling of the staff disclosure did not please the Licensing Board. On August 30, 1978, just a week after ALAB-490 came down, that Board sent a letter to the Commission in which it expressed (1) its agreement with the line inspector that his views had not been adequately reflected in the testimony of the supervisory inspectors; and (2) its belief that it had been misled by that testimony. Taking the Board's letter as raising a question regarding "the

⁵ While correctly regarding itself duty-bound to apprise us of the line inspector's thinking on the matter, the staff expressed the opinion (1) that the "factual content" of his notes was adequately reflected in the testimony of the supervisory inspectors; and (2) that the supervisory inspectors' conclusion that the applicant is competent to conduct and operate the Shearon Harris facility was supported by the record. For these reasons, the staff opined that there was no occasion "to take the matter further." April 18, 1978 letter from staff counsel Charles A. Barth to the members of this Board, at pp. 1-2.

integrity of the adjudicatory process in this proceeding," the Commission responded to it by, *inter alia*, remanding the proceeding to the Licensing Board "for a further hearing on the management capabilities of [the applicant] to construct and operate the proposed Shearon Harris facility without undue risk to the health and safety of the public." CLI-78-18, *supra*, 8 NRC at 294.

B. At the hearing on the remand, the Licensing Board took the testimony of a substantial number of witnesses for the applicant and the staff.⁶ Thereafter, proposed findings of fact and conclusions of law were filed by those parties. (Although actively participating in the hearing, neither the joint intervenors nor the State of North Carolina did likewise.)

In its supplemental initial decision, the Licensing Board reviewed the evidence before it in commendable detail. On the basis of its analysis of the disclosures of record, it reached the conclusion that the applicant possesses the requisite "management capability and technical qualifications to design and construct" the Shearon Harris facility. LBP-79-19, *supra*, 10 NRC at 95.

With respect to facility operation, the Board determined that, at this construction permit stage, the applicant's burden is to establish that "there is now a reasonable probability that it will timely have the management capability and technical qualifications to operate the plant without undue risk to the health and safety of the public." 10 NRC at 95. This determination rested upon the provisions of 10 CFR 50.34(a) (6), which require the Preliminary Safety Analysis Report submitted in connection with a construction permit application to contain "[a] preliminary plan for the applicant's organization, training of personnel, and conduct of operations."⁷

Much of the evidence on this score related to problems encountered in the operation of the applicant's Brunswick nuclear facility between 1974 and 1977. See 10 NRC at 74-95. The Licensing Board took this evidence to establish "clearly" that the quality of the applicant's management during that period "fell below desirable levels, even according to [the applicant's] standards." *Id.* at 96-97. Indeed, as the Board saw it, certain of the problems were "the proximate result of management failure." *Id.* at 97.

⁶ The names and positions of most of those witnesses are set forth in the supplemental decision. LBP-79-19, *supra*, 10 NRC at 43-44. As is there seen, they included several high-ranking officials of the applicant, as well as supervisory and line members of the staff of the two Commission offices directly involved with the matter: Nuclear Reactor Regulation and Inspection and Enforcement. Among the latter were the two supervisory inspectors who had appeared at the earlier hearing and the line inspector whose concerns had prompted the remand.

⁷ The Board stated that, in light of 10 CFR 50.34(b) (6) and (7), "[s]pecifics of the operational plan, including its managerial and administrative controls, may be deferred until the application for an operating license" (and the accompanying Final Safety Analysis Report) is filed. Thus, in the Board's view, Section 50.34(a) (6) "requires a reasonable showing" that the applicant will be able to comply with Sections 50.34(b) (6) and (7). 10 NRC at 95.

The Board both acknowledged and noted its agreement with (1) the insistence of the applicant that effective action had been taken to solve the problems and (2) the staff's belief that the applicant's operations have considerably improved in recent years; were this not so, the Board added, it might have been constrained to suspend the Shearon Harris construction permits. *Ibid.* Nonetheless, according to the Board, there was sufficient residual doubt regarding the applicant's management capability to operate Shearon Harris that a demonstration of such capability should be required in an adjudicatory proceeding at the operating license stage. *Ibid.* To this end, the Board imposed upon the construction permits the following additional condition:

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

Id. at 98.

It is this condition of which the staff complains. Although not contesting the basic factual findings upon which the condition was founded, it insists that, in acting upon construction permit applications, licensing boards are not empowered to direct the triggering of an adjudicatory proceeding at the operating license stage. Beyond that, according to the staff, the Board below "misconstrue[d] the regulations, policies, and standards of this Commission" in concluding that its reservations regarding the applicant's capability to operate the facility constituted sufficient reason to require such a proceeding. Br. p. 16.

II

It is settled "that, as a general rule, we will entertain an appeal from a licensing board ruling 'only if the appellant can establish that, in the final analysis, some discernible injury to it . . . has been sustained as a consequence of the ruling'." *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-252, 8 AEC 1175, 1177 (1975),⁸

⁸ Affirmed without reaching that point, CLI-75-1, 1 NRC 1 (1975).

quoting from *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-157, 6 AEC 858, 859 (1973). We must thus consider at the threshold whether (1) harm to the staff has been or might be sustained as a consequence of the Board-imposed requirement that, at the appropriate time, it trigger an adjudicatory proceeding on the application for an operating license; or (2) there is adequate cause to allow the appeal by way of an exception to the general rule.

At our direction, the staff addressed these questions in its brief. Its fundamental position is that there is no need for it to establish that the challenged Licensing Board action will or might occasion direct harm to itself. Rather, we are told, it is enough that the staff is seeking here to vindicate its interest in protecting "the integrity of the Commission's processes" (which it considers to be jeopardized by the condition in issue). In this connection, it is asserted that "[while the [s]taff may not ordinarily be treated any differently than any other party to proceedings, [it] does have special duties and responsibilities that affect the hearing process." Br. p. 4.

Although thus disclaiming any obligation to establish actual or potential injury to itself, the staff goes on to maintain that it "has been discernibly harmed" by the condition. Specifically, it is said, the Board below has both foreclosed the Director of Nuclear Reactor Regulation from issuing an operating license for Shearon Harris on his own⁹ and has directed the staff to take specific actions. Br. p. 8.

Neither of these lines of argument is free of difficulty. Fortunately, however, we need not pass ultimate judgment upon them. For there is another, and to us more compelling, reason supporting the acceptance of the appeal.

In *Prairie Island*, ALAB-252, *supra*, we entertained a staff petition for reconsideration of our ruling that, subject to certain qualifications, intervenors are to be afforded the opportunity to cross-examine on those portions of a witness' testimony which relate to matters which have been placed into controversy by at least one of the parties to the proceeding. We did so notwithstanding the fact that the ruling patently had occasioned no injury to the staff in that proceeding. Our rationale was the existence of "extraordinary circumstances . . . which warrant a departure from the general rule enunciated in *Davis-Besse*." More specifically,

The holding to which the petition for reconsideration is addressed could well have an impact upon the course of many licensing hearings. Unless and until overturned by action of either this Board or some higher authority, it will be binding upon the licensing boards—in proceedings

⁹ More recently, the Commission suspended for now the authority of the Director to issue an operating license in circumstances where no adjudicatory hearing has been conducted. In such circumstances, Commission authorization is required. 44 *Fed. Reg.* 65049 (November 9, 1979).

now under way as well as in future cases. And official notice can be taken of the fact that an appreciable number of licensing proceedings involve, as did this one, multiple intervenors with different admitted contentions. In short, the staff is not asking that a second look be taken by us on some relatively minor point of law of uncertain prospective significance. Rather, the petition goes to a legal issue of clear recurring importance, even though (wholly fortuitously) the disposition of this case did not hinge upon it. This being so, it seems altogether proper that, instead of brushing the petition aside on the authority of *Davis-Besse*, we examine the merits of the staff's arguments to ascertain whether there is substance to its insistence that our cross-examination holding should not stand.

8 AEC at 1177-78.

Like considerations appear to be present with respect to the condition under attack here. To be sure, at least insofar as we are aware, no other licensing board recently has sought to impose such a condition on a construction permit.¹⁰ And it is equally true that the course of the adjudication of the management capability issue in this proceeding took a rather unusual turn. For all of that, however, the jurisdictional question which the staff would have us decide cannot be dismissed as of little or no precedential importance. To the contrary, there is a reasonable probability that, if permitted to stand, the remedy chosen by this Licensing Board will be invoked by future construction permit boards entertaining similar doubts regarding the ability of an applicant to meet all regulatory requirements associated with later reactor operation.

In short, without deciding whether it has justifiably cast itself in the role of a guardian of the "integrity of the Commission's processes," we can agree with the staff that the question it has put before us merits our examination and resolution irrespective of the matter of discernible injury. On this basis, we now proceed to the merits of that question.

III

At the foundation of the staff's attack upon the condition in issue is an unassailable premise: that licensing boards possess only such powers as have been conferred upon them by the Commission either by regulation or otherwise (*e.g.*, in the notice of hearing for the specific proceeding or by adjudicatory order). *Public Service Company of Indiana* (Marble Hill

¹⁰ But see *National Bureau of Standards*, 2 AEC 273, 276 (supplemental initial decision) and 2 AEC 323 (Commission decision 1963); *Florida Power and Light Company* (Turkey Point Nuclear Generating Units 3 and 4), 3 AEC 195, 202, 205 (initial decision) and 4 AEC 9, 15-16 (Commission decision 1967); *Florida Power Corp.* (Crystal River Unit 3 Nuclear Generating Plant), 4 AEC 166, 170, 173 (initial decision 1968) and 4 AEC 318, 320-22 (Commission decision 1970).

Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170-71 (1976). Advancing from this premise, the staff insists that construction permit licensing boards generally and this Licensing Board in particular have not been clothed with the authority to direct the staff to institute an adjudicatory proceeding at the operating license stage for the purpose of considering one or more specified issues. This conclusion is said to be compelled by a collective consideration of (1) the Commission's regulations in implementation of Sections 185 and 189a. of the Atomic Energy Act of 1954, as amended;¹¹ (2) the notice of hearing which initiated this proceeding; and (3) the 1978 order remanding the proceeding to the Board below for future exploration.

A. By virtue of Section 189a. of the Act, a hearing is required on construction permit applications. No similar requirement is imposed with regard to operating license applications. Rather, "in the absence of a request [for a hearing] by any person whose interest may be affected," this Commission may "issue an operating license . . . without a hearing, but upon thirty days' notice and publication once in the Federal Register of its intent to do so." Before taking this action, however, the agency must find, as provided in Section 185, that the facility "has been constructed and will operate in conformity with the application as amended and in conformity with the provisions of this Act and of the rules and regulations of the Commission."

This basic licensing scheme was carried over into 10 CFR Part 2, the Commission's Rules of Practice. In substance, the Rules require the issuance of a notice of hearing on every application for a construction permit. If, however, an operating license application is involved, a notice of hearing is to be issued *ab initio* only in circumstances where "the Commission finds that a hearing is required in the public interest." In the absence of such a finding, a notice of the proposed issuance of an operating license must be published in the *Federal Register*; this notice must, *inter alia*, provide for the filing of intervention petitions and requests for a hearing on the part of "[a]ny person whose interest may be affected by the proceeding."¹² In the event that at least one such request and petition is both filed and granted, a notice of hearing then is forthcoming.¹³ Otherwise, the operating license may be issued without

¹¹ 42 U.S.C. 2235, 2239(a).

¹² In the case of a construction permit application or a Commission-ordered hearing on an operating license application, the opportunity to seek intervention is extended to interested persons in conjunction with the issuance of the notice of hearing.

¹³ If thus initiated, the adjudicatory proceeding on an operating license application is confined to the matters placed into controversy by the parties, together with any other matters which the Licensing Board (or this Board or the Commission on appellate review) deems worthy of consideration. See 10 CFR 2.760a.

a hearing. See 10 CFR 2.104, 2.105.¹⁴

As appears from its January 14 memorandum LBP-80-3, *supra*,¹⁵ the Licensing Board rests its authority to impose the condition in issue upon the proviso in 10 CFR 2.104(a) that, even though not mandated by statute or regulation, a hearing will nonetheless be held on an operating license application if “the Commission finds that [it] is required in the public interest.” In the Board’s view, it is empowered to make a finding to that effect under its delegation to conduct this adjudicatory proceeding on the Commission’s behalf (*i.e.*, it is vested with all of the authority conferred by Section 2.104 upon the Commission itself). See 11 NRC at 106.¹⁶

For the purposes of the Rules of Practice, the term “Commission” has been explicitly defined to include “the Commission of five members or a quorum thereof sitting as a body . . . or any officer to whom has been delegated authority pursuant to section 161n of the [Atomic Energy] Act.” 10 CFR 2.4(e).¹⁷ Given this definition, we can readily concur with the Board below that Section 2.104(a) cannot be taken as, on its face, requiring that the public interest finding be made by the Commission and no one else.¹⁸ We can further agree that the challenged license condition is fairly read as embracing such a finding insofar as the management capability issue is concerned. But acknowledgement of the force of the Board’s position on these scores is not the end of the matter. There remains the question of the timing of the finding.

Implicit in the reasoning of the Board below is a belief that Section 2.104(a) authorizes the making of the finding at any time. More specifically, the necessary, albeit unspoken, assumption is that the Section contemplates that the Commission (or its delegate) might appropriately find that a hearing on an operating license application is required in the public interest .

¹⁴ A notice of issuance of the license must be published in the *Federal Register*. The notice must contain, *inter alia*, a finding that the application for the license complies with the requirements of the Atomic Energy Act and the Commission’s regulations. See 10 CFR 2.106.

Although Section 2.105(e) authorizes the Director to issue the license, as earlier noted (see fn. 9, *supra*) that authority was recently suspended and action by the Commission itself is now required.

¹⁵ In its supplemental initial decision rendered last July, the Board did not address the jurisdictional question to any extent. Hence, the reasoning underlying its conclusion on that question is to be found exclusively in the January 14 memorandum.

¹⁶ Needless to say, as employed in this opinion references to “the Commission” are to the five Commissioners functioning as a collegial body. (Absent a contrary indication, that is the meaning that normally is to be ascribed to such a reference when found in an Appeal Board opinion.)

¹⁷ The definition of “Commission” contained in 10 CFR 1.1(b), cited by the Licensing Board, is in terms applicable only to Part 1 to 10 CFR. Thus, it is the Part 2 definition which controls here.

¹⁸ For reasons we do not regard as particularly convincing, the staff argues that “[t]he boards are not delegates of the Commission under this provision of the regulations.” Supplemental Memorandum, p. 5. As will shortly become clear, it is not necessary to dwell upon those reasons here. See fn. 20, *infra*.

notwithstanding that, at the time the finding is made, the application has not as yet been filed—and, indeed, might be still years in the offing. As we see it, however, the Section cannot reasonably be so construed. Rather, read as a whole, the Section conveys the message to us that the finding (1) is to be made only after the filing of the application and (2) should be founded on the content of that application together with all *current* available information having a bearing upon the need to hold an evidentiary hearing irrespective of whether one might be requested by the applicant or an interested person.

This very case amply illumines why this is the sensible interpretation of Section 2.104(a). In light of the factual disclosures in the record before it, the Licensing Board well may have had good cause to harbor some residual doubt respecting whether, when the Shearon Harris facility is completed and ready to go on line, the Applicant will possess the requisite management capability to operate it satisfactorily. And, understandably and commendably, the Board wishes to insure that, before the facility is licensed for operation, the foundation for the doubt has been removed. But, although it may now appear to the Board that this objective can be best accomplished by a reexamination of the management capability issue in an adjudicatory hearing at the operating license stage, once that stage has been reached a quite different conclusion may have become warranted. At that time, for example, it might clearly appear that the applicant in fact has rectified each of the shortcomings in the management of its other now-operating nuclear facilities which had given rise to the Board's doubts—and that there is no longer any reason to be concerned respecting its ability to operate Shearon Harris properly. In such circumstances, there would be at least room for serious question whether a hearing on the management capability issue need be held "in the public interest" despite the lack of a request for one by any interested person.

In short, the vice of the Licensing Board's condition is that it prescribes future procedural action of an extraordinary character on the basis of a present set of facts which may materially change in the interim.¹⁹ We cannot accept the Licensing Board's thesis that Section 2.104(a) was intended to sanction such a course. Rather, once again, we are satisfied that the Commission's contemplation was that any finding that the public interest dictates the conduct of an otherwise non-required hearing on a license application will rest upon a contemporaneous appraisal of the various relevant factors—thereby giving the finding the support which it obviously will lack if founded instead upon stale information acquired years previously.²⁰

¹⁹ Cf. *Arkansas Power and Light Company* (Arkansas Nuclear One Unit 2), ALAB-94, 6 AEC 25, 30-31 (1973).

²⁰ It follows from the foregoing discussion that, because a construction permit board's jurisdiction almost invariably will have terminated by the time the operating license application is

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B. The Licensing Board has not suggested that either the notice of hearing which initiated the construction permit proceeding²¹ or the Commission's remand order in September 1978²² might supply an alternative basis for its authority to order an evidentiary hearing at the operating license stage. And it is clear that they do not. The notice of hearing was entirely unexceptional in its content; neither in terms nor by implication did it confer upon the Licensing Board any special powers beyond those enjoyed by construction permit boards generally. Similarly, the remand order is devoid of anything which might be thought to allow the Board, upon its further exploration of the management capability issue, to take action which would have been beyond the authority of any other licensing board considering the same issue in the context of a construction permit application.

True enough, in carrying out its adjudicatory responsibilities, a licensing board has broad authority to impose conditions on the sought permit or license which require that certain measures be taken relating to plant construction or operation in the interest of safety or the preservation of environmental values. But that authority has never been held to allow a condition which, in effect, triggers the initiation of a new and independent adjudicatory proceeding at a later date. Indeed, it is well-settled that licensing boards are not empowered to take such a step. More than 12 years ago, the Commission flatly stated that it has "not delegated to atomic safety and licensing boards the authority to direct the holding of hearings following the issuance of a construction permit." *Turkey Point, supra* fn. 10, 4 AEC at 15.²³ Whether or not the Licensing Board is right in its characterization of that statement as *dicta*, it nonetheless must be accepted as reflecting the view of the Commission on the point at that time. And there having been no material alteration in the scope of the Commission's delegation to the licensing boards since *Turkey Point*—either by rule change or otherwise—,²⁴ the statement is still entitled to our respect.

While the *Turkey Point* pronouncement should thus carry the day in all events, it is also worthy of note that we too have expressly determined that "the licensing boards have no independent authority to initiate any form of

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filed, such a board will rarely, if ever, be in a position to make the Section 2.104(a) "public interest" finding on the Commission's behalf.

²¹ 37 *Fed. Reg.* 20344 (September 29, 1972).

²² CLI-78-18, *supra*.

²³ See also, *Crystal River, supra* fn. 10.

²⁴ The "public interest" finding provision in Section 2.104(a) of the Rules of Practice, discussed above, was in effect when *Turkey Point* was decided. And there is no possible inconsistency between the provision and that decision. For, as earlier noted, under our interpretation of Section 2.104(a) a construction permit board would no longer be in existence at the time the "public interest" finding is to be made.

adjudicatory proceeding”; rather, “[w]hat is required is the prior issuance, by some other component of the Commission, of one of the five types of orders or notices specified in 10 CFR 2.700.” *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), ALAB-381, 5 NRC 582, 592 (1977). The Licensing Board acknowledged this holding but found it to be no obstacle to the imposition of the license condition. In the Board’s view, as the delegate of “some other component”—*i.e.*, the Commission itself—it could exercise the Commission’s authority under Section 2.104(a) to initiate a hearing through the vehicle of a finding that one is required in the public interest. 11 NRC at 106. As has already been seen, however, this line of reasoning is based upon a faulty reading of that Section. To repeat, the “public interest” finding provision of that Section cannot be invoked at the construction permit stage to call for the institution of a hearing at the operating license stage. This being so, it is of no moment that, as observed in *South Texas* (5 NRC at 592), the issuance of “a notice of hearing [under Section 2.104] on an application which . . . in the public interest should . . . be heard” is one of the means by which an adjudicatory proceeding can be commenced.

It well may be, of course, that the Commission has the inherent authority to order an evidentiary hearing on a license application in circumstances (or at a time) not within the specific contemplation of the Rules of Practice. But that matter need not be explored here. The bounds of the inherent powers possessed by Licensing Boards are not co-extensive with those of the Commission. Whatever may be the reach of the Commission’s own authority, licensing board action must be founded upon either express or necessarily implicit delegation of that authority to it. Needless to say, an authorization to conduct an adjudicatory proceeding pursuant to a notice of hearing issued by the Commission does not carry with it by necessary implication the power to order the initiation at a later date of a separate and distinct proceeding.

C. We thus are constrained to agree with the staff that the Licensing Board exceeded its jurisdiction in imposing the challenged license condition. For that reason, the condition may not be allowed to stand.

It does not perforce follow, however, that the Board was not entitled to give expression to both its residual concerns respecting the Applicant’s management capability to operate the facility and its present belief that a hearing on that issue at the operating license stage would be in the public interest. To the contrary, it was not merely the right, but the duty, of the Board to include in the supplemental initial decision the full range of the determinations it had reached in its appraisal of the record before it. No other conclusion is possible in the face of the Commission’s explicit direction in its remand order that the Board conduct “a further hearing on the management capabilities of [the applicant] to construct *and operate* the proposed Shearon Harris facility without undue risk to the health and safety of the public.” See p.

5, *supra*; emphasis supplied. Stated otherwise, it is scarcely likely that the Commission would have issued such a direction had it not intended the Licensing Board first to explore thoroughly all aspects of the management capability issue and then to make known the fruits of that exploration.

Equally implicit in the terms of the remand order is an instruction to the Licensing Board to prescribe such remedial action as might both be warranted by its findings and within the bounds of its general delegated authority. In its January 14 memorandum, LBP-80-3, *supra*, the Board takes note of this fact and goes on to illumine the options to which it had given consideration once it had appraised the record before it in terms of the requirement that, at the construction permit stage, there be a "preliminary plan for the Applicant's organization, training of personnel, and conduct of operations."²⁵ We are told that, notwithstanding its doubt regarding whether that requirement had been satisfactorily met, there was insufficient cause to suspend the outstanding construction permits (inasmuch as the conditions precedent to the issuance of such permits set forth in 10 CFR 50.35(a) had been fulfilled). What the Board therefore looked for was another remedy which would be at once "practical and equitable." Rejecting (for the reasons stated in its supplemental initial decision)²⁶ the alternative of devising a license condition which would mandate the submission of an improved "preliminary plan for the Applicant's organization, training of personnel, and conduct of operation," the Board chose instead to impose a condition which would insure an operating license hearing. 11 NRC at 114-115.

Having held that condition to be invalid, we might, of course, remand the matter to the Licensing Board to enable it to search anew for a remedy both consistent with its findings and within its authority. We have concluded, however, that there is no necessity to prolong this lengthy proceeding still further by taking that step. Rather, we can and shall fashion appropriate relief ourselves.

We have previously noted our agreement with the Licensing Board's belief in the importance of insuring that the requisite management capability is present when the Shearon Harris facility commences operation. And, it seems patent to us that whether that capability exists is much better determined by an appraisal of the quality of the Applicant's management at the time of the operating license application than it is by the scrutiny of preliminary plans submitted years in advance. *Cf. Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-106, 6 AEC 182, 184.²⁷ The condition imposed by the

²⁵ 10 CFR 50.34(a)(6). See fn. 7, *supra*, and accompanying text.

²⁶ 10 NRC at 97.

²⁷ In this connection, the staff challenges the Licensing Board's statement in the January 14 memorandum that there was doubt as to the adequacy of the applicant's preliminary plan. It observes that the Board did not indicate in what respects the plan was inadequate. Staff

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Licensing Board appears to reflect a similar view—as well as the Board's conviction that a hearing on the operating license will provide the best mechanism for conducting that appraisal.

Although not sharing the Board's opinion that the desirability of an operating license hearing should or can be conclusively determined at the construction permit stage,²⁸ we of course do not suggest that such a hearing perform will be ultimately found unwarranted. As the staff itself acknowledges, following the filing of the operating license application and its supporting documentation, a member of the public may request a hearing or the Commission may see fit to order one in the public interest.²⁹

In the making of an informed judgment on whether to exercise the right to seek or to order a hearing on the management capability issue, interested persons and the Commission would plainly be advantaged by ready access not merely to the application and its accompaniments but, as well, to the product of the staff's evaluation of all information when at hand which might bear upon that issue. It appears, however, that in normal circumstances that evaluation would not be available either to the public or the Commission prior to the time of the issuance of the notice of proposed action under 10 CFR 2.105. Indeed, such an evaluation would not even have been undertaken.

Section 2.105(a)(4) provides that the notice of proposed action (commonly denominated a "notice of opportunity for hearing") "shall be issued as soon as practicable after the [operating license] application has been docketed." In turn, the docketing of a tendered application takes place upon the determination by the Director of Nuclear Reactor Regulation that it is "complete and acceptable for docketing." 10 CFR 2.101(a) (3). "Generally, that determination will be made [if warranted] within a period of thirty (30) days." 10 CFR 2.101(a) (2).

As it thus obvious, the staff usually will conduct its detailed review of the operating license application *after* the notice of opportunity for hearing has issued (or, alternatively, *after* the Commission itself has triggered a hearing by a finding under Section 2.104(a) that one is required in the public interest).³⁰ This is borne out by the statement of considerations which accompanied the 1972 amendments to the Rules of Practice which established the "early notice"

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supplemental memorandum, p. 11. We are inclined to agree with the staff that the Board's residual doubt related in actuality to whether the Applicant has the capability to carry out the plan (given its past performance in the operation of its other nuclear facilities). But, even if it might be relevant to the warrant for the condition imposed by the Board, we think that distinction unimportant to the appropriateness of the quite different substitute relief we are directing in this opinion.

²⁸ See p. 28, *supra*.

²⁹ While we are unaware of any prior occasion upon which the Commission has taken such a step, the possibility that it will do so in this instance is a real one.

³⁰ Once again, a notice of hearing, rather than a notice of opportunity for hearing, is issued if a Section 2.104(a) finding has been made.

procedures. It is therein observed that the initial task of the staff is to decide whether the application is "reasonably complete and conforms to the Commission's requirements." Once the staff has answered that question in the affirmative and docketed the application, it becomes obliged "to establish a schedule for its review of the application and to specify the key intermediate points of that review." 37 *Federal Register* 15127, 15128 (July 28, 1972).

No doubt, as the statement of considerations also suggests, there "early notice" provisions—under which the staff's review and up-dated safety analysis of an operating license application come after, rather than before, the notice of opportunity for hearing—will best serve the interests of all concerned in the typical case. But we do not understand their adoption by the Commission to carry with it the notion that there must be blind adherence to them even in special situations such as that presented here.³¹ Stated otherwise, if the decision whether to request or order a hearing on the management capability issue might be most intelligently reached against the background of the staff's appraisal of that capability, why should not those who must make that decision—*i.e.*, the Public and the Commission itself—have the benefit of the appraisal?

In short, while Sections 2.101(a) and 2.105(a) chart the course that the staff is generally to pursue in its processing of an operating license application, we think that some deviation from that course is permissible (if not obligatory) where exceptional circumstances bearing upon the public health and safety warrant it. In this connection, the deviation we have in mind here—requiring the staff to make and publicize its appraisal of the applicant's management capability in advance of the issuance of a notice of opportunity for hearing—is modest in scope and (unlike the license condition imposed by the Licensing Board) meshes well with the basic regulatory scheme.

While the Board below sought to direct the staff to take affirmative action not otherwise required of it by statute or regulation, our proposed instruction goes simply to the timing of action which, in all events, the staff must take sooner or later in its mandated review of all health and safety aspects of the operating license application (Indeed, even if the Commission's regulations did not specifically call for a fresh and close examination of the Applicant's management capability as part of that review, given the history of Brunswick plant operation the staff would be derelict in the discharge of its responsibilities were it to fail to focus on that matter.)

In this regard, the staff should not encounter serious difficulty in undertaking an early evaluation of management capability. To be sure, the operating license application likely will be filed well in advance of the

³¹ In our view, the history of this applicant's management of plant operation (as illumined in the supplemental initial decision) justifies that characterization of the situation at bar.

completion of the plant. But it will have to be accompanied by the Final Safety Analysis Report, which must include, *inter alia*:

The following information concerning facility operation:

- (i) The Applicant's organizational structure, allocations [of] responsibilities and authorities, and personnel qualifications requirements.
- (ii) Managerial and administrative controls to be used to assure safe operation.

10 CFR 50.34(b)(6). Beyond that, we understand that the Commission's Office of Inspection and Enforcement now has two resident inspectors assigned to the Brunswick facility. Presumably, their surveillance of the operation of that facility already has been, and will continue to be, a fertile source of valuable information respecting both the extent of the advancements in the applicant's capability to manage its nuclear facilities and the present-day quality of its managers.

The fact that the staff should thus be in a position to make an informed appraisal of management capability once the operating license application is in hand does not mean, of course, that it would be precluded from later altering its conclusions if further developments or analysis so warranted. Certainly, no such proscription would be consistent with the staff's fulfillment of the important role assigned to it in connection with operating license applications. All we intend to suggest is that it is feasible for the staff to provide an early and in-depth evaluation of management capability which would assist interested persons and the Commission in determining whether an adjudicatory hearing on the question is merited.³²

In the course of its attack upon the Licensing Board's condition, the staff asserted (Supplemental Memorandum, pp. 4-5) that one should not presume that either it or the Commission "will not do a proper job in seeking that [the Applicant] has the requisite qualifications for an operating license without an adjudicatory hearing." Without pausing to reflect upon whether the condition carries that implication, we can confidently say that our substitute remedy does not. To the contrary, it both recognizes the key role which the staff plays in the passing of final judgment upon the Applicant's qualifications and

³² This being so, it would not appear that there should be an appreciable delay in the issuance of the notice of opportunity for hearing (assuming no Section 2.104(a) "public interest" finding is made by the Commission).

It might be added that, in emphasizing the importance that an early appraisal might have to the Commission, we do not imply that its "public interest" finding necessarily would have to be made before a notice of opportunity for hearing was issued. But Sections 2.104(a) and 2.105(a) certainly suggest that any such finding normally will be made in advance of the public notice and control the kind of notice given (*i.e.*, if the finding has been made, a notice of hearing will issue rather than simply a notice of opportunity for hearing). And there are, of course, advantages to having members of the public know, at the time they must decide upon seeking intervention themselves, whether the Commission thinks a hearing is required.

presumes that the role will be properly executed. Moreover, the remedy does no violence to the fundamental concept, stressed consistently by the staff, that an operating license adjudicatory proceeding is to be triggered only by either a successful intervention petition and request for a hearing or a Section 2.104(a) “public interest” finding. (Rather, as previously developed, its sole purpose and effect is to provide an additional measure of assurance that an operating license proceeding will be triggered by one of these mechanisms if, but only if, there is good reason for doing so.)³³

IV

Implicit in the foregoing is our agreement with the Licensing Board’s conclusion (not challenged by any of the parties) that a withdrawal of the now-issued construction permits is not warranted by reason of the still lingering questions relating to the Applicant’s capability properly to manage plant *operation*. On that score, we are satisfied that, at least so long as the staff action called for in this opinion is fully carried out, the resolution of those questions can appropriately abide the event of the filing and consideration of the operating license application—with or without an adjudicatory hearing (as it may turn out).³⁴

What remains is the Licensing Board’s additional determination that the record sufficiently demonstrates the Applicant’s managerial and technical capability to *design* and *construct* the facility. 10 NRC at 63, 95. Because this determination likewise has gone unchallenged, we have reviewed it on our initiative. An examination of the Board’s detailed subsidiary findings (*id.* at 45-63), and of the underlying record, persuades us that the findings have sufficient evidentiary foundation and support the result reached on that issue.

In the same vein, one concluding general observation is in order. That we have parted company with the Licensing Board on a single and narrow jurisdictional point should not be allowed to obscure the exemplary manner in which that Board discharged its responsibilities on the remand of this proceeding. It is evident to us that, once provided with the opportunity to do so by the Commission, the Board saw to it that the management capability

³³ In the totality of the foregoing circumstances, we find no occasion to dwell at length on our authority to order this relief in the exercise of the Commission’s review functions delegated to us in 10 CFR 2.785(a). As we see it, the reach of that delegation must be thought broad enough to enable us to direct the staff to take certain measures (already required of it) at a time when the Commission and the public will derive an important informational benefit from them. If the staff thinks otherwise, it is free, of course, to seek the intercession of the Commission (which is the ultimate arbiter of the bounds of the powers it has bestowed upon us).

³⁴ Needless to say, again without regard to whether a hearing is held, the Applicant will then have to establish that it *has* the requisite management capability (and not simply that it is moving toward that end).

issue was probed with the thoroughness that it indisputably warranted. The end product was a comprehensive record and a decision which reflected the careful and thoughtful attention which the Board had given to the evidence.³⁵

V

For the foregoing reasons, the Supplemental Initial Decision, LBP-79-19, *supra*, is *modified* to delete the condition imposed upon the construction permits in paragraph 201, 10 NRC at 98. See p. 23, *supra*. In lieu of that condition, the staff is hereby directed to insure that no notice of opportunity for hearing under 10 CFR 2.105 is issued in connection with any application which may be filed for operating licenses for the Shearon Harris facility *unless and until*:

(1) The staff has conducted, on the basis of the content of the operating license application and supporting documentation (together with any other pertinent information then at its disposal), a preliminary evaluation of the applicant's capability to manage the operation of the facility in conformity with all regulatory requirements which have or may be imposed in the interest of the protection of the public health and safety; and

(2) The findings and conclusions reached upon that evaluation have been (a) made publicly available in written form; and (b) brought specifically to the attention of the Commission with an accompanying reference to both the Licensing Board's Supplemental Initial Decision and our decision today. It is further directed that, pursuant to 10 CFR 2.105(b)(2), the notice of opportunity for hearing (if one is issued) set forth the manner in which a copy of that analysis may be obtained or examined.

As so modified, the Supplemental Initial Decision is *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

³⁵ We also commend for serious staff consideration the observations made by that Board in a memorandum appended to its supplemental initial decision. See 10 NRC at 104-07.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Ivan W. Smith, Chairman
Dr. Walter H. Jordan
Dr. Linda W. Little

In the Matter of

Docket No. 50-289

METROPOLITAN EDISON
COMPANY

(Restart)

(Three Mile Island Nuclear
Station, Unit No. 1)

January 4, 1980

The Licensing Board certifies to the Commission two questions regarding consideration of the issue of post-accident generation of hydrogen gas in this restart proceeding.

CERTIFICATIONS TO THE COMMISSION

Background

This is a certification to the Commission under 10 CFR 2.758(d) on the issue of whether 10 CFR 50.44 should be waived, or an exception to it made, to permit consideration of post-accident hydrogen generation as an issue in this proceeding. This is also a certification to the Commission under 10 CFR 2.718(i) on whether the issue of post-accident hydrogen gas generation is within the scope of the Commission's Order and Notice of Hearing of August 9, 1979. Both certifications are in accordance with the Commission's Suspension of 10 CFR 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings, November 5, 1979 (44 *Federal Register* 65049), because Commission policy guidance is called for.

In his Supplement to Petition to Intervene dated October 22, 1979, Intervenor Steven C. Sholly filed his Contention No. 11:

It is contended that the production of hydrogen in the reactor core from clad metal-water reactions following an LOCA poses an unacceptably high risk of catastrophic failure of the reactor pressure vessel and the reactor containment, with the subsequent release of a substantial portion of the core inventory into the environment. It is further contended that until a safe and reliable means for eliminating hydrogen gas from the containment is installed at Unit 1, and is provided with suitable

redundancy as required by GDC 41, restart of Unit 1 poses a risk to public health and safety and must be denied.

The licensee responded to Mr. Sholly's hydrogen control contention, in part, by dodging the thrust of it. To Mr. Sholly's statement that there should be ". . . a safe and reliable means for eliminating hydrogen gas from the containment," licensee answers that plants such as TMI-1 are not required to have a recombiner system pursuant to 10 CFR 50.44(g).¹ The NRC staff also objected to the contention because it challenged 10 CFR 50.44, but the staff observed that the basis for the contention approached the showing required to waive a regulation under 10 CFR 2.758.²

Intervenor Union of Concerned Scientists' (UCS) Contention 11 states that the design of TMI-1 assumed that no more than five percent of the fuel cladding would react to produce hydrogen but that the accident demonstrated that the assumption should be that 100 percent of the cladding reacts.³ Again licensee objects by pointing to Section 50.44; by stating that older plants such as TMI-1 are not required to have recombiners; and by stating that the five percent metal-water assumption applies to later [than TMI-1] plants.⁴ Staff objected to the UCS hydrogen control contention again as a challenge to 10 CFR 50.44.⁵

Intervenor Anti-Nuclear Group Representing York (ANGRY), in its Contention No. 5(A), calls for the installation of a hydrogen recombiner at TMI-1.⁶ Licensee objects on the same basis⁷ but staff has no objection to this contention.⁸

In each instance licensee also pointed out that NUREG-0578, TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations, recommends that rulemaking be initiated on the issue of hydrogen recombiners and therefore the subject is not appropriate for this adjudicatory proceeding. This viewpoint is discussed in greater detail below.

Certification Under 10 CFR 2.758(d)

On November 13, 1979 Mr. Sholly filed his Petition for Exception to 10 CFR 50.44 pursuant to 10 CFR 2.758(b) with an affidavit in support of the petition containing many references to NUREG-0578, and NUREG-0600, Investigation into the March 28, 1979 Three Mile Island Accident by Office of

¹ Licensee's Response to Final Contentions of Steven C. Sholly, October 31, 1979, p. 10.

² NRC Staff Brief in Response to Contentions, October 31, 1979, p. 9.

³ Final Contentions of Union of Concerned Scientists, October 22, 1979, pp. 5, 6.

⁴ Licensee's Response to Final Contentions of The Union of Concerned Scientists, October 31, 1979, p. 8. We do not understand licensee's reference presumably to plants newer than TMI-1. Licensee does not make this argument elsewhere and seems to take the overall position that the 5 percent rule or its equivalent does apply.

⁵ NRC Staff Brief in Response to Contentions, *supra*, p. 3.

⁶ Contentions of Anti-Nuclear Group Representing York (A.N.G.R.Y.), October 22, 1979.

⁷ Licensee's Response to Final Contentions of Anti-Nuclear Group Representing York, October 31, 1979, p.6.

⁸ NRC Staff Brief in Response to Contentions, *supra*, p. 16.

Inspection and Enforcement. Mr. Sholly's petition, affidavit and the relevant responses by the licensee and the NRC staff are attached hereto.⁹

The licensee does not state whether the assumptions of Section 50.44(d)(1) (facilities in compliance with Section 50.46(b)) or the assumptions of Section 50.44(d)(2) (facilities not evaluated under Section 50.46(b)) are controlling. From the TMI-1 Safety Evaluation Report (SER) we learn that TMI-1 was evaluated under the ECCS Interim Acceptance Criteria for LWR's of June 29, 1971, amended December 18, 1971.¹⁰ The staff reviewed TMI-1 under the guidelines of Regulatory Guide 1.70, "Control of Combustible Gas Concentration Considerations." SER, 6.3.1, 6.2.5. The utilities receiving construction permits under the Interim Acceptance Criteria for ECCS had the option of employing the assumptions later adopted in either Section 50.44(d)(1) or 50.44(d)(2) but the record presently before us does not reveal which assumptions apply to TMI-1. Most, if not all, plants were subsequently brought into compliance with Section 50.46, the final acceptance criteria. Accordingly, the assumptions of Section 50.44(d)(1) probably apply to TMI-1. We see no practical difference for the purposes of this consideration, as assumptions under either section were exceeded during the accident.

The Lessons Learned Task Force reported that at the TMI-2 accident the ". . . hydrogen generation was well in excess of the amount required by the Commission regulations as a design basis for any type of post-accident combustible gas control system." NUREG-0578, p. A-22.

Under 10 CFR 2.758(b), the sole ground for a waiver or exception to a regulation shall be that the special circumstances with respect to the subject matter of the particular proceeding are such that the regulation would not serve the purposes for which it was adopted. Mr. Sholly has made a clear and *prima facie* showing that, in this proceeding, the applicable provisions of 10 CFR 50.44 will not serve the purposes for which they were adopted.

The licensee is silent as to whether 10 CFR 50.44 continues to serve its intended purpose. Licensee does not expressly address the merits of Mr. Sholly's petition on any basis specified in Section 2.758. As to the issue of whether 10 CFR 50.44 continues to serve its intended purpose, licensee is in default.¹¹ Licensee has elected instead to oppose the petition on the ground that it raises issues beyond the scope of the hearing.

⁹ NRC Staff Brief on the Effect of Rulemaking Upon the Issues of the TMI-1 Suspension Proceeding, November 16, 1979, pp. 1-2, 9-12; Licensee's Opposition to Petition of Steven C. Sholly For an Exception to 10 CFR 50.44, November 30, 1979; Licensee's Response to NRC Staff Brief on the Effect of Rulemaking Upon the Issues of the TMI-1 Suspension Proceeding, November 30, 1979, pp. 1, 2, 9-12; and the NRC Staff Response to . . . Steven Sholly's Petition for Exception to 10 CFR 50.44, December 3, 1979, pp. 1, 4, and 5.

¹⁰ 36 *Federal Register* 12248 and 36 *Federal Register* 24082.

¹¹ Perhaps licensee would have us infer from its argument concerning the scope of proceeding and rulemaking that it opposes the petition also because there are no "special circumstances" concerning this "particular proceeding" which justify a waiver of the regulation as required by Section 2.758(b).

The NRC staff does not oppose Mr. Sholly's petition, but joins the licensee in the view that the question should be resolved in generic rule making.

Whether there are special circumstances with respect to the subject matter of this particular proceeding which warrant a waiver of the regulation is not so clear. In our view, the fact that it was the TMI-2 accident that demonstrated that 10 CFR 50.44 may no longer serve its intended purpose satisfies the requirement under Section 2.758(b) that special circumstances for a waiver exist. However this is a matter of Commission policy which should be considered in the light of our following certification concerning the scope of the proceeding under 10 CFR 2.718(i).

Certification Under 10 CFR 2.718(i)¹²

Licensee requests that, if the board finds that Mr. Sholly has made a *prima facie* showing required by 10 CFR 2.758(d), we include within our certification the issue of whether hydrogen gas control is within the scope of the proceeding.¹³ Licensee's motion to certify the issue of scope of the proceeding is unopposed. The scope issue is important; it is fairly debatable and policy guidance from the Commission is called for.

Licensee opposes litigation of hydrogen gas control on two major bases:

(1) Hydrogen gas control was not included, indeed it was intentionally excluded, from the subject matter of the Commission's Order and Notice of Hearing of August 9, 1979.

(2) It was excluded from the scope of this proceeding for good reason; the problem is generic and should be resolved generically.

In its Order and Notice of August 9, the Commission directed the board to consider certain short term actions specified in pages 5 through 7 of the order. These actions included Category A recommendations of Table B-1 of NUREG-0578. Order, p. 7. The Commission also directed consideration of certain long term actions specified on pages 7 and 8 of the order, including the Category B items of Table B-1.

Table B-1 of NUREG-0578 includes several items under recommendations designated 2.1.5.a-c. Recommendation 2.1.5.a requires dedicated hydrogen control penetrations to be described and scheduled as Category A and to be completely installed as Category B. Recommendation 2.1.5.b relates to BWR containments. Recommendation 2.1.5.c refers to combustible gas control recombiners, and is divided into two items. One item, marked by an asterisk, is entitled "Rulemaking to require capability of installing recombiners." The asterisk explains the recommendation: "Implementation schedules will be established by the Commission in the course of immediately effective rulemaking. The Task Force recommends that the rulemaking process be initiated promptly." The other item under 2.1.5.c requires, as Category B, that licensees review procedures and bases for recombiner use.

¹² Rule 10 CFR 2.718 specifies the general powers of a presiding officer including, under paragraph (i), the power to certify questions to the Commission.

¹³ Licensee's response to Sholly petition for exception to Section 50.44, p. 2, attached.

Because "capability of installing recombiners" is neither a Category A nor Category B item in Table B-1, licensee argues that it is not included in the short term or long term requirements of the Commission's order of August 9. Because of the reference to rule making, licensee argues that it was a studied omission. While this seems logical enough, there is also the requirements, noted above, that, as a Category B item, licensee must, in this adjudication, "review procedures and bases for recombiner use." This latter requirement would seem to bring some portion of the hydrogen gas control issue within the scope of this proceeding. However, on balance, we are uncertain as to whether the Commission intended to bar general litigation of hydrogen gas control issues in this proceeding in its order of August 9.

In our view the more important question is not whether the original hearing order authorized hydrogen gas control issues, but whether, in view of a request to litigate the issue by intervenors, the Commission now believes the issue to be appropriate for adjudication. The licensee's response to Mr. Sholly's petition makes several points against hearing hydrogen gas control issues in an individual litigation. They are concisely made, so there is no need for us to restate them. Response, pp. 6-12.

In sum, licensee avers that hydrogen gas control does not raise immediate safety concerns (p. 6); that the solution to the problem has yet to be developed and analyzed (pp. 7, 8); that it is a generic problem which can be handled more efficiently and thoroughly by rulemaking (p. 9);¹⁴ that requiring adjudication of the issue would be discriminatory (pp. 9, 10); and that the matter is not being ignored (pp. 10, 11).

Other considerations, however, favor some form of adjudication of the issue. Licensee asserts that the hydrogen gas control problem does not present an immediate safety concern. This allegation may have support in the referenced staff reports but it has not been established as fact in this adjudicative proceeding. Hydrogen gas control was widely perceived to be an important problem during the accident. If the licensee and the NRC task force have since concluded that the original perception of hydrogen problems was incorrect, the intervenors and the members of the public affected by the restart of TMI-1 have a legitimate interest in exploring the basis for that conclusion. At the least the staff and the licensee should be required to demonstrate that TMI-1 can be operated safely in the face of a still unresolved generic hydrogen

¹⁴ Licensee cites legal authority supporting the use of rulemaking for generic issues including *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 84 (1974). However licensee does not assert that the staff's recommendation for rulemaking on recombiners in itself bars this board from considering the issue. See Licensee's Response to NRC Staff Brief on the Effect of Rulemaking, p. 9, attached.

gas control problem. See *Gulf States Utility Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 774-75 (1977); *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245, 247-8 (1978).¹⁵

We do not dispute licensee's argument that the hydrogen gas control problem can be resolved more efficiently and more reliably in a generic proceeding. Certainly within the time frame anticipated for the TMI-1 restart proceeding, this board cannot easily include a thorough and measured adjudication of the entire hydrogen gas control problem. But we do not see rulemaking to be necessarily inconsistent with addressing the subject adjudicatively. Mr. Sholly has demonstrated competence on technical nuclear matters. The Union of Concerned Scientists should be able to supply expertise on the subject. These intervenors may have the capacity to contribute to the resolution of the problem. Even so, if the Commission directs consideration of hydrogen gas control in this proceeding, the board should be constrained to accept appropriate generic resolutions.

Expanding the issue to adjudication would provide the forum to determine whether prospective generic resolutions are valid when applied to TMI-1. Therefore, we recommend that, if the Commission directs the board to adjudicate specific hydrogen gas control issues, the board also be directed to accept appropriate generic resolutions if they overtake the proceeding. If there is substantial and reliable evidence that the special circumstances of TMI-1 require an exception to the generic resolution, that question should be especially certified to the Commission.¹⁶

In our First Special Prehearing Conference Order dated December 18, 1979, we authorized discovery to commence on the hydrogen gas control contention despite the fact that the issues require Commission guidance. This was in part to avoid needless delay in the proceeding in the event litigation of the issues is authorized. Also, by permitting discovery to proceed now, the board intended to preserve for the Commission the option to defer ruling on these certifications until the record of the whole proceeding is certified to the Commission for final decision. In other words, the Commission, before the hearing, could summarily authorize the board to develop an evidentiary record on whether 10 CFR 50.44 should be waived, and if so whether hydrogen gas control factors should be considered in the Commission's final decision on restarting TMI-1. The Commission could then rule upon the instant certifications when the board certifies the evidentiary record and its initial decision to the Commission.

¹⁵ In *Consumers Power Company* (Midland Plant, Units 1 and 2), (unpublished Memorandum and Order dated November 6, 1978, p. 6, n. 14), the Commission was specifically careful not to disturb the Appeal Board's *River Bend* decision on unresolved generic safety issues.

¹⁶ The Commission's Order and Notice of Hearing of August 9 provides for Commission review of any decision authorizing resumption of operation. *Id.*, p. 14. The question of special circumstances *vis-a-vis* generic solutions will in any event remain within the direct control of the Commission.

Certified Questions

Accordingly, the board certifies to the Commission the following questions:

1. Whether the provisions of 10 CFR 50.44 should be waived or exceptions made thereto in this proceeding where a *prima facie* showing has been made under 10 CFR 2.758 that hydrogen gas generation during the TMI-2 accident was well in excess of the amount required under 10 CFR 50.44 as a design basis for the post-accident combustion gas control system for TMI-1.
2. Whether post-accident hydrogen gas control should be an issue in this proceeding where post-accident hydrogen gas control was perceived to be a serious problem and was in fact a problem during the TMI-2 accident.

Pursuant to the provisions of the Commission's Suspension of 10 CFR 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings dated November 5, 1979, the board identifies the subjects discussed in these certifications as aspects of the proceeding which present issues on which prompt Commission guidance is called for.

Respectfully submitted,

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Walter H. Jordan, Member

Linda W. Little, Member

Ivan W. Smith, Chairman

Dated at Bethesda, Maryland,
this 4th day of January, 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

DAIRYLAND POWER
COOPERATIVE

(SEP License
Amendment)

(La Crosse Bolling
Water Reactor)

January 10, 1980

The Licensing Board (1) grants Applicant's and Staff's motions for summary disposition and, after considering various matters *sua sponte*, authorizes issuance of an amendment to the facility's provisional operating license to permit expansion of capacity of the spent fuel pool, subject to certain conditions; and (2) refers its ruling on its jurisdiction to consider the issue of "need for power" to the Appeal Board for review.

NEPA: CONSIDERATION OF ALTERNATIVES

Section 102(2)(C)(iii) of NEPA requires consideration of alternatives in impact statements. It is only applicable in situations where an impact statement must be prepared, *i.e.*, where there is a proposed Federal action "significantly affecting the quality of the human environment." 42 U.S.C. Section 4332(2)(C)(iii).

NEPA: CONSIDERATION OF ALTERNATIVES

Section 102(2)(E) of NEPA requires consideration of alternatives regardless of whether a proposed Federal action involves significant environmental impacts. Its applicability depends upon there being a "proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. Section 4332(2)(E).

NEPA: NEED FOR ENVIRONMENTAL REVIEW

Although a project may have been authorized prior to the enactment of NEPA, subsequent Federal involvement in the project, by way of approving changes, may trigger the need for an environmental review — even though the impacts of the change will be less adverse, or at least no more severe, than those approved earlier.

NEPA: NEED FOR POWER

Need for power may be demonstrated by, among other means, (1) the obligation of a utility to satisfy power demands in its service area, including meeting the reserve margin requirements of power pools in which it is a participant; (2) the “substitution” theory, *e.g.*, that the operation or availability of a given plant will enhance system reliability by lessening an existing dependence of the utility upon scarce fuels such as oil or gas; and (3) the satisfaction of energy requirements currently being met directly by scarce fuels. A conglomeration of benefits may be considered collectively to determine whether there is need for a facility.

NEPA: NEED FOR POWER

The “economic facts of life” which the nation may be experiencing, both as a matter of extrinsic circumstances and governmental policy, are relevant to a determination of need for power.

NEPA: NEED FOR POWER

Given a utility’s responsibility to provide adequate and reliable service to all its consumers at all times, the most that can be required of the utility’s forecast of future electric power demands is that it be a reasonable one in the light of what is ascertainable at the time made. *Kansas Gas and Electric Company* (Wolf Creek Station, Unit 1), ALAB-462, 7 NRC 320, 328 (1978), *aff’d per curiam, Mid-America Coalition for Energy Alternatives v. NRC*, 590 F.2d 356 (D.C. Cir. 1979).

NEPA: CONSIDERATION OF ALTERNATIVES

Given the difference in environmental impacts between operating and not operating a plant, financial costs are a relevant factor to consider in selecting between those two alternatives.

TECHNICAL ISSUES DISCUSSED: Expansion and operation of spent fuel pool; need for power.

INITIAL DECISION

Appearances

Messrs. O. S. Hlestand, Jr. and Kevin P. Gallen, Washington, DC, for Dairyland Power Cooperative, Applicant

Mr. Robert H. Owen, Jr., Madison, WI, and **Messrs. George R. Nygaard, Mark Burmaster, and Ms. Anne K. Morse,** La Crosse, WI, for the Coulee Region Energy Coalition, Intervenor

Ms. Colleen Woodhead and Messrs. Richard J. Goddard and Edwin J. Reis, for the Nuclear Regulatory Commission Staff

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Appendix A. List of Exhibits
Appendix B. Approved Transcript Corrections

I. INTRODUCTION AND BACKGROUND

This proceeding involves the application of Dairyland Power Cooperative (Applicant or DPC) for an amendment to Provisional Operating License No. DPR-45 to permit the expansion of the capacity of the spent fuel storage pool (SFP) at the La Crosse Boiling Water Reactor (LACBWR), a nominal 50 MWe reactor located in Genoa, Vernon County, Wisconsin. The Applicant submitted its application for the amendment by letter dated April 20, 1978, which has been supplemented subsequently by a number of other filings. On May 25, 1978, the Commission published a Notice of Opportunity for Hearing on the proposed amendment (43 Fed. Reg. 22462).

Another proceeding involving LACBWR is progressing simultaneously with this spent fuel pool expansion proceeding. This reactor was initially constructed as a demonstration project by the United States Atomic Energy Commission under the cooperative power reactor development program. It was licensed to operate in July, 1967, while still owned by the AEC (with operating authority first granted to Allis Chalmers and thereafter, on October 31, 1969, transferred to Dairyland). Later, ownership was transferred to Dairyland, which received a provisional operating license (with a term of 18 months) in 1973 (Tr. 253).¹ On October 9, 1974, prior to the expiration of that license, the Applicant sought to convert its provisional license to a full-term operating license. Pursuant to 10 CFR 2.109 (which parallels a similar provision in the Administrative Procedure Act, 5 U.S.C. Section 558(c)), the provisional license remains in effect until a final NRC determination on the full-term license is rendered. The Notice of Opportunity for Hearing on that license application was not published until April 10, 1978 (43 Fed. Reg. 15021), about a month prior to the publication of the notice concerning the spent fuel pool expansion proceeding.

Petitions for leave to intervene were received in each of the proceedings. The Commission established the same Licensing Board to consider both sets of petitions and, thereafter, to conduct both hearings. 43 Fed. Reg. 21955 (May 22, 1978) (operating license); 43 Fed. Reg. 28261 (June 29, 1978) (operating license); 43 Fed. Reg. 30939 (July 18, 1978) (spent fuel pool expansion); 43 Fed. Reg. 34564 (August 4, 1978) (spent fuel pool expansion); 43 Fed. Reg. 37017 (August 21, 1978) (both proceedings); 43 Fed. Reg. 46911-

¹ Throughout this Decision, transcript references to the special prehearing conference and the evidentiary hearing shall appear as Tr. _____. Because of an error by the reporter, the transcript pages for the second prehearing conference include some of the same page numbers as the evidentiary hearing. Therefore, when referring to the second prehearing conference, we will designate the references as Pre. Conf. Tr. _____.

12 (October 11, 1978) (both proceedings).

This Decision primarily concerns the spent fuel pool expansion proceeding. The operating license proceeding will be discussed herein only to the extent it bears upon the matters at issue in the other license-amendment proceeding.

Timely petitions for leave to intervene in the spent fuel pool proceeding were filed by the Coulee Region Energy Coalition (CREC) and by Ellen Sabelko and David Simpson. By Memorandum and Order dated July 14, 1978 (unpublished), we granted CREC's petition, and a Notice of Hearing was thereafter published. 43 Fed. Reg. 34564 (August 4, 1978). (CREC previously had been admitted as a party to the operating license proceeding.) By Memorandum and Order dated August 14, 1978 (unpublished), we denied the Sabelko/Simpson petition. (The Appeal Board upheld that denial in ALAB-497, 8 NRC 312 (1978).) On August 17, 1978, we conducted a consolidated special prehearing conference with respect to both of the proceedings (Tr. 1-236).

At the consolidated conference, we granted the Applicant's request to proceed with the fuel pool expansion proceeding ahead of the full-term operating license proceeding. We ruled on various contentions offered for the spent fuel pool proceeding and discussed contentions relevant to the other proceeding (setting a framework for further negotiations among the parties with respect to the operating license contentions). See Prehearing Conference Orders, dated September 5, 1978 (unpublished).

We also set a preliminary schedule for the two proceedings, based on the assumption that the Staff's Safety Evaluation Report (SER) and Environmental Impact Appraisal (EIA) for the spent fuel pool proceeding, and the Final Environmental Statement (FES) for the operating license proceeding, would be available late in 1978 (Tr. 130, 149). The Applicant initially expressed the hope that its proposed license amendment could be acted upon by early 1979, so that construction work (if authorized) could be accomplished prior to the fuel loading scheduled for the spring of 1979. Under our preliminary schedule, we had expected that the spent fuel pool proceeding would go to hearing by December, 1978 or January, 1979, and that the environmental hearings in the operating license proceeding would follow shortly thereafter. We established discovery schedules for this proceeding with that timetable in mind. The SER and EIA were substantially delayed, until July, 1979, and the FES has still not been issued. (It is currently scheduled for the first quarter of 1980.) On March 8, 1979, the Applicant advised us and the parties that it had entered a one-time only arrangement with General Electric Company to ship a number of spent fuel assemblies to GE's Morris, Illinois facility for temporary storage pending the completion of this proceeding. That arrangement permitted LACBWR to continue operation until the next refueling date, scheduled for the spring of 1980 (Pre. Conf. Tr. 251-52).

All parties engaged in discovery efforts during the fall and winter of 1978. Shortly after issuance of the SER and EIA, the Staff (on July 30, 1979) and the Applicant (on July 31) filed motions for summary disposition of all of CREC's contentions and for dismissal of the proceeding. CREC filed no response to these motions. Notwithstanding that circumstance, we determined that there were significant unresolved questions to which certain of the contentions gave rise, as well as other matters which warranted our *sua sponte* inquiry. We scheduled a prehearing conference for September 20-21, 1979 (see 44 Fed. Reg. 50105, August 27, 1979) and, by Memorandum and Order dated September 7, 1979 (unpublished), we also set forth specific questions which we desired the Applicant and Staff (and CREC if it wished) to address.

The Applicant and Staff filed written responses to our questions; CREC did not do so. We discussed the contentions with the parties at the prehearing conference, in which the Applicant, the Staff, and CREC all participated. When specifically asked if they believed there were factual matters still in dispute that should go to hearing, the CREC representatives admitted that they had no factual information or even further arguments to offer (Pre. Conf. Tr. 256-258). We determined that summary disposition would be granted with respect to every CREC contention (Pre. Conf. Tr. 393) (but subject to certain conditions). Our ruling on these contentions appears in Part II of this Decision.

Prior to the second prehearing conference, on September 20, 1979, we took a tour of the spent fuel pool area of the plant. We announced our desire to take such a tour in our Notice of Prehearing Conference and Evidentiary Hearing, dated August 21, 1979 (published at 44 Fed. Reg. 50105, August 27, 1979). In that Notice, we requested the Applicant "to make arrangements for the Board and parties to participate in such a tour."

At both the special and second prehearing conferences, CREC was not represented by an attorney but rather by three of its members. At the time established for the tour, all three representatives appeared at the site to take the tour. The Applicant stated that an invitation was extended to only one of those representatives (whom it had selected) and that it would not permit the two other members to take the tour, for both space and security reasons. (The spent fuel pool at LACBWR is inside the containment building.) The Intervenor objected, both on the basis of the limitation to one representative and on the Applicant's selection of that representative; but when the Board inquired whether another of the three representatives wished to take the tour, the Intervenor indicated they would only participate in the tour if all three representatives could do so.

The Applicant indicated that it selected the particular representative because that person had been the one with whom it had dealt most frequently in its contacts with CREC. The Applicant also cited 10 CFR 73.55(d)(7), which provides that "[a]ccess to vital areas for the purpose of general

familiarization and other non-work-related activities shall not be authorized except for good cause shown to the licensee.” The Applicant expressed its understanding that the purpose of inviting all parties on the tour was to prevent the appearance of *ex parte* contacts and, given that purpose, “good cause” had been demonstrated only for the admittance to the spent fuel pool area of the selected individual.

The Board upheld the Applicant in this regard. All parties were invited on the tour, not for discovery purposes, but to avoid any appearance of *ex parte* contacts proscribed by 10 CFR 2.719. Given the Applicant’s primary responsibility for the security of its facility, its selection of only one of the Intervenor’s representatives to accompany the tour was not unreasonable.

Faced with our decision to uphold the Applicant in this matter, the Intervenor’s selected representative declined to participate in the tour. To facilitate our desire to avoid the appearance of any *ex parte* contact, the Applicant invited an individual not associated with any of the parties to accompany the group, and he did so. (This individual was the Assistant Lockmaster of the Corps of Engineers Lock and Dam No. Eight, a U. S. Government employee.)²

At the prehearing conference, we determined that there should be an evidentiary hearing on one issue: the need for the power to be produced by LACBWR prior to the completion of the Commission’s environmental review of the full-term operating license (Pre. Conf. Tr. 393-94). As will be described in greater detail later in this Decision, we were motivated in this ruling in large measure by claims made in limited appearance statements at that prehearing conference, to the effect that LACBWR was both unreliable and expensive as a source of electricity and that to permit the spent fuel pool expansion to take place would amount to “throwing good money after bad.” The Applicant and Staff claimed we had no jurisdiction to consider that issue. We rejected those claims (Pre. Conf. Tr. 403, 406-12; Tr. 278-81) but indicated that we would afford the parties a further opportunity to brief the jurisdictional question. We also determined that, because of the schedule sought by the Applicant for performing construction activities, it would be necessary for us to hold the hearing expeditiously in order to permit us to rule in time to accommodate the Applicant’s proposed schedule. We thus permitted the parties to brief the jurisdictional question simultaneously with the filing of their proposed findings and conclusions. On October 3-6, 1979, we held a four day evidentiary hearing on the need-for-power question.³ The Applicant, CREC, and the Staff each filed proposed findings of fact and conclusions of law on the

² Details concerning the arrangements for the plant tour are set forth at Pre. Conf. Tr. 241-249 and 385-388.

³ Notice of this hearing was published at 44 Fed. Reg. 50105 (August 27, 1979) and modified at 44 Fed. Reg. 56066 (September 28, 1979).

testimony taken at the hearing. The Applicant filed a response to the other parties' findings, as it was permitted to do. The Applicant and Staff also filed briefs on our jurisdiction to consider the "need-for-power" issue. The basis for our jurisdictional ruling, which we here reaffirm, is set forth in Part III of this Decision; our findings on the "need-for-power" issue appear in Part IV.

During the course of this proceeding, we heard limited appearance statements at the special prehearing conference, the September, 1979 prehearing conference, and the evidentiary hearing itself. We provided the Applicant and Staff an opportunity to respond to the questions raised (Pre. Conf. Tr. 370-85). The evidentiary hearing itself — and this decision — constitute responses to questions raised concerning need for the LACBWR facility.

For the reasons hereinafter set forth, we conclude that expansion of the spent fuel pool at LACBWR should be authorized, subject to certain conditions. In addition, as we previously advised the parties, we are referring our ruling on our jurisdiction to consider the "need-for-power" issue (as set forth in Part III of this Decision) to the Appeal Board for its review.

II. MOTIONS FOR SUMMARY DISPOSITION AND BOARD QUESTIONS

The Staff's motion for summary disposition of CREC's contentions was supported by the affidavits of Dr. John R. Weeks, Leader of the Corrosion Science Group in the Department of Nuclear Energy at Brookhaven National Laboratory;⁴ Millard L. Wohl, a nuclear engineer in the Commission's Environmental Evaluation Branch, Division of Operating Reactors;⁵ Dr. Jack N. Donohew, a Senior Nuclear Engineer in the same branch;⁶ and Robert G. LaGrange, an Applied Mechanics Engineer in the Commission's Engineering Branch, Division of Operating Reactors.⁷ The Applicant's motion for summary disposition was supported by the affidavit of Dr. Seymour J. Raffety, a Reactor Engineer employed by the Applicant.⁸

As we indicated previously, CREC failed to respond to the Staff's or Applicant's motions. Nonetheless, we propounded a number of questions to the parties arising in part from CREC's contentions and in part from our own exploration of the Applicant's proposal and the Staff's review of that proposal in the SER. The Applicant and Staff each provided answers to our questions.

⁴ Weeks, Affidavit I (dated July 16, 1979).

⁵ Wohl, Affidavit (dated July 24, 1979).

⁶ Donohew, Affidavit I (dated July 24, 1979).

⁷ LaGrange, Affidavit (dated July 10, 1979).

⁸ Raffety, Affidavit I (dated July 31, 1979).

The Applicant's answers were supported by the affidavits of Dr. Raffety,⁹ Alfred H. Yoli, the Vice President of Engineering of Nuclear Energy Services,¹⁰ and Robert J. Prince, a Radiation Protection Engineer with the Applicant.¹¹ The Staff's responses were supported by affidavits of Dr. Weeks,¹² James Shea, the LACBWR project manager within the Commission's Division of Operating Reactors,¹³ and Dr. Donohew.¹⁴

At the second prehearing conference, we further discussed the motions and the responses to our questions with the parties. We indicated that we were granting summary disposition with respect to each contention (Pre. Conf. Tr. 393). In Section II.B of this Decision, we set forth our reasons for doing so. To the extent that answers to the Board's questions bear on our rulings on various contentions, we will discuss the answers in that context. We also there discuss answers to Board questions not arising out of the contentions.

A. A brief description of the reactor and spent fuel pool (SFP) follows to set the stage for our subsequent discussion and findings concerning the contentions themselves and the supplementary Board questions.

The reactor is a nominal 50 MWe boiling water reactor located in the cavity of a cylindrical biological shield. The spent fuel pool is outside but immediately adjacent to the biological shield. A short fuel transfer canal connects the pool with the reactor cavity. The top of the biological shield, transfer canal and SFP are all at the same level. All three, along with the plumbing and equipment necessary to cool the SFP water, are located within the cylindrical containment building. A large tank under the containment building dome contains emergency coolant water.

The LACBWR contains 72 fuel assemblies using fuel rods clad with stainless steel. Each fuel assembly nominally includes 100 rods, arranged in a 10 x 10 array. EIA, Staff Exh. 1A, Section 4.1. During normal refueling, about one-third of the core is removed from the reactor, stored in the spent fuel pool, and replaced with fresh assemblies. The period between refueling normally ranges from 12 to 18 months. Occasionally, it may be necessary or desirable to remove the complete core and transfer all 72 assemblies to the SFP.

The SFP is 11' x 11' square and about 42 feet deep. The pool walls and floor are reinforced concrete lined with stainless steel. Currently, the SFP racks can accommodate 134 spent fuel assemblies, which are normally covered by 12 feet of water (LaGrange Affidavit, p. 2). With the proposed new

⁹ Raffety, Affidavit II (dated September 19, 1979).

¹⁰ Yoli, Affidavit (dated September 19, 1979).

¹¹ Prince, Affidavit (dated September 19, 1979).

¹² Weeks, Affidavit II (dated September 13, 1979).

¹³ Shea, Affidavit (dated September 17, 1979).

¹⁴ Donohew, Affidavit II (dated September 18, 1979).

racks, some 440 assemblies can be accommodated, and a proposed technical specification (Staff Exh. 1B, Section 2.12.5) requires the fuel to be covered with at least 16 feet of water. The new racks are of an egg crate design fabricated of stainless steel, placed within the pool by the crane, and supported by the pool floor. The new racks will be a replacement for the old racks. A 3/8" stainless steel barrier plate will be provided on top of the pool floor liner under the rack structures to ensure that the existing liner will not be structurally damaged in the event of a cask drop accident (SER, Staff Exh. 1, Section 3.3, p. 8). There will be two racks with a 9 x 8 array of fuel storage locations and two racks with a 4 x 10 array. An upper tier of racks with the same capacity and configuration is supported by the lower tier. In addition to spent fuel, a portion of the pool floor is set aside for the storage of the spent fuel shipping cask and the core spray bundle used during refueling operations.

B.1. As accepted, CREC Contention 1 includes four separate subparts (1(b), 1(c), 1(d), and 1(f)). We will consider them separately.

a. Contention 1(b) states:

It is CREC's contention that the application to amend submitted by Dairyland Power is incomplete, as it does not address the following issues: Applicant has not discussed the long-term integrity of the various components of and in the spent fuel storage pool in light of the proposed compaction and increased amount of spent fuel at LACBWR. The health, safety, environmental, and economic impact of the loss of integrity of these components due to more dense and increased storage of spent fuel must be evaluated.

(b) Applicant should examine the effects of accelerated corrosion, microstructural changes, alterations in mechanical properties, stress corrosion, cracking, intergranular corrosion, and hydrogen absorption and precipitation by the stainless steel alloys due to the proposed compaction and long-term storage of spent fuel at LACBWR.

BASIS:

The NRC *Draft Generic Environmental Impact Statement On Handling and Storage of Spent Light Water Power Reactor Fuel*, NUREG-0404, Volume 2, March 1978, p. H-23 states that these corrosion effects in underwater spent fuel storage require examination.

All metallic components of the modified SFP will be fabricated of stainless steel, and LACBWR uses stainless steel clad fuel elements. However, some of the Applicant's documents, and the version of the Staff's SER and proposed technical specifications submitted to us on July 16, 1979, also discuss zircaloy

clad fuel.¹⁵ For example, in his affidavit in support of Applicant's motion for summary disposition, Dr. Raffety states (Affidavit I, p. 2) that there is a possibility that zircaloy clad fuel may also be used in the future. The Staff also refers to possible future use of zircaloy in spent fuel assemblies. Original SER at p. 8. Moreover, the original proposed technical specifications provided specifications for the storage of zircaloy as well as stainless steel clad fuel elements. On the other hand, however, the Staff argues in its motion for summary disposition (see p. 8) that the NUREG-0404 reference relied upon by the Intervenor to support this contention is "entirely irrelevant" since it discusses only zircaloy cladding not in use at LACBWR. See also Weeks, Affidavit I, p. 2. It was therefore unclear to us (and apparently to CREC) whether the proposed license amendment was intended to include authorization to store zircaloy clad fuel in the modified SFP. Furthermore, Dr. Weeks' affidavit can be read as suggesting that further study of changes resulting from corrosion in connection with the long-term storage of zircaloy clad rods might well be warranted (Weeks, Affidavit I, pp. 2-3). That being so, we posed several questions to clarify whether the instant license amendment was intended to authorize storage of zircaloy-clad fuel. See Board questions A.1-6, attachment to our Memorandum and Order of September 7, 1979.

Whatever DPC's original intention may have been, and for whatever reason the Staff chose to discuss it, the Applicant's response to the Board's question (at p. 12) and the Staff's response (Weeks, Affidavit II, p. 4; Shea Affidavit, pp. 1-2) indicate that zircaloy clad fuel cannot be stored in the SFP without a further license amendment. Moreover, the Staff included a new proposed technical specification which eliminated all reference to zircaloy clad fuel. See Specification 2.12.3, Staff Exh. 1B, and Shea Affidavit, p. 2. Still somewhat concerned about the significance of the revised technical specification, at the prehearing conference we asked the Staff whether or not zircaloy clad fuel could be stored in the SFP without an additional license amendment and, if not, whether a notice of such a proposed amendment would be published and an opportunity for hearing afforded. We were assured that the Applicant would indeed be required to apply for a license amendment to use or store zircaloy clad fuel and that it would be pre-noticed and an opportunity for hearing would be provided. The Staff also assured us that a license amendment would be required before zircaloy clad fuel could be brought in from another plant and stored in the modified SFP. Pre. Conf. Tr. 258-260. Whereas this may well be so, we are faced with the circumstance that the ambiguities with respect to zircaloy clad fuel were raised as a contention and had a basis which at least suggested that an authorization at this time to

¹⁵ The SER and proposed technical specifications introduced into evidence in this proceeding (Staff Exhibits 1 and 1B) were revised versions which eliminated all references to zircaloy (Tr. 885).

store zircaloy clad rods might not be appropriate. That causes us to impose a technical specification which will remove any ambiguities. To make it crystal clear that storage of any fuel other than stainless steel clad rods is not now being authorized, we require that the last sentence of the revised proposed Technical Specification 2.12.3 be modified to read:

Fuel stored in the storage well shall be restricted to fuel with stainless steel cladding and it shall have a U-235 loading ≤ 22.6 grams per axial centimeter.

As a result, this contention becomes moot to the extent that it is based on potential safety problems associated with the storage of zircaloy clad fuel in the SFP.

With reference to the corrosion resistance of stainless steel, Dr. Weeks of the Staff states (Affidavit I, pp. 2-6) that: (a) accelerated corrosion of stainless steel has not occurred in spent fuel pools, nor is likely to occur at SFP temperatures, (b) microstructural changes as a result of corrosion do not occur in stainless steel so as to affect long-term integrity, nor do microstructural changes from solid state diffusion occur at SFP temperatures, (c) effects on the mechanical properties of the components of the SFP from fast neutron captures will be negligible, (d) intergranular stress corrosion cracking of the LACBWR fuel is unlikely and, even should it occur, would be localized and thus of insignificant safety concern, and (e) hydrogen absorption and precipitation do not occur on stainless steel at SFP temperatures. Dr. Seymour Raffety for DPC (Affidavit I) corroborated Dr. Weeks' assessments and emphasized that predicted material behavior, empirical evidence, and industrial operating experience to date all indicate that the occurrence of significant degradation of spent fuel components of the type proposed for use at LACBWR is extremely unlikely. At no time did Intervenor present any information (other than the cited basis, above) contrary to the Staff's or Applicant's affidavits. Nor does the Board know of any reason to question them, or to believe that the long-term integrity of the various components of or in the SFP will be compromised by corrosion. Therefore, the Board finds no genuine issue of material fact to be heard with respect to this contention.

b. Contention 1(c) states:

- (c) Because of the possibility of leakage and disintegration of spent fuel and its cladding over the long-term, Applicant must discuss the desirability of and methods for sensitivity monitoring to identify defective fuel elements.

BASIS:

In Behavior of Spent Nuclear Fuel in Water Pool Storage, September 1977, Battelle North West Laboratories [sic] established on p. 76 the

need for selected, focused, exploratory surveillance at present to confirm wet storage as an option and to define the condition of pool-stored spent fuel when removed to any alternative storage or to a reprocessing plant.

Applicant must also analyze the desirability of monitoring each individual spent fuel assembly.

Dr. Raffety (Affidavit I) states that: (a) DPC tests all fuel assemblies to determine their integrity prior to placing them in the pool, (b) DPC monitors radioactivity in the pool water, and (c) visual inspection will be conducted whenever fuel assemblies are moved for other purposes. He concludes that, in light of industry's extensive experience with the storage of irradiated fuel assemblies in water for long periods of time indicating that significant degradation does not occur in storage, and Dairyland's own prior experience with storage of the LACBWR fuel, additional monitoring is not warranted. In the Staff affidavit, Dr. Weeks summarizes the experience reported in the Battelle Northwest report BNWL-2256 cited by the Intervenor. Therein, no evidence of degradation of spent fuel during pool storage times of up to 12 years was reported for stainless steel clad fuel. Weeks, Affidavit I, at p. 6. Again, the Intervenor offered nothing to the contrary. Therefore, the Board finds no genuine issue of material fact warranting a hearing on this contention.

c. Contention 1(d) states:

(d) Applicant should discuss the desirability of and various methods and effectiveness of encapsulating defective spent fuel elements upon discovering leakage or disintegration due to loss of cladding integrity. This discussion is essential when considering longer-term storage and increased density of spent fuel at LACBWR. Applicant should delineate anticipated thicknesses of crud layers and crud tendency to influence corrosion of spent fuel and its cladding in light of increased spent fuel storage as proposed for LACBWR.

For the same reasons we expressed in connection with Contention 1(c), we find that fuel element degradation due to longer term (or more dense) storage in the modified SFP is highly unlikely. Furthermore, in his affidavit for the Staff, Dr. Weeks points out (Affidavit I, p. 9) that crud deposits on the surface of fuel elements occur during the operation of the reactor, not during storage of the fuel, and that there is no evidence that these crud deposits influence the corrosion of stabilized stainless steel such as Type 343H with which LACBWR fuel is clad. Consequently, Dr. Weeks concludes that there is no need for encapsulating defective fuel elements before placing them in the SFP. On the basis of the Intervenor's responses to DPC's interrogatories as cited on page 7 of the Applicant's motion for summary disposition, DPC concludes

that CREC has no factual information tending to support this contention. For these reasons, we find that the possibility or desirability of encapsulation is not a subject meriting a hearing in this proceeding.

d. Contention 1(f) states:

- (f) Applicant should analyze problems in handling spent fuel (e.g., including but not limited to transfer from one pool to another or within one pool during reracking, repositioning upon removal from the nuclear core and placement in spent fuel pools, encapsulation of defective spent fuel elements, placement in or removal from shipping casks), resulting from loss of integrity of spent fuel and its cladding as well as other components of and in the spent fuel storage pool due to more dense and increased storage of spent fuel as proposed by applicant.

Mr. Wohl states in his affidavit for the Staff (page 2) (a) that procedures for handling damaged fuel at LACBWR are the same as those used for handling normal fuel, (b) that operational experience has shown these to be adequate, and (c) that when a fuel element was seriously damaged previously during transfer, the problem was handled safely. In addition, we note that both the Applicant and Staff state that the fuel failure problems which heretofore existed have been effectively addressed and that the significant fuel failures which occurred are unlikely to recur (Raffety, Affidavit I, p. 12; Wohl Affidavit, p. 2; Donohew, Affidavit I, p. 12). In the absence of contrary information from the Intervenor, and on the basis of facts summarized above for parts b, c, and d of Contention 1, the Board finds insufficient basis in material fact to warrant a hearing on this contention.

2. Contentions 5(a), (b)(1), and (b)(2) state:

It is CREC's contention that an increase in the number of spent fuel locations from 134 to 448 would present a threat to the safety of the public and the maintenance workers that would be completely unacceptable for the following reasons:

- (a) The design calls for an even smaller cask drop area.¹⁶
- (b)(1) The two-tier design greatly increases the chances for, and potential magnitude of, accidents in fuel handling and storage.
- (b)(2) The two-tier and higher—density design makes detection of problems in the lower tier difficult if not impossible.

¹⁶ Since Contention No. 5(a) is subsumed within Contention No. 6, this portion of Contention No. 5 will be addressed in the section of this Initial Decision dealing with Contention No. 6.

a. Contention 5(b)(1). The Board agrees with the Intervenor that the two-tier SFP design increases the chances for fuel handling accidents. From the brief description of how fuel elements and racks will be maneuvered during the SFP modification alone (SER Section 3.7), it is clear that many more fuel element movements will be made than would otherwise have been necessary. We further believe that there is at least the possibility that the consequences could be greater in the event one freshly discharged fuel element is dropped directly on another freshly discharged element which is stored in an upper rack position directly above still another freshly discharged fuel element. See Board question B, pp. 3-4 of the attachment to our September 7 Memorandum and Order. In response to this question, the Staff states that the fission product release and consequent dose could be 50% higher under such circumstances but would still be less than the guidelines of 10 CFR Part 100. Moreover, the Staff gives reasons for its belief that its analysis of a fuel handling accident involving freshly discharged elements is conservative. See SER Section 3.6.1. For example, it is assumed that the containment building is not isolated at the time of or following the postulated accident. The Staff states that if the containment building were isolated shortly following an accident, as would automatically occur upon a signal from installed radiation monitors or by operator action, the calculated dose would be substantially reduced. See Donohew, Affidavit II, p. 6.

Thus, while we agree with the Intervenor that the chances for and potential consequences of fuel handling accidents are greater with the proposed two-tier design, we also find that even under very conservative assumptions, the estimated dose falls within the guidelines of 10 CFR Part 100. From the standpoint of design of the SFP and related components, the Commission's requirements thus appear to be satisfied.

Notwithstanding this conclusion, it appeared to the Board that the potential consequences of a fuel handling accident might call for an enhanced emergency plan. These consequences were stated to be 162 rem to the thyroid and 2 rem to the whole body at the exclusion area boundary, assuming freshly discharged elements were not stored over other freshly discharged elements, and greater if a freshly discharged element were stored over another such element. SER, Section 3.6.1. The enhanced plan might be founded upon the Environmental Protection Agency's "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," dated September, 1975 (EPA-520/1-75-001), Tables 2.1 and 2.2, which recommends evacuation of other protective action where the exposure to the individual is 1-5 rem whole body and 5-25 rem thyroid. We thus posed questions in order to ascertain whether the Applicant's emergency plan was sufficient to provide evacuation of other protective action at the EPA-recommended levels.¹⁷

¹⁷ The EPA levels are being used by the States of Wisconsin and Minnesota. Shea Affidavit, p. (Continued on next page)

The responses to our questions indicated that, in the event of a maximum fuel handling accident at LACBWR, and using both the conservative assumptions appropriate for Part 100 determinations and the realistically calculated exposure-level determinations appropriate for EPA evaluations, the maximum exposures at the LPZ boundary are less than the EPA exposure guidelines (Donohew, Affidavit II, p. 4; Prince, Affidavit, p. 14), assuming freshly stored fuel elements are not stored over other freshly stored elements. If freshly stored elements are stored over other freshly stored elements, the potential consequences of a fuel handling accident exceed EPA levels at the exclusion area boundary (243 rem thyroid, 3 rem whole body, for a 2 hr. exposure, according to the Staff; 162 rem thyroid, 2 rem whole body, according to the Applicant). But the Applicant and Staff each indicate that the Applicant's Emergency Plan specifies protective action where EPA guideline levels are exceeded (Donohew, Affidavit II, p. 5; Prince Affidavit, p. 14). That being so, we find currently applicable evacuation standards to be satisfied and no issue of material fact concerning this contention remaining to be litigated.

b. Contention 5(b)(2). Unchallenged by CREC, both the Staff and Applicant state that problems in fuel stored in the lower tier of the proposed new racks can be detected and the elements inspected by television. See Raffety, Affidavit I, pp. 7, 10 (Applicant) and LaGrange Affidavit, pp. 1-2 (Staff). While detection and inspection appear to the Board to be more difficult, we find no evidence that it cannot be done as Intervenor contends and no reason to hear further evidence on this contention.

3. Contention 5(c) states:

- (c) The two-tier design reduces the level of water over the assemblies from ten feet [sic] to thirty inches, and thus reduces the margin of safety so far as loss-of-coolant accidents in the SFP are concerned, to an unacceptable level.

In responding to Contention 5(c), the Staff pointed to proposed Technical Specification 2.12.5, which provides that the water level in the SFP "shall be at least 16 feet above any fuel stored" in the storage racks (with a depth of about 23 feet during core refueling operations). It contrasted this proposed

(Continued from previous page)

4; Prince Affidavit, p. 15; Pre. Conf. Tr. 282-83. A joint NRC-EPA task force has recommended that the EPA Protective Action Guides be utilized for emergency planning purposes (NUREG-0396, December 1978), and the Commission recently endorsed the concepts in that report. 44 Fed. Reg. 61123 (October 23, 1979). Moreover, the Commission is in the process of upgrading its emergency planning rules (see 44 Fed. Reg. 75167, December 19, 1979) and, for the interim, has decreed that special attention be given to emergency planning matters. Although the latter direction focuses on construction permit and operating license proceedings, we note that, in evaluating a proposed amendment such as this, we are to be "guided by the considerations which govern the issuance of initial licenses . . . to the extent applicable and appropriate." 10 CFR 50.91.

requirement to the present situation, where water level is maintained at 12 feet (Affidavit of Robert G. LaGrange, page 2). The Applicant referred to the same requirement.

The water level over the spent fuel affects the degree of occupational exposure received by workers. In our questions to the parties, and at the prehearing conference (Pre. Conf. Tr. 270-274), we inquired whether there would be occupational exposure differences if the SFP were kept full (*i.e.*, at a 700 foot elevation). In its response, the Staff indicated that, although the dose rate from the fuel would be lowered if the pool were full, the dose from radionuclide concentrations in the SFP water would increase, as would leakage. Donohew, Affidavit II, pages 10-11. The 16-foot level was described by the Applicant as an optimum point where the lessening of activity from spent fuel assemblies was not offset by the increase in radiation associated with the shorter distance between the surface of the water and the location of workers (and thus the greater dose rates to workers from radioactive contaminants in the water) (Pre. Conf. Tr. 274).

The Board finds that the proposed Technical Specification 2.12.5 adequately responds to the question posed by Contention 5(c). Its provisions should be incorporated into the Applicant's license. In addition, we note that nothing in that technical specification precludes raising the water level up toward the 700-foot elevation if it turned out to be beneficial in terms of lowering of the overall dose rate to workers (*ibid.*).

4. Contention 5(d) states:

- (d) Increased fuel would increase maintenance exposures because of an increase in the number of filter changes and resin volumes and intensities.

The additional annual occupational dose resulting from operating the enlarged capacity pool is estimated to be 1.5 man-rem or less. This is less than 1 percent of the average total occupational exposure at the plant and should not affect the licensee's ability to maintain individual occupational exposures as low as reasonably achievable (ALARA) and within the limits of 10 CFR Part 20. Donohew, Affidavit I, p. 7; Raffety, Affidavit I, p. 10. In the absence of any information to the contrary from CREC or elsewhere, the Board finds that there is no issue of material fact to be heard under this contention.

5. Contention 6 states:

CREC contends that a significant increase in the SFP capacity and the resultant increase in spent fuel handling necessitated by Applicant's proposed amendment increases the risk of accidental releases to employees and the public in the event of a cask drop accident to an unacceptable level.

The potential consequences of accidentally dropping a spent fuel cask onto fuel elements stored in the SFP has been analyzed by the Staff. Due to fission product decay, only fuel recently removed from the reactor would significantly contribute to the radiological consequences of such an accident. The Staff's analysis assumes that a full core has been removed from the reactor, placed in the pool, and that all these elements are damaged by the accidental cask drop. New technical specifications require isolation of the containment if the shipping cask is moved over or near the SFP within 43 days following a normal discharge of 24 fuel elements or within 51 days if the full core is discharged. On this basis, the Staff concludes that the potential consequences of a cask drop accident will be well within the exposure guidelines of 10 CFR Part 100 and therefore acceptable. See SER, Staff Exh. 1, Section 3.6.2; Raffety, Affidavit I, pp. 11-12; and Donohew, Affidavit I, pp. 7-8. In response to Board question D, the Staff also states that when the cask drop accident is analyzed in realistic terms the expected radiological consequences to an individual at the site boundary would be less than one rem thyroid dose. The population dose out to 50 miles would be less than 25 man-rem. These levels of exposure would not require protective actions under the EPA Protective Action Guides. See Donohew, Affidavit II, pp. 7-8. On the basis of information provided by the Applicant and Staff in support of their motions for summary disposition and in response to our own questions, and in the absence of any contrary information from CREC or elsewhere, we are satisfied that the cask drop accident has been adequately analyzed, that the potential consequences are within NRC and EPA guidelines, that the proposed new technical specifications are necessary, and that the consequences of a potential cask drop accident do not rule out the proposed modification to the SFP. Further, we find no basis for requiring a hearing on this contention.

6. Contention 7 states:

CREC further contends that Applicant's proposed amendment to its provisional operating license should be denied due to the increased threat to the environment generally, and to maintenance personnel specifically. The increased threat to which we refer is that of the storage of failed fuel rods, including several grossly failed rods, which results in a more dangerous and shortened storage life and increased storage costs. As stated in NUREG 0032, fuel failures "compound the problems of storage, waste reprocessing, and disposal." As fuel failures are predicted for the future, ACRS, January 26, 1978, p. 173, and expansion of SFP capacity would serve to produce even more unacceptable hazards and increase maintenance exposures at LACBWR, which is already above the average for the nuclear industry in that regard.

The Applicant and Staff provide thorough discussions in response to this contention in the affidavits accompanying their motions for summary disposition. See Raffety, Affidavit I, pp. 12-13, and Donohew, Affidavit I, pp. 8-14. Without further clarification from the Intervenor, we find nothing about this generalized or summary contention which enlarges the issues already covered previously (see, particularly, our discussion of Contention 1(f)). Thus, again, we find no controverted factual matters warranting a hearing on this contention.

7. Board question C states:

It appears from Section 3.6 of the SER that offsite doses for the fuel handling accident were calculated assuming that the containment building is not isolated. Is this the case? If so, how much would the offsite doses be reduced if the containment building were isolated (1) at the time of the accident, and (2) as soon thereafter as practically achievable. Please discuss whether containment building isolation should be required during fuel handling.

In response to this question, the Applicant and Staff state that, since the containment building is not normally isolated, fuel handling accidents were calculated assuming no containment isolation. In the event of an accident, the containment building would automatically isolate within seconds on a high radiation signal or by the operator on intercom notice from the fuel handling crew. Thus the actual off-site dose would be much lower than that calculated by the Staff. This being so, why should not all fuel transfer operations be conducted with containment isolated? The Applicant and Staff respond that, if they were, higher airborne concentrations would prevail inside the containment building, resulting in higher doses to fuel transfer workers. Additionally, as we also learned during our tour of the LACBWR facility, the humidity inside the containment would also rise to near saturation, thus creating a climate which (we speculate) could itself lead to hasty work and possibly increased risk of accident. Consequently, we have no inclination at this time either to require isolation during fuel handling or to require hearings to examine the matter further.

8. Board questions E and H relate to what we perceived as possible failures which might lead to a sufficient loss of pool cooling water to uncover fuel elements, followed by possible fuel melting and high fission product releases.

a. Board question E states:

From the material provided to the Board, we have been unable to determine the surface elevation of water on the reactor side of the fuel transfer canal gate under various conditions, e.g., during reactor

operation, during fuel transfer, and during shipping cask movements. Please provide this information. However, it now appears that water pressure on the fuel transfer canal gate will be higher for the new rack design and under the proposed new technical specifications. Moreover, it appears that the depth of water covering the new racks will be much less than for the existing design in case of a fuel transfer canal gate failure. If so, the Board questions why a gate or pressure vessel to cavity seal failure accident was not analyzed and discussed in the SER.

In response, the Applicant states that the surface elevation of water on the reactor side of the fuel transfer canal gate under various conditions is:

During reactor operations and shipping cask movement: no water in the reactor cavity or fuel transfer canal. Canal gate is closed. Water level in the pool is about 12 feet above the bottom of the transfer canal.

During fuel transfer: the gate is removed and the reactor upper cavity, transfer canal and SFP are filled essentially to the maximum possible level.

With this understanding in hand, it is clear that if the fuel transfer canal gate should fail completely during reactor operation when the reactor cavity is dry, the water level in the pool would drop about 14 feet so that the spent fuel in the upper tier would be covered by only about 3 feet of water. These elements would continue to be cooled but the shielding effect of the water above them would be drastically reduced and the dose rate at worker locations sharply increased. However, the gate is a one inch thick aluminum plate about 20 inches wide and 21 feet in height. It is sealed and bolted on the pool side of the 15 3/4 inch canal width. Water pressure at the bottom of the gate is 6-7 psig. DPC has tested the gate for leakage with the water level at the top of the SFP (or about 22 feet above the top of the fuel racks) without causing measurable leakage through the gate seals. Based on this information, we believe that the probability of a gate seal leak rate in excess of the pool make-up water fill rate is extremely low. Moreover, should this improbable accident nevertheless occur, we see no reason why the reactor could not be shut down and the upper reactor cavity, transfer canal, and pool refilled to the top, thus restoring shielding for workers above the pool. As a result of these considerations, we see no need for a hearing on this question at this time.

b. Board question H states:

Should the integrity of the fuel pool liner, walls, drain lines, and valves somehow be lost, it appears that fuel melting could occur which could result in large fission product releases. If so, what emergency provisions

are there to either prevent or limit melting or to mitigate the consequences?

Both the Applicant and Staff state that they consider a loss of integrity of the massive reinforced concrete walls and floor so improbable as to be incredible. The Applicant points out further that the pool and drain line have been analyzed and found capable of withstanding seismic events. Apparently on this basis, the Staff considers leakage from the pool to constitute a Class 9 accident. Therefore, it did not offer a detailed response to that part of our question relating to means of preventing or mitigating the consequences. Shea Affidavit, p. 8, and cover letter from Staff counsel to Licensing Board dated September 18, 1979.

For reasons immediately to follow, we do not believe it necessary to decide whether or not a loss of pool cooling water at LACBWR is properly characterized as a Class 9 accident at this time. We emphasize, however, that mis-operation or large leaks in pool cooling water lines, pumps and heat exchangers might also result in loss of sufficient pool water to cause fuel melting. While outside the envelope of the pool itself, these components nevertheless constitute part of the pool cooling water boundary.

In this respect, the Applicant states that two additional check valves are to be added in the pool drain line. It also states that water coverage of fuel could be maintained to the pool by gravity flow from the overhead storage tank and from other sources. Moreover, the Applicant claims that melting of uncovered fuel could occur only in the most recently discharged fuel. We are also reminded that any fission products released would be contained by the containment building. Raffety, Affidavit II, pp. 25-26.

We note further that the cask drop accident previously discussed assumed that a full core load of 72 elements was severely damaged and that the consequences fell within current siting criteria. We realize, of course, that the scrubbing action of pool water above the damaged elements would no longer be effective in the fuel melt accident we postulated. On the other hand, the cask drop accident analysis did not take credit for containment isolation.

For all these reasons, we find (a) that a loss of SFP water sufficient to uncover and cause melting is quite improbable, (b) that unlike the design basis LOCA, water temperatures and pressures are mild and any leakage would likely be so slow as to permit corrective action, (c) that there are several sources of make-up water, and (d) that containment isolation is available to minimize releases to the environment. Taking these considerations into account, we find no basis for exploring this hypothetical accident further through the hearing process.

We suggest, however, that, given the "lessons learned" from the Three Mile Island accident, it may not be appropriate for the Staff to continue to consider any loss of coolant water in the SFP which would result in fuel melting to be a Class 9 accident. It may be important to analyze, as the

Applicant has done here, means of preventing or mitigating the consequences of a loss of pool cooling water.

III. JURISDICTION TO CONSIDER NEED FOR POWER

A. The need for the power generated by LACBWR was initially raised by CREC as a matter to be resolved in the companion operating license proceeding, in terms both of the economic cost-benefit balance not favoring issuance of a full-term operating license and of the Applicant's failure to stress energy conservation programs which would obviate the need for LACBWR.¹⁸ At the special prehearing conference, however, CREC took the position that the operating license proceeding (or at least the environmental phase of that proceeding) should be considered prior to, or at the same time as, the spent fuel pool expansion proceeding (Tr. 11, 13, 73, 131, 143, 153). If that time sequence for considering issues had been adopted, we would not have been faced with the enigma of possibly authorizing a major license amendment without any inquiry as to whether the amendment (and the potential environmental and financial impacts brought about by such amendment, including those emanating from continued operation of the reactor) was in fact necessary or desirable. The inquiry would already have been undertaken, albeit as part of the operating license proceeding, and the answer there reached would also govern this proceeding. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 46 n. 4 (1978), *remanded on other grounds sub nom Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979).

The possibility that it might not be necessary to incur either the environmental impacts or the financial costs of the spent fuel pool expansion (to say nothing of the environmental effects of continued reactor operation) was strongly emphasized by those who made limited appearance statements at the second prehearing conference. See, e.g., Pre. Conf. Tr. 318-19, 327, 340-42, 346, 350, 363-64, 389, 392. The statements tended to undercut the conclusion in the EIA that, if expansion were not authorized and the reactor had to cease operation, there would be an extra expense to ratepayers for purchased power (EIA, Staff Exh. 1A, p. 13). Complaints were also expressed that the Applicant was unduly secretive with respect to the release of information about its operation. Pre: Conf. Tr. 318-19, 326, 328-31, 343-350-51.¹⁹ Furthermore, it was stressed that the operations of Dairyland, an

¹⁸ CREC Contentions 19 and 22. We formally accepted these contentions (which incorporated claims from certain of CREC's other contentions as initially submitted) by our Order of November 30, 1979 (unpublished).

¹⁹ We commend the Applicant's attorney for proposing to recommend to Dairyland that it undertake an informational program to keep the public better informed on developments at the plant. Pre. Conf. Tr. 374-75.

agricultural cooperative, were not subject to the oversight of the Wisconsin Public Service Commission; as a result, NRC was viewed as the only agency which could look at the need-for-power questions (Pre. Conf. Tr. 300-31, 317). Although these limited appearance statements are not evidence, and cannot be considered by us as such, they did raise a question as to whether further inquiry on our part might not be desirable. When, in responding to questions raised in the limited appearance statements, the Applicant and Staff failed even to allude to the need-for-power assertions,²⁰ we concluded that the questions raised were of sufficient importance to warrant elucidation on the public record.

Postponing the consideration of the need-for-power issue to the operating license proceeding would perhaps have been sufficient if, at the time of the prehearing conference, we had some assurance that this review could have been carried out shortly after the completion of the spent fuel pool proceeding. This had been our contemplation when, in 1978, we initially established the schedule for this license amendment proceeding. If that schedule could have been followed, the only risks to the public would have been the incurring of impacts (both environmental and financial) of carrying out the pool expansion prior to any review of the need for LACBWR.²¹ Further operation (at least to any significant extent) would not likely have occurred prior to the conclusion of the environmental review. But at the second prehearing conference, the Staff announced that the issuance of the FES had been delayed until the end of 1980, and that the reports which the Staff would issue in conjunction with its safety review of the full-term operating license would not be completed for two years — *i.e.*, until the fall of 1981 (Pre. Conf. Tr. 284). That would have resulted in the postponement of the evidentiary hearing on environmental matters until March or April of 1981 at the earliest (allowing at least 45 days for ruling on motions for summary disposition) and, under such schedule, a delay of the issuance of a partial initial decision on environmental matters until the summer of 1981. In other words, LACBWR would have been permitted to operate for over a year with the capacity of its spent fuel pool expanded before there would have been any complete review of the need for this facility.

Those circumstances shaped our perspective of the timing for consideration of the need-for-power questions. Instead of those questions being reviewed almost simultaneously with the spent fuel pool expansion, their consideration would not have been completed until more than a year after final action on the license amendment. Given our conclusion that the need-

²⁰ Prior to most of the limited appearance statements, the Applicant had made a brief one-sentence statement concerning increasing demand in its service area. Pre. Conf. Tr. 309.

²¹ As will be seen, the Staff in its EIA judged the environmental impacts of the pool expansion alone to be not great enough to affect significantly the quality of the human environment, and in this Decision we are accepting that evaluation (p. 100, *infra*).

for-power questions were of sufficient importance to warrant elucidation on the public record in the same time frame as our consideration of the spent fuel pool expansion, it became apparent to us that consideration of need-for-power should not be delayed in its entirety until the operating license hearing. We therefore determined that a hearing on some aspects of need for the power produced by LACBWR should be held at the earliest possible date, prior to the issuance of any authorization of expansion of the spent fuel pool.

It is true that, on October 29, 1979 — after the conclusion of the evidentiary hearing, and concededly as a result of urging by this Board (Tr. 976) — the Staff advised us and the parties that the FES is now scheduled for issuance early in 1980. We need not determine whether, if we had been aware of that schedule, we would nevertheless have ordered hearings on the need-for-power questions as part of the spent fuel pool expansion proceeding. Because those hearings have already been held, and because we conclude we have jurisdiction over such questions, we will proceed to make findings of fact and conclusions of law based on the evidentiary record before us.

B.1. In asserting that we lack jurisdiction to consider the need for LACBWR in the spent fuel pool expansion proceeding, the Applicant advances essentially three lines of reasoning. First, citing the Appeal Board's decision in *Prairie Island*, ALAB-455, *supra*, as well as a number of licensing board decisions, it claims that the issue of "need for power" (which it also characterizes as an "alternative to continued operation") has been ruled to be beyond the scope of this type of proceeding. Second, it asserts that we have failed to identify circumstances (within the meaning of 10 CFR 2.760a) which would permit us to consider an issue beyond the contentions raised by a party and admitted as issues in controversy into this proceeding. Finally, the Applicant claims that, even assuming we had authority to consider need for power, we abused our discretion by raising the issue at such a late date.

For its part, the Staff also claims that we have not fulfilled the regulatory requirements for considering issues beyond those raised by parties; it asserts that there are no significant environmental effects stemming from expansion of the capacity of the spent fuel pool (or, indeed, stemming from continued operation for three years) which would constitute a "serious" environmental matter, within the meaning of 10 CFR 2.760a. Further, it claims that the National Environmental Policy Act (NEPA), 42 U.S.C. 4321, is not retroactive and that an impact statement need not be prepared either with respect to continued operation of the facility (which began operation prior to the passage of NEPA) or with respect to a license amendment not engendering significant environmental impacts. In that connection, the Staff equates the performance of an environmental review with the preparation of an impact statement. It recognizes that where supplementary Federal actions are needed after the passage of NEPA to allow continuation of activities approved before the passage of NEPA, an environmental impact statement may be required;

but it contends that such requirement does not come into play "[w]here the supplementary action does not substantially change that which was originally authorized." (It lists four facilities licensed before the passage of NEPA where spent fuel pool expansion had been authorized without the preparation of an environmental impact statement.)

In addition, the Staff likewise relies on *Prairie Island*, ALAB-455, *supra*, for the proposition that the only environmental inquiry permitted is "whether the amendment still would bring about significant environmental consequences beyond those contemplated at the time of the grant" of the operating license. It further disclaims any intent to rely on the incremental decision-making as proscribed by cases such as *Scientists' Institute for Public Information (SIPI) v. AEC*, 481 F.2d 1079 (D.C. Cir. 1973).

Finally, the Staff claims that, under the Commission's regulations, no environmental weighing of the benefits of a proposed action is to be made unless it is first determined that the action either "significantly affects" the environment or "has substantial adverse environmental impacts" (and hence requires preparation of an impact statement). It cites a number of licensing board decisions which concluded that no cost-benefit balance or weighing of alternatives is required in the absence of a showing that a proposed action will have significant environmental impacts, and one Appeal Board decision which ruled that, in the particular circumstances, there was no necessity of searching out alternatives to actions not involving any such impacts. *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979).

2. We need not dwell long on the Applicant's argument that we abused our discretion (to the extent we might have had such discretion) by raising the need-for-power issue at a late date. We did not become aware of the potential magnitude of the problem and hence of the importance of the issue until we had listened to the limited appearance statements to which we previously referred. Nor did we know about the significant delay in the issuance of the FES until the September, 1979 prehearing conference. We acknowledge that we then set a rather expedited schedule for the evidentiary hearing on the need-for-power issue, but we were motivated by a desire to conclude our consideration of the spent-fuel-pool expansion in a time frame which (assuming approval of the amendment) would disrupt the Applicant's schedule as little as possible. We recognize the inconvenience which our scheduling may have imposed, but we do not regard such inconvenience as a valid reason for our eschewing consideration of an issue which we consider to be important. *Cf. Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), ALAB-124, 6 AEC 358 (1973).

3. Nor is there any merit to the Applicant's and Staff's claims that the circumstances permitting us to examine issues *sua sponte*, pursuant to 10 CFR 2.760a, do not exist. As we previously stated (Pre. Conf. Tr. 420), we

regard the need for LACBWR, in the context of the limited appearance statements touching upon and raising questions concerning such need, as a serious environmental matter, within the meaning of 10 CFR 2.760a. Indeed, if we view the issue (as the Applicant seems to do) as an exploration of the alternative of doing nothing, there are a number of judicial decisions which have indicated the importance of such exploration. *E.g., Environmental Defense Fund, Inc. v. Corps of Engineers*, 492 F.2d 1123, 1135 (4th Cir. 1974); *Trinity Episcopal School Corp. v. Romney*, 523 F.2d 88, 93 (2d Cir. 1975). We also regard the combination of circumstances surrounding this individual proceeding — in particular, the lack of any previous NEPA review of the question, the extended delay in the operating license review, the depth of feeling of those who expressed concern about NRC's authorizing an activity which produces both environmental and financial impacts without even inquiring as to whether the activity is necessary or desirable, and the claimed (and not controverted) lack of any forum other than NRC where that issue might be considered — as constituting “extraordinary circumstances” within the meaning of that section.²² We find these circumstances place the question we have raised well within the boundaries of the authority provided by 10 CFR 2.760a for us to raise issues *sua sponte*.

4. Both the Applicant and Staff rely on the Appeal Board's decision in *Prairie Island*, ALAB-455, *supra*, for the proposition that a licensing board has no authority to consider need for power (or the alternative of “doing nothing”) in a proceeding considering spent fuel pool expansion. The entire relevant part of that decision appears in footnote 4 and reads as follows:

Because the practical effect of not now increasing the capacity of the Prairie Island spent fuel pool would be that that facility would have to cease operation, the MPCA [intervenor] appears to believe that what is being licensed is in reality plant operation. Therefore, according to MPCA, the license amendment could not issue without a prior exploration of the environmental impact of continued operation and the consideration of the alternatives to that operation. (*e.g.*, energy conservation). We do not agree. *The issuance of operating licenses for the two Prairie Island units was preceded by a full environmental review, including the consideration of alternatives.* See LBP-74-17, 7 AEC 487 (1974), *affirmed on all environmental questions*, ALAB-244, 8 AEC 857 (1974). *Nothing in NEPA or in those judicial decisions to which our attention has been directed dictates that the same ground be wholly replewed in connection with a proposed amendment to those 40-year operating*

²² Effective November 30, 1979, the Commission deleted the “extraordinary circumstances” criterion of 10 CFR 2.760a. In doing so, it commented that the “amended rules eliminate an apparent constraint on boards as well as more accurately reflect current NRC adjudicatory board practice,” of which it indicated its approval. 44 Fed. Reg. 67088 (November 23, 1979).

licenses. Rather, it seems manifest to us that all that need be undertaken is a consideration of whether the amendment itself would bring about significant environmental consequences *beyond those previously assessed* and, if so, whether those consequences (to the extent unavoidable) would be sufficient on balance to require a denial of the amendment application. This is true irrespective of whether, by happenstance, the particular amendment is necessary in order to enable continued reactor operation (*although such a factor might be considered in balancing the environmental impact flowing from the amendment against the benefits to be derived from it*).

7 NRC at 46-47 (emphasis supplied).

A careful reading of this decision indicates that it is not applicable to the case at bar. Here, unlike in *Prairie Island*, there has not yet been a NEPA environmental review and, accordingly, there never has been an exploration of the need for the power produced by LACBWR or (in contrast) an examination of "doing nothing" and allowing the plant to shut down as a result. The *Prairie Island* holding is founded wholly upon the lack of any requirement in NEPA to re-examine matters which had been thoroughly considered in an earlier proceeding. (NEPA itself explicitly includes language designed to encourage the avoidance of "duplication of effort and expense." 42 U.S.C. 4345(2).)

The Applicant characterizes the dissimilarity between this proceeding and *Prairie Island*, to which we have just alluded, as "a classic case of a distinction without a difference." As grounds for that argument, it attempts to show that need for power has in fact been considered at an earlier date, so that the ruling in *Prairie Island* would indeed be applicable in the instant factual situation. It cites the 1962 LACBWR contract between Dairyland and the Atomic Energy Commission which provided, *inter alia*, that Dairyland was to purchase the plant if two conditions were met; namely,

1. The reactor plant 'can reasonably be expected to serve as a reliable source of steam to meet Nuclear Power Plant requirements while operating as a base load plant . . .,' and
2. The 'probable cost of energy produced . . . will not exceed the cost of energy that would otherwise be produced in a hypothetical new fossil-fuel power plant of comparable size and location'

Because the sale to Dairyland in fact was consummated, the Applicant asserts that these conditions must have been satisfied. It further asserts that the issuance of the provisional operating license to Dairyland was necessarily based "on the mutual recognition by DPC *and the Commission* that the reactor plant was economical and was needed to meet DPC's power needs."

We do not agree. The contractual conditions in question establish no more

than that the plant was considered at the time of transfer to be a reliable source of base load energy and the electricity it would produce would be no more costly than that from a new fossil fueled plant. The satisfaction of the two conditions — which for present purposes we will agree took place — in no way constitutes an exploration of whether the power produced by LACBWR were needed, much less a determination that it was needed.

Moreover, the agreement by two contracting officers concerning the two contractual provisions in no way can be deemed equivalent to a NEPA review. No impact statement was prepared; no public participation was solicited or permitted; the satisfaction of the two conditions was not open to review in either the construction permit (authorization) or provisional operating license proceedings. Indeed, both those proceedings predated the passage of NEPA (although the issuance of the provisional operating license did not occur until sometime after the passage of that Act). That being so, the conditions required by *Prairie Island* for obviating the NEPA review of benefits or alternatives in a spent fuel pool expansion proceeding are not present in this case, and *Prairie Island* (or its progeny) do not deprive us of authority to consider need for power in this proceeding.

The other Appeal Board and Licensing Board decisions cited by the Applicant or Staff are distinguishable on the same basis: none involved a situation where there had not previously been an environmental review of benefits and alternatives. *Trojan*, ALAB-531, *supra*; *Duquesne Light Company* (Beaver Valley Power Station, Unit No. 1), LBP-78-16, 7 NRC 811 (1978). Under the earlier *Prairie Island* ruling, there was no need in any of those proceedings to replot ground already covered and to reconsider the benefits from or alternatives to further operation of the reactors in question.

The Staff also calls our attention to four facilities licensed before the passage of NEPA (Dresden, Ginna, Oyster Creek, and Yankee Rowe) where spent fuel pools were expanded. Although not expressly stated, we presume that none of those facilities had had any environmental review prior to authorization of the spent fuel pool expansion. We note, however, that none of those proceedings were apparently the subject of an adjudicatory hearing; hearings in those situations are not mandatory and only occur if properly requested by an interested party. 10 CFR 2.105. If there had been such a hearing, and if a party or the licensing board in question had desired to consider need for power or alternatives, we could not say that such consideration would have been inappropriate or beyond the licensing board's jurisdiction. In any event, the fact that there may not have been such a review in those cases serves as no precedent for determining our jurisdiction here to consider need for power or alternatives.

In sum, it is clear that our authority to consider need for power or alternatives is not barred or even undermined by any NRC decision cited to us or of which we are aware. We turn now to the source of our authority to

consider such questions.

5. The basic thrust of both the Applicant's and Staff's positions is that NEPA only imposes obligations on an agency in situations where a major federal action results in significant environmental impacts and hence requires the preparation of an impact statement. Put another way, benefits and alternatives become irrelevant absent the presence of significant environmental impacts which would cause NRC to prepare an environmental impact statement. We disagree.

To begin with, we acknowledge that the impacts of this spent fuel pool expansion are not great enough to require the preparation of an environmental impact statement. (Our findings of fact on this question appear in Part IV of this Decision.) But there are a number of bases for our nevertheless concluding that we have authority to consider benefits from or alternatives to the proposed action (particularly the alternative of "doing nothing").

First, the Appeal Board in *Prairie Island* stated that the environmental impact flowing from a license amendment might be balanced against the benefits to be derived from it (7 NRC at 46-47, n.4); the statement was made in the context of a spent-fuel-pool expansion proceeding where, as here, the environmental impacts emanating from the amendment were not deemed large enough to warrant preparation of an environmental impact statement. Moreover, although the statement only suggested that consideration could be given to the benefits of continued reactor operation flowing from the amendment, surely it cannot be read to preclude a contrary showing that reactor shutdown might be beneficial (at least in a situation where that question had not previously been explored). What is important is the *balancing* which was sanctioned.

Second, the consideration of alternatives (including the alternative of "doing nothing") is governed by two separate sections of NEPA. Section 102(2)(C)(iii), 42 U.S.C. Section 4332(2)(C)(iii), requires consideration of alternatives in impact statements. It is only applicable in situations where an impact statement must be prepared — *i.e.*, where there is a proposed action "significantly affecting the quality of the human environment." Section 102(2)(C). As we have seen, we find that situation not to prevail here. But Section 102(2)(E), 42 U.S.C. Section 4332(2)(E), also requires the consideration of alternatives.²³ That requirement is imposed whether or not a proposal involves significant environmental impacts. A proposed action not involving significant impacts may nevertheless be halted if alternatives (particularly the alternative of taking no action) have not been adequately considered. *Trinity*

²³ 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.

Episcopal School Corp. v. Romney, supra, 523 F.2d at 93;²⁴ *Environmental Defense Fund, Inc. v. Corps of Engineers*, supra, 492 F.2d at 1135; *Monroe County Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697-98 (2d Cir. 1972); *Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109, 1114 (D.C. Cir. 1971); see also *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 93 (2d Cir. 1975); *Environmental Defense Fund, Inc. v. Corps of Engineers*, 470 F.2d 289, 296 (8th Cir. 1972), certiorari denied, 412 U.S. 931 (1973); *Monarch Chemical Works v. Exxon*, 466 F. Supp. 639, 650 (D. Neb. 1979); accord, *Environmental Defense Fund Inc. v. Callaway*, 497 F.2d 1340, 1341 (8th Cir. 1974) (per curiam).

These courts have treated the obligations under Section 102(2)(C)(iii) and current Section 102(2)(E) to be entirely separate. The latter requirement is said to "ensure that each agency decision maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance." *Calvert Cliffs*, supra, 449 F.2d at 1114. In appropriate circumstances, the Section 102(2)(E) discussion may be incorporated into an impact statement. E.g. *Environmental Defense Fund v. Corps of Engineers*, supra, 470 F.2d at 296. But again, the obligations imposed by the two sections are separate and distinct, and Section 102(2)(E) comes into play irrespective of the magnitude of environmental impacts in question and irrespective of whether an impact statement must be prepared.

The applicability of Section 102(2)(E) of NEPA does depend upon there being a "proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. Section 4332 (2)(E). That situation was found to exist in connection with a proposal to erect a public housing project at a given location, where the controversy centered on the appropriate use to be made of an urban renewal site. *Trinity Episcopal School Corp. v. Romney*, supra. And it was found to exist in conjunction with the proposed construction of three electrical transmission towers along an interstate highway through the New Haven harbor area. *City of New Haven v. Chandler*, 446 F. Supp. 925 (D. Conn. 1978). Although we need not establish a boundary for the applicability of that section, it seems clearly to come into play in a situation where, as here, we are presented with a construction project costing over a million dollars and involving environmental impacts which, even though not sufficient to require preparation of an impact statement, are manifestly different from those resulting from "doing nothing" (e.g. the

²⁴ The Staff attempts to distinguish this case on the ground that it is "predicated on avoiding environmental harm." Even were that so, it is still clear that there need not be sufficient impact to call for the preparation of an impact statement. All there need be is "differing impacts on the environment," whether or not they be significant. *Ibid.* That situation clearly obtains here (see pp. 74, 79, 92, *infra*).

potential purchase of needed power, the differing impacts which would then be incurred, or the possibility that LACBWR power would not be needed and, if that were so, the avoidance of impacts of reactor operation).

Furthermore, in this case, the "unresolved conflicts concerning alternative uses of available resources" may also be viewed as centering on whether a resource (LACBWR) should be used or not used pending a final determination of the question whether LACBWR's provisional license should be converted to a full-term license. As so viewed, the "alternative uses" question is somewhat different from that presented by the judicial precedents cited, in that it is circumscribed from the point of view of time and cast in terms of "use" versus "non-use" of a resource. As we previously suggested, it is unfortunate that the timing of the environmental review of the application for conversion to the full-term operating license was such that it could not be accomplished prior to or in conjunction with this SFP proceeding, because that review clearly is broad enough to include the question posed here.

Although the question is a close one, we believe that Section 102(2)(E) requires NRC to consider at this time the alternative of taking no action. In the absence of any prior assessment of the need for LACBWR, the impacts of the SFP expansion and the reactor's continued operation, on an interim basis, should be compared to the impacts of its shutdown pending review of the application for a full-term operating license. If LACBWR were not to be needed during this interim period, it would be better to defer acting on DPC's request for authorization to expand the spent fuel pool storage capacity until it is determined whether the facility should be authorized a full-term operating license. While this of course would result in a decision not to use a resource (LACBWR), it would prevent a needless expenditure of other resources prior to consideration of the long-term need for and acceptability of LACBWR, a consideration which will properly focus on the overall costs and benefits of LACBWR.

A third basis for our considering either need for power or the alternative of "doing nothing" is that the Staff has discussed these matters in its EIA. Under the heading of "Alternatives" (Section 7.0), the EIA states as follows:

Shutdown of Facility

If LACBWR were forced to shutdown for lack of space to store spent fuel, there would be the loss of the economic benefit from the facility (generation of electric energy) and a cost associated with purchase of replacement energy and maintaining the facility in a standby condition far in excess of the cost of the proposed modification.

The licensee estimates that the loss of revenues from the idle plant would be about \$28,800/day. This is consistent with comparable data for other operating reactors.

EIA (Staff Exh. 1A) Section 7.4, p. 13. In summarizing the alternatives, the EIA concludes that “[a]lternative (4), plant shutdown, would be much more expensive than the proposed action because of the need to provide replacement power” (EIA Section 7.5, p. 13).

The assertions made in the limited appearance statements directly contradict the conclusions reached by the Staff in its EIA. The EIA is, of course, part of the Staff’s case in support of the license amendment. If we have jurisdiction to consider the EIA, we likewise have jurisdiction to entertain information tending to contradict conclusions reached in the EIA.

The Applicant and Staff each draw our attention to the fact that the Commission’s regulation dealing with EIAs (10 CFR 51.7(b)) makes no mention of any requirement to discuss alternatives or to perform a cost-benefit balance, whereas, in contrast, the regulations dealing with impact statements explicitly require discussion of those topics (10 CFR 51.20(a) and (b), and 51.23). We cannot agree, however, that the silence with respect to whether to discuss alternatives or perform a cost-benefit balance in an EIA means that these subjects are inappropriate for an EIA. Moreover, the EIA here did in fact include such subjects. We do not know what authority the Staff was relying on when it included a discussion of alternatives and a cost-benefit balance in its EIA, but we presume it must have been Section 102(2)(E) of NEPA, which we heretofore have considered. In any event, we conclude both that it was proper for the Staff to include these subjects in its EIA and that, as a result, our consideration of information tending to contradict the Staff’s conclusions was also appropriate and within our jurisdiction.

Finally, there are several other bases on which our jurisdiction to consider need for power and alternatives may be founded. Even though a project was authorized prior to the enactment of NEPA, subsequent Federal involvement in the project, by way of approving changes, has been held to trigger the need for an environmental review — even though the impacts of the change were less adverse, or at least no more severe, than those approved earlier. *Minnesota PIRG v. Butz*, 498 F.2d 1314 (8th Cir. 1977); *Hart v. Denver Urban Renewal Authority*, 551 F.2d 1178 (10th Cir. 1977); *State of Wisconsin v. Callaway*, 371 F. Supp. 807 (W.D. Wis. 1974). So-called “continuing projects” begun prior to the passage of NEPA have also been found to require an environmental review. *Lee v. Resor*, 348 F. Supp. 389, 397 (M.D. Fla. 1972).

In addition, a preliminary review at this time might be warranted in the operating license proceeding (over which we clearly have been delegated authority). The very delay in that proceeding might well mandate such a review. *Cf. Northwest Airlines v. CAB*, 539 F.2d 748 (D.C. Cir. 1976). In that connection, we reiterate that the Applicant has heretofore received only an 18-month provisional operating license which under its own terms expired in 1974. Its continued validity is maintained as a matter of law (10 CFR 2.109)

but only as a result of the NRC's delay in completing its review of the full-term operating license application. No party disputes that such application requires a full NEPA environmental review. Even though NRC regulations impose no time limit on such continued validity, it is clear to us that at some point in time the NRC's lack of action must be deemed fatal to the continuation of the provisional license. Otherwise, the Applicant could conceivably operate LACBWR for another 30 years or so without the completion of any environmental review. We need not determine the exact date after which a license extension pursuant to 10 CFR 2.109 becomes unreasonable in order to find that, in the circumstances of this proceeding, at least a preliminary environmental review of continued operation is appropriate at this juncture.

In short, we conclude that there are several independent bases which confer jurisdiction upon us to consider need for power (or the alternative of doing nothing) at this time.

C. Prior to the evidentiary hearing, the Applicant asked us to certify or refer the jurisdictional question we have just discussed to the Appeal Board for its review. We declined to do so at that time, because we felt that the delay (assuming we were upheld by the Appeal Board and a hearing would still be held) would make it impossible for us to render a decision in the time frame in which the Applicant sought approval of the license amendment.

We recognize, of course, that the legal question we have discussed may well be considered a close question. We also recognize that, because it has prevailed on the merits, the Applicant would not normally be permitted to appeal our decision. See, e.g., *Toledo Edison Company* (Davis-Besse Nuclear Power Station), ALAB-157, 6 AEC 858, 859 (1973).²⁵ Furthermore, although we have not investigated the question, our ruling may well be relevant to other proceedings where applicants are seeking to expand the capacity of their spent fuel pools without having earlier been subjected to an environmental review.²⁶ For these reasons, we announced at the hearing that we would refer this ruling to the Appeal Board (Tr. 281). Pursuant to 10 CFR 2.730(f), we find that prompt decision on this question would be in the public interest and hereby refer it to the Appeal Board (see 10 CFR 2.785(b)(1)) for its determination.²⁷

²⁵ If another party were to appeal this Decision, the Applicant could, of course, defend the result reached "on any ground presented in the record, including one rejected" by us. *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775. (December 7, 1979).

²⁶ The applicability would be limited, of course, to proceedings where a review of benefits or alternatives was sought by a party or by a licensing board. 10 CFR 2.105.

²⁷ In conjunction with this referral, we call the Appeal Board's attention to the following documents:

1. Applicant's Request for Reconsideration, or, in the alternative, Certification or Referral to the Appeal Board, dated October 1, 1979.
2. Pre.Conf. Tr. 392-438 (September 21, 1979).

(Continued on next page)

One further comment is also in order. We have characterized the jurisdictional question as one which many may regard as a "close question." Despite this characterization, we strongly believe that there are several bases upon which our jurisdiction properly rests; but we recognize that the arguments for the contrary position are not frivolous. In such a situation, however, we believe it important to resolve any doubts in favor of an on-the-record hearing on the issues in question (*i.e.*, need for power and the alternative of "doing nothing"). With respect to those issues, the views of those who made limited appearance statements at the second prehearing conference were both strongly held and diligently presented. As it turned out (see Part IV, *infra*), some of those views had at least a plausible foundation; others proved to be neither factually well founded nor based upon a broad enough perception of applicable factors to produce a sound conclusion. Faced with such strongly held differences of opinion, it is important to resolve the questions in a public forum, unless clearly prohibited by applicable rules.

The Atomic Energy Act designates the public adjudicatory hearing as such a forum (42 U.S.C Section 2239(a)). It provides a unique vehicle for obtaining answers in public to controversial questions. In doing so, it also provides an effective method for implementing the "full disclosure" goals of NEPA. To have allowed the Applicant and Staff to have worked out answers to the need for power questions (or the alternative of "doing nothing") without public participation, or to have permitted them to avoid these questions altogether, would scarcely have answered the outstanding questions. Nuclear power is sufficiently controversial that its problems or apparent problems must be dealt with and resolved on the merits in full view of the public. The Atomic Energy Act and NEPA demand no less.

IV. FINDINGS ON NEED FOR POWER

A. Before embarking on our findings with respect to need for power (or the alternative of "doing nothing"), we turn first to the scope of the issue which is now before us and the applicable standards for considering that issue. In doing so, it is important to remember that need for power is also an issue before us in the companion operating license proceeding. The scope of these two proceedings is not co-extensive. For that reason, it is not necessary for us to consider now whether LACBWR will be needed for the entire term of its

(Continued from previous page)

3. Tr. 246-281 (October 3, 1979).
4. CREC's Proposed Findings of Fact, dated October 31, 1979, par. 121-123.
5. NRC Staff's Brief in Opposition to Licensing Board's *Sua Sponte* Consideration in this Proceeding of the Need for LACBWR, dated November 5, 1979.
6. Applicant's Reply to CREC's Proposed Findings of Fact, dated November 7, 1979, Part V.

proposed operating license. That is the very issue which is before us in the other proceeding. At this time; we need only make the narrower determination of whether LACBWR is needed during the period in which the full-term environmental review is being performed. The narrower review is sufficient to assure that operation of the reactor with its modified SFP will not occur absent an environmental review of such operation. At the second prehearing conference, it appeared to us that his period would likely extend for two or three years. (It appears now that it could be less.) We therefore established as the period with respect to which we would consider need for power (or the alternative of "doing nothing") in this proceeding as the period ending December 31, 1982 (Pre. Conf. Tr. 416, 421).

As the Appeal Board observed in *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 90 (1977), "[n]eed for power' is a shorthand expression for the 'benefit' side of the cost-benefit balance which NEPA mandates" for certain licensing proceedings. Considered in the context of the alternative of "doing nothing," the issue may be characterized as an exploration of the consequences of not having the power produced by the plant available for use during the period under review. For, in this proceeding at least, there is no serious dispute that, absent approval of the amendment authorizing expansion of the SFP capacity, the plant would have to be shut down at its next refueling for lack of storage space for the spent fuel rods (EIA, Staff Exh. 1A, Section 7.5, at p. 13). What we have before us, therefore, is a balance of the benefits (if any) of LACBWR operation until December 31, 1982 against the costs (both environmental and economic) of such operation (including the cost of SFP expansion), or alternatively, an exploration of the costs (if any) of not having the power produced by LACBWR available.

Appeal Board holdings on need for power indicate that "need" may be demonstrated in a variety of forms. Most obvious is the obligation of a utility to satisfy power demands in its service area. *Niagara Mohawk Power Corporation* (Nine Mile Point, Unit 2), ALAB-264, 1 NRC 347 (1975). In satisfying this obligation, a utility must also meet the reserve margin requirements of power pools in which it is a participant. *Id.* at 358; *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, 2B), ALAB-367, 5 NRC 92, 96-98 (1977). Need may also be demonstrated by means of the "substitution" theory — e.g., that the operation or availability of a given plant will enhance system reliability by lessening an existing dependence of the utility upon scarce fuels such as oil or gas. *Nine Mile Point*, ALAB-264, *supra*, 1 NRC at 353; *Public Service Company of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 186 (1978); *Seabrook*, ALAB-422, *supra*, 6 NRC at 95-99. Or a utility may show that the electrical power generated by a given plant is needed to satisfy energy requirements currently being met directly by scarce fuels such as natural gas.

Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 327-28 (1978), *affirmed (per curiam)*, *Mid-America Coalition for Energy Alternatives v. NRC*, 590 F.2d 356 (D.C. Cir. 1979). In short, in determining whether a plant is needed, many factors bearing upon system reliability may be examined.

We do not view the need factors heretofore sanctioned by the Appeal Board as circumscribing the scope of inquiry with respect to need for a particular facility. The Applicant asserts, however, that "any benefit whatever" from the continued operation and availability of LACBWR is sufficient to "tip the scale" in favor of granting the proposed amendment. As a basis for this proposition, the Applicant cites two authorities: first, the Appeal Board's statement in *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 162-63 (1978), to the effect that certain cost items are to be left "to the business judgment of the utility companies and to the wisdom of the [responsible] State regulatory agencies;" and, second, the conclusion of the Licensing Board in *Portland General Electric Company* (Trojan Nuclear Plant), LBP-78-32, 8 NRC 413, 454 (1978), *aff'd.*, ALAB-531, 9 NRC 263 (1979), that, in a spent fuel pool expansion proceeding where adverse environmental impacts of the expansion are "negligibly small," consideration of alternatives is unnecessary and, further, that "any benefit whatever" would tip the scale in such circumstances.

In our view, these authorities must be distinguished on their facts from the situation before us. Both involved situations where a prior environmental review had taken place. Both involved situations where State agencies had authority to consider need for the particular facility. And both addressed only the question whether alternatives environmentally inferior to (but less costly than) the proposal in question must be examined. Here, in contrast, we are faced with the alternatives either of (1) expanding the capacity of the spent fuel pool and thereby permitting operation for the next three years, a course of action which involves some environmental impacts, albeit not to a degree sufficient to require the preparation of an impact statement; or (2) not authorizing expansion and, as a result, possibly eliminating all the impacts which otherwise would be incurred, including the impact of continuing operation.

In the situation before us, we are not prepared to go so far as to agree that "any benefit whatever" will tip the scale in favor of the amendment. We do recognize that various types of benefits may appropriately be considered. Nor does an applicant's showing with respect to any one form of benefit need to be overwhelming: as we interpret NRC holdings in this area, it appears that a conglomeration of lesser benefits may be considered collectively to determine whether there is need for a facility. *E.g.*, *Wolf Creek* ALAB-462, *supra*, 7 NRC at 328; see also *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2), LBP-78-17, 7 NRC 826, 867-83 (1978). We conclude

that an *ad hoc* judgment in each situation is necessary to determine whether the sum of the particular benefits which are claimed is sufficient to offset whatever impacts (financial and otherwise) are engendered in order to realize the particular benefits.

We also recognize, as the Appeal Board has stated, that the financial cost of an alternative is important "only to the extent it results in an environmentally superior alternative." *Midland*, ALAB-458, *supra*, 7 NRCat 163. But satisfaction of that standard does not appear to require that the impacts which may be alleviated be sufficient to require the preparation of an impact statement. We do note, however, that the environmental review undertaken in a situation where no impact statement is required need not be as detailed as where an impact statement is being prepared. *Trinity Episcopal School Corp. v. Harris*, 445 F. Supp. 204, 218 (S.D.N.Y. 1978), *rev'd. on other grounds, sub nom. Karlen v. Harris*, 590 F.2d 39 (2d Cir. 1978).

As we have indicated, need for power is relevant in the context of a NEPA cost-benefit balance or as an ingredient in evaluating the alternative of "doing nothing." To the extent it involves a cost-benefit balance, environmental costs are of significant importance. The quantum of those costs has not been raised as an issue in this SFP proceeding, and we have found no reason to question the costs set forth in the EIA (except to the extent they bore upon the financial costs of plant shutdown). At the September prehearing conference, therefore, where we defined the issue which we were raising, we advised the parties that we would accept as the environmental impacts of expansion (and operation after expansion) the environmental costs set forth in the EIA (Pre. Conf. Tr. 423). Because many of those costs are expressed in terms of impacts additional to those considered in the Staff's Draft Environmental Statement (DES) prepared in June, 1976 (NUREG-0087), we also admitted into the record (as a Board exhibit) those portions of the DES which describe those impacts (Tr. 959-970). In performing a cost-benefit balance in order to determine whether the license amendment should be authorized, we will rely on the quantum of the impacts set forth in the EIA and DES.

In evaluating the costs of not operating LACBWR for the next three years, we are also assuming that the reactor will be maintained in a condition under which it could operate after completion of the environmental review for the full-term operating license. This is because we are not required to assume that the full-term review will be unfavorable to continued operation. Because LACBWR has been authorized to operate, we do not believe that the pendency of the full-term operating license review should prejudice the Applicant's position in that regard. All that an adverse decision in this SFP proceeding could or should do is to prevent the Applicant from undertaking the SFP modification. If DPC found an alternate method of disposing of its spent fuel, an adverse decision in this proceeding could not prevent it from continuing to operate. Thus, by assuming that the reactor is maintained in a

position in which it might operate, we are merely recognizing the realities of an outstanding and valid provisional operating license. In addition, as we later discuss, the Applicant takes the position that maintaining the reactor in this condition is the only option available to it if the SFP expansion were not to be approved. See pp. 95-96, *infra*.

B. The Applicant advances essentially four reasons why LACBWR should operate during the period ending December 31, 1982. First, it asserts that LACBWR's capacity is needed to enable Dairyland to meet the energy needs of its own system, to avoid generating capacity deficits in the early 1980's, and to maintain the reserve margin required of members of the power pool in which it is a member. Second, it claims that LACBWR greatly enhances the overall reliability of its system in the LaCrosse, Wisconsin area.

Third, DPC asserts that it is dependent upon coal for over 90% of its system capacity and that the continued availability of LACBWR (Dairyland's only non-coal-fired base-load plant) reduces its dependence on coal and lessens the vulnerability of its system to interruptions caused by such events as coal strikes and severe weather. Finally, the Applicant refers to a number of potential adverse impacts and additional costs resulting from a prolonged shutdown of the reactor and turbine systems. It asserts that, if LACBWR were shut down from 1980-82, it would be forced to incur substantial expenditures purchasing replacement power to make up for the lost capacity and meet its system needs. Additionally, it points to a potential prejudice to its rights in the operating license proceeding, and to additional labor costs and other miscellaneous expenses incident to maintaining LACBWR in a cold shutdown condition and later bringing it on line. It maintains that these additional costs far outweigh any cost savings resulting from not running the reactor and, when coupled with the cost of power from alternate sources, far outdistance the cost of obtaining power from LACBWR.

We will treat these claims *seriatim*.

DPC Generating Capacity

1. DPC is an electrical power cooperative owned by its member distribution cooperatives, and provides electricity to 29 such cooperatives located in western Wisconsin, southeastern Minnesota, northeastern Iowa, and northwestern Illinois (Panel Testimony, p. 2).²⁷ It is a member of the Mid-Continent Area Power Pool (MAPP) (*id.*, pp. 2-3). The DPC system is

²⁷ Panel Testimony refers to the direct testimony sponsored by the witness panel consisting of Mr. John Parkyn, the Assistant Superintendent of LACBWR, Mr. Jack Leifer, the Assistant General Manager, System Engineering Group, DPC, and Mr. James Sherwood, Assistant General Manager, Administrative Services Group, DPC, and appearing in the record following Tr. 442.

directly interconnected with 28 other power suppliers, including Interstate Power Company, Wisconsin Power and Light Company, Northern States Power Company, Lake Superior District Power Company, and Northwest Wisconsin Electric Company in Wisconsin (*id.*, p. 2).

2. Generating facilities operated by DPC are located at five separate generating stations with a total capacity of 693 Megawatts (MW), consisting of the following units:

- (a) Alma Generating Station
 - Unit 1 20 MW Coal-Fired Steam
 - Unit 2 20 MW Coal-Fired Steam
 - Unit 3 19 MW Coal-Fired Steam
 - Unit 4 61 MW Coal-Fired Steam
 - Unit 5 88 MW Coal-Fired Steam
 - Total 208 MW
- (b) Stoneman Generating Station
 - Unit 1 19 MW Coal-Fired Steam
 - Unit 2 33 MW Coal-Fired Steam
 - Total 52 MW
- (c) Genoa Generating Station
 - Genoa No. 1 12 MW Oil-Fired Steam
 - Genoa No. 2 46 MW Nuclear-Fired Steam (LACBWR)²⁸
 - Genoa No. 3 350 MW Coal-Fired Steam
 - Total 408 MW
- (d) Twin Lakes Generating Station
 - Units 1-4 9 MW Oil Diesel
- (e) Flambeau Generating Station
 - Units 1-3 16 MW Hydro

Id., p. 3.

3. LACBWR is the fourth largest (in terms of capacity) of the 17 generating units presently on line in the DPC system. The electricity produced by LACBWR for the period 1975 through 1978 ranged from 3.5% to 11.2% of the total produced by the DPC system. Panel Testimony, pp. 2-4.

4. One half (175 MW) of the total capacity of Genoa No. 3 is contracted to Cooperative Power Association (CPA) (*id.* at p. 4). Although, on occasion, DPC has been able to purchase energy from CPA's portion of Genoa No. 3, CPA has normally scheduled its share of the unit for its own use. The

²⁸ Although nominally designated as a 50 MW plant, LACBWR is currently rated at 46 MW for purposes of the MAPP pool (Tr. 486, 537, 866).

contractual arrangement between DPC and CPA does not allow the Applicant to utilize any portion of CPA's 175 MW share of Genoa No. 3 in DPC's plans to meet system demands. *Id.*, p. 4; Tr. 813-816.

5. The record indicates that an additional coal-fired unit (Alma No. 6) with a capacity of 350 MW was expected to become operational in the DPC system by the end of 1979 (Panel Testimony, p. 4). With this unit on line, the DPC system generation capacity, exclusive of the CPA contracted share of Genoa No. 3, will be 868 MW (see Finding 2). However, a capacity exchange agreement between DPC and Northern States Power Company (NSP) calls for a sale to NSP of a portion of the generating capacity of Alma No. 6 upon completion of that unit (CREC Exh. 2; Tr. 656). The agreement continues through October, 1982 (CREC Exh. 2; Tr. 790).

6. CREC's Proposed Findings 6 and 7 refer to one recent and one future addition to CPA's generating capacity and claim that these additions will have somewhat lower incremental fuel costs than Genoa No. 3. See Tr. 855. CREC states that, because of this, CPA might have reason to sell Genoa No. 3 energy to DPC during the 1980-82 period. Mr. Leifer, for the Applicant, specifically rejected that hypothesis and added that CPA has indicated that it will continue to require the same amount of energy from Genoa No. 3 as in the past (Tr. 859). The Board finds no evidence in the record to support CREC's supposition.

7. As a member of MAPP, DPC is required to maintain a total accredited capacity of installed generating capacity and/or firm purchased capacity equal to its seasonal peak load plus a reserve capacity of 15% of that load (Panel Testimony, pp. 9, 13; Tr. 766-68, 832). This requirement would not change with LACBWR off line (Tr. 786, 832).

DPC Peak Demand Projections

8. DPC, a strongly winter-peaking utility, had a seasonal²⁹ peak demand of 442 MW in January, 1975, 498 MW in January, 1976, 556 MW in December, 1976, 562 MW in January, 1978, and 580 MW in January, 1979 (Tr. 769-771). Its projected seasonal peak demands, based upon the sum of separate power requirement studies of each of the 29 member distribution cooperatives, are as follows: 1979-80: 644 MW; 1980-81: 697 MW; 1981-82: 754 MW; and 1982-83: 793 MW (Tr. 806-07). The Applicant's witness testified that DPC's seasonal peak load has increased at an average rate of 7 percent per year from 1974 through 1978 (Tr. 764) and that an average annual increase

²⁹ The MAPP winter seasonal period runs from November 1 through April 30 (Tr. 766). The Applicant's witnesses explained why a seasonal peak is more meaningful than an annual peak or an annual month-to-month peak (Tr. 766-771). We agree.

of 6.6 percent is indicated for the next five years (Panel Testimony, p. 12). The Applicant's witness further testified that by the end of 1983, DPC will have a capacity deficit of 11 MW with LACBWR on line and a 57 MW deficit without LACBWR (Panel Testimony, p. 12).³⁰

Addition of New Distribution Cooperatives

9. Through exhaustive cross-examination of the Applicant's witnesses, CREC challenged their interpretation of historical figures and questioned the basis for their future projections. It posed several discrete reasons why it regarded the Applicant's projected growth to be overstated. First, CREC's Proposed Findings Nos. 12-13 and 15-16 would have us disregard the addition to the DPC system of two member distribution cooperatives between 1974-1976 and reduce the historical growth rate by the 12-15 MW that they represent. The Board agrees that the addition of two new member cooperatives to the DPC system contributed to the load growth experienced during the 1974-1976 period. We note in passing, however, that even if the incremental increase attributable to the addition of these cooperatives is discounted, the annual growth rate during that period still exceeded 10% (Board calculation). Further, we disagree that the addition of the two cooperatives casts doubt on future projections. Those future projections are not an extrapolation from DPC's earlier growth rates but, rather, represent the sum of the projections of all member cooperatives including the two recent additions (Tr. 806).

Effects of Weather

10. CREC also asserts that figures reflecting recent experience in annual energy sales should be corrected to account for the effects of weather (Proposed Findings 14, 17-20) and indicates that corrections for the effects of weather should likewise be made in projecting peak power demand (Proposed Findings 26-27). However, CREC makes no attempt to state why or how it thinks peak power demand and annual energy sales are related or how a correction in one should lead to a correction in the other. Applicant's witness Leifer pointed out that the DPC peak loads are very sensitive to cold spells as short as three days whereas annual energy sales relate to deviations from the norm summed over the whole summer and winter seasons (Tr. 807-08). We find no obvious connection between winter peak power demand and annual energy sales and therefore decline to adjust DPC's peak power predictions

³⁰ This does not square with the asserted average annual increase of 6.6%, under which, in Finding 15 (*infra*), the Board derived a 1983-84 peak demand of 832 MW. This represents a capacity deficit of only 10 MW without LACBWR.

downward to reflect weather conditions as sought by CREC.

Effects of National Recession

11. CREC next claims (Proposed Findings 21-23) that both energy sales and peak demand will be downwardly affected by the “anticipated national recession now looming.” It implicitly includes such downward effect in its proposed adjustment of DPC’s peak growth rate (Proposed Finding 27). CREC bases its claim on the assertedly suburban character of much of DPC’s sales growth. On the other hand, the Applicant contends that the record does not establish that a recession will occur. Alternatively, it asserts that it serves principally farms and rural residences (Tr. 803-805), that the growth in farm and farm-related uses of electricity is increasing at a higher rate than urban use (Tr. 809-10), and that any recession will not affect the rural economy that DPC serves to as great a degree as the national economy or highly industrialized areas (Tr. 493-94). The Applicant’s witness conceded, however, that approximately 50% of DPC’s energy sales growth reflected growth in the numbers of commercial and residential customers in the suburban areas of La Crosse, Eau Claire, and Hudson, Wisconsin (just east of Minneapolis-St. Paul, Minnesota) (Tr. 494).

12. We would be remiss to accept the Applicant’s proposed disposition of the national recession matter on the basis of the lack of proof of such a recession. While DPC’s argument may be technically well founded, we cannot decide issues in a vacuum and ignore the “economic facts of life” which the nation may be experiencing both as a matter of extrinsic circumstances and explicit governmental policy. *Cf. Commonwealth Edison Company* (La Salle County Nuclear Station, Units 1 and 2), ALAB-153, 6 AEC 821, 823-24 (1973). On the merits, however, the record does support the Applicant’s claims to the extent that a substantial part (possibly as much as 50%) of DPC’s projected growth does appear to be farm related. In 1978, approximately 75% of DPC’s customers and 60% of its energy sales were farm related (Tr. 803, 805). Given the large agricultural component of DPC’s sales, we conclude that the recessionary impact will be less than that for utilities serving more industrialized areas. Moreover, there clearly is no basis in this record for holding or assuming that any recession which may occur will extend through 1982. For those reasons, we find that, although some downward revision may be called for, a major adjustment in DPC’s projected growth rates to account for a recession is not warranted.

Growth Rate Predicted by Wisconsin Public Service Commission

13. During cross-examination, CREC referenced a March, 1979 finding by the Public Service Commission of Wisconsin, in a proceeding involving the

application of NSP, Lake Superior District Power Co., CPA, and DPC to construct the Tyrone Nuclear Plant, that “[t]he applicants have not shown reliable forecasts of coincident peak demand in *western Wisconsin* at an average annual growth rate of more than 4%.” *Application of Northern States Power Company, et al.*, Docket No. CA-5447 (Findings of Fact, Conclusions of Law and Order, dated March 9, 1979), p. 16 (emphasis supplied). CREC urges (Proposed Finding 25) that we find that the Wisconsin PSC finding is inconsistent with DPC’s projected growth of 6.6% per year. Further, as a predicate to that finding, CREC also seeks a finding that there is no reason to believe that DPC consumers will wait until after 1982 to begin undertaking serious conservation efforts (Proposed Finding 24).

14. Upon questioning by the Board, the Applicant’s witness stated that the referenced Wisconsin PSC finding was not strictly applicable to DPC since DPC serves different service areas (Tr. 812)—*i.e.*, parts of Minnesota, Iowa, and Illinois, as well as western Wisconsin (Panel Testimony, p. 2). He also stated that Lake Superior District Power Co., one of the four Tyrone Applicants, is growing at a “much lower” rate than DPC, since it is a small utility in a sparsely populated area “where the economy has never been very strong” (Tr. 812). Furthermore, the witness cited for CREC’s proposed conservation finding stated only that there would be a downturn in DPC’s growth rate after the next two or three years because of the adoption of a large-scale load management system which would control water heaters during peak periods and because of greater conservation efforts (Tr. 810-11). DPC indicated that existing conservation efforts were in fact taken into account in its long-term load forecasts (Tr. 809). For these reasons, we cannot accord substantial weight to either of CREC’s two proposed findings on this subject.

Conclusions with Respect to Demand Growth

15. As we have seen, the Applicant has projected an average annual increase in winter season peak demand of 6.6% over a five-year period (Finding 8, *supra*) whereas CREC claims that, as a result of its proposed adjustments, with which we have previously dealt, the growth rate should be no more than 5% over a slightly different five-year period (Proposed Finding 27). The capacity required to meet each of the projected growth rates (figured directly as well as with an additional 15% to cover reserve requirements) is as follows:

Winter	<u>Applicant</u>		<u>CREC</u>	
	Demand (MW)	Demand plus Reserve (MW)	Demand (MW)	Demand plus Reserve (MW)
1979-80	644	741	609	700
1980-81	697	802	639	735
1981-82	754	867	671	772
1982-83	793	912	705	811
1983-84	832 ³¹	957	740 ³²	851

16. As we have also seen, DPC's capacity (not including the capacity contracted to CPA) with LACBWR is 868 MW. Without LACBWR it would be 822 MW.

17. Using the Applicant's projections, therefore, DPC either would have a deficit in, or would barely meet, its accredited capacity requirements in the 1981-82 winter season, depending upon whether or not LACBWR remains in service. Using CREC's projections, there would be a deficit by the 1983-84 winter season if LACBWR is taken out of service. Neither of these projections includes any allowance for power heretofore contracted by DPC to NSP (see Finding 5, *supra*). Firm purchased power would be required to make up any deficits in accredited capacity (Tr. 784-86). (As is indicated later in these findings, *infra*, pp. 92-95, such purchased power is likely to be more costly than production of power through LACBWR.)

18. In reviewing the adjustments to DPC's projections proposed by CREC, we have found those relating to the addition of new distribution cooperatives and weather conditions to be unwarranted. We also find the Wisconsin PSC finding to be not applicable to the situation before us and decline to give it any weight. But we agree that some adjustment (although not to the extent called for by CREC) is appropriate to account for recessionary conditions. In these circumstances, it appears that demand growth will lie within the range circumscribed by the Applicant's and CREC's projections and that, without LACBWR on line, DPC will suffer a deficit in accredited capacity at some time between the 1981-82 and 1983-84 winter seasons — most likely by the 1982-83 winter season (the end of the period under review here).

³¹ Derived on basis of asserted 6.6% average annual increase over a five year period. See Finding 8.

³² Derived by applying 5% growth rate to claimed 1982-83 demand (CREC Proposed Findings 28, 30).

19. The Appeal Board has repeatedly observed that “inherent in any forecast of future electric power demands is a substantial margin of uncertainty.” *Nine Mile Point*, ALAB-264, *supra*, 1 NRC at 365 (footnote omitted); *Wolf Creek*, ALAB-462, *supra*, 7 NRC at 328. The Commission itself recently recognized that uncertainty and confirmed the earlier Appeal Board rulings which factored such uncertainty into the evaluation of demand forecasts. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, 4), CLI-79-5, 9 NRC 607 (1979). A utility such as DPC has the responsibility to provide adequate and reliable service to all its consumers at all times (Tr. 602-03). Given that responsibility, “the most that can be required is that [a] forecast be a reasonable one in the light of what is ascertainable at the time made.” *Wolf Creek*, ALAB-462, *supra*, 7 NRC at 328 (citations omitted). Moreover, in fulfilling that responsibility, it is not unexpected, nor is it unreasonable, for a utility to be conservative and possibly to err on the high side in predicting demand growth. *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 410-11 (1976). For the consequences of an error on the low side — caused perhaps by an unexpectedly severe winter storm — could be far more severe than the adverse effects emanating from an over-estimation of demand growth. *Id.* at 411.

20. Applying these standards to the present situation, it is not unreasonable to predict that, by the end of the period under review, DPC may well have a deficit in accredited capacity if LACBWR is removed from service. CREC’s own projection of a 5% growth rate would result in a deficit within a year of that period. For that reason, we accept the possibility of avoiding a capacity deficit by the end of 1982 as a valid benefit — albeit not a conclusive one — for keeping LACBWR on line during the next three years.

Reliability of DPC/NSP System in the La Crosse Area

21. The second major component of DPC’s claim of need for LACBWR during 1980-82 is the role that LACBWR is asserted to play in alleviating the problem of providing reliable service in the area immediately surrounding La Crosse, Wisconsin, during periods of high power demand. Currently, peak demand in the La Crosse area is approximately 400 MW (Tr. 594, 638-9). Power for the La Crosse area now is supplied by the facilities located at the Genoa site, including LACBWR (Tr. 582, 594) and, in addition, is imported via four 161 kV transmission lines which are owned and maintained by either DPC or Northern States Power Company (NSP) (Tr. 584, 635, and Exh. 1 to Panel Testimony). The capacity of these lines limits the amount of power which can be brought into this area (Tr. 839). Thus, should the Genoa No. 3 plant be down and DPC lose its 175 MW share of that 350 MW facility during

periods of high demand, the reliability of service in the La Crosse area would be jeopardized, since a failure of any one of the four 161 kV transmission lines would require load shedding to prevent unacceptably low voltages and excessive overloads on the remaining lines (Tr. 581-82; Testimony of Ralph A. Stone, Superintendent of System Operation and Planning, NSP-Wisconsin, fol. Tr. 874). DPC and NSP have added capacitors and other power conditioning equipment and are now adding more in an attempt to alleviate this situation (Tr. 589). Obviously the situation worsens as the demand for power increases. Under cross-examination, Mr. Leifer testified for DPC that, at best, the addition of power conditioning equipment has and will temporarily offset the effect of growth in demand for power (Tr. 589, 601-602, 638, 641). He further testified that, assuming load growth as predicted by the Applicant occurs, by the summer of 1981 there may be low voltage problems if Genoa No. 3 trips out during periods of high demand, even without the subsequent loss of a transmission line (Tr. 583). The addition of a fifth transmission line from Lansing, Iowa, to Genoa would solve the problem of maintaining reliable service in the La Crosse area until growth reaches levels projected for 1983 (Tr. 878). However, the earliest that this new line could be in service is August 1, 1981 (Tr. 877-78); but it likely will not be completed before the early part of 1982 (Tr. 839), and completion could be delayed until the end of that year (Tr. 590-92).

22. Until the Lansing-Genoa line is available, the reliability problem is met by operating one or both of the oil-fired turbines at NSP's French Island Plant near La Crosse. More specifically, turbines are started when the load reaches 85% of peak and when either the Genoa No. 3 plant or one of the 161 kV transmission lines is down. Operation of these nominally 70 MW turbines protects the transmission and distribution system by providing sufficient power and voltage support locally such that, if a transmission line should also trip while Genoa No. 3 is down, unacceptably low voltages, transmission line overloads, and load shedding are avoided. The use of these oil-fired turbines as a protective measure is undesirable from the cost and oil-consumption points of view. Although owned and operated by NSP, Dairyland shares the cost of their operation. In September 1979, for example, Genoa No. 3 was down for four days for boiler tube repair. The demand on the system reached levels requiring protection during most daylight hours and 125,210 gallons of oil were used. Should LACBWR also be unavailable, it would be necessary to start the turbines at lower demand levels and thus to operate them frequently and for longer times. Such additional use could lower the reliability of these turbines. Until a new transmission line becomes available, NSP estimates that an additional 500,000 to 700,000 gallons of oil would be consumed annually to offset the absence of LACBWR. Stone Testimony pp. 2-4; Tr. 582-83; 637-40; 836-37.

23. Intervenor takes strenuous objection to the DPC and NSP view that keeping LACBWR in operation during the next year or two so as to relieve the La Crosse area reliability problem constitutes an important benefit. Much of its cross-examination was devoted to this matter, as were 42 of its proposed findings (Tr. 582-622, 633-651, 875-77, CREC Proposed Findings 34 through 75).

24. For one thing, CREC argues that it is unnecessary to turn on the French Island turbines when Genoa No. 3 is down until after one of the transmission lines has tripped. CREC considers that the immediate load shedding which would then be required would not be a serious penalty and would not last longer than the 10-15 minutes needed to start the French Island combustion turbines. In support of this view, CREC asserts that customers frequently experience outages of equal or greater severity and length due to wind and thunderstorm-caused distribution failures (CREC Proposed Findings 52, 54, and 55). The DPC and NSP witnesses, on the other hand, testified that DPC and NSP have an obligation to start one combustion turbine to maintain adequate voltage so that the service is not degraded to the point where recovery without damage to equipment becomes impossible (Tr. 603, Stone Testimony p. 2).

25. CREC also makes the argument that the probability of Genoa No. 3 being out during the winter peak demand period is low, as is the probability of transmission line failure. It follows that the combined probability of a line tripping out while Genoa No. 3 is down during periods of high demand is lower still. CREC Proposed Findings 41-48, 54. Moreover, the Intervenor argues that due to its low availability factor, LACBWR would not be a reliable source of backup capacity to protect against transmission outages (CREC Proposed Findings 61, 66-75). On the basis of information on historic down times, CREC calculated forced outage rates for all the transmission lines serving the La Crosse area and concluded that not more than 50 hours of outage is likely to occur while the load is over 85% of annual peak during the 1980-81 period (CREC Proposed Finding 60). The Applicant points out, however, that scheduled outages (Tr. 636-37) and momentary outages, neither of which was considered in the CREC calculations, also affect reliability in the La Crosse area.

26. In our view, CREC's attempt to minimize the reliability problem in the La Crosse area is far from persuasive. CREC's position that it is unnecessary to start the French Island turbines until after involuntary black-outs occur strikes us as cavalier. CREC's assumption that consequences would be minimal fails entirely to consider the possibility of permanent damage to customer and/or DPC/NSP equipment, the possibility that the situation might deteriorate to the point that recovery would be impossible without damage to equipment, or the utilities' legal obligations, potential

liabilities and social responsibilities. Consequently, we consider CREC's position to be unacceptable. It follows that its estimates of the quantities and costs of fuel oil required to operate the French Island turbines if LACBWR were not available (CREC Proposed Findings 62, 64-64) are much too low.

27. We recognize that an operating LACBWR cannot by itself solve the La Crosse area reliability problem during the next two or three years. But conversely, its unavailability would significantly intensify the problem, not only by increasing turbine fuel oil quantities and costs, but by increasing the frequency and duration of the turbines' operation and hence decreasing their probable availability when needed (Tr. 836-38). Thus we find that the contribution LACBWR can make in alleviating the La Crosse area reliability problem during the 1980-82 period constitutes a significant benefit.

Diversification

28. With the exception of LACBWR, most of Dairyland's generating capacity derives from the combustion of coal. See Finding 2, *supra*. After the 350 MW coal-fired Alma No. 6 plant comes on line late in 1979, DPC's dependence on a reliable supply of coal will be even greater. Hence Dairyland contends (and CREC makes no contrary claim) that keeping LACBWR operating is important to provide at least some back-up should coal supplies be threatened. DPC points out that coal supplies can be disrupted by strikes affecting the mining and transportation of coal. The severe winter weather conditions in the DPC service area can also immobilize coal shipments. It is also possible that coal in transit or in open storage can be heavily wetted by rain or melted snow which, if it subsequently freezes, can bind the coal particles together into an unusable mass. Panel Testimony, pp. 7-8.

29. Especially where, as here, a utility is so heavily dependent upon a single type of fuel, the Board agrees that diversification is justifiable and finds the continued operation of LACBWR to be beneficial in terms of diversification.

Costs Incident to Non-Operation of LACBWR

30. The last benefit advanced by DPC in support of continued LACBWR operation is the avoidance of the additional financial and other costs which, it claims, would be incurred if LACBWR is shut down. As we previously indicated, our authority to consider the relative financial impacts of operation or non-operation of LACBWR for the next three years derives from there being differences in environmental impact between the two courses of action. That such differences exist here is beyond dispute. The EIA and DES indicate that expansion of the SFP, and operation of LACBWR for three years,

involves some environmental impacts. Whether or not one judges them to be significant, they nevertheless are expected to occur. On the other hand, taking LACBWR out of action could arguably result in the elimination of most of the local impacts; and, in any event, if power from other sources must be obtained, there will be differences in quantity and/or kind of impacts of producing power from the alternative sources. Given the differences in environmental impacts between operating and not operating LACBWR, financial costs become a relevant factor for us to consider in selecting between those two alternatives.

31. There are two facets of financial costs upon which the Applicant has relied in order to demonstrate the benefits of operating LACBWR for the next three years. First, it claims that the replacement power which it would have to acquire to make up for the LACBWR power would cost more than that produced by LACBWR. Second, it asserts that the cost of maintaining LACBWR in a cold shutdown condition would exceed the cost of operating it. CREC strongly disputes each of these claims.

Costs of Replacement Power

32. The Applicant asserts that if LACBWR had not been available during the period 1975-1978, the cost to DPC for replacement energy from other steam sources would have been approximately \$4.5 million more than the cost of the fuel to supply the same energy from LACBWR (Panel Testimony, p. 4). This figure was calculated on the basis of average steam fuel costs at other DPC plants and actual fuel costs at LACBWR (Tr. 515). Further, it states that if LACBWR is not utilized during the period 1980-82, DPC will be required to generate and/or purchase 484,000 megawatt hours of replacement energy at an estimated increased cost of approximately \$7,018,500 (Panel Testimony, p. 9). Its estimate is based on a plant factor of 40%, which it deems conservative in relationship to LACBWR's historical plant factor of approximately 48% (Tr. 778). Additionally, if LACBWR is not operating, the Applicant perceives a need to expend an estimated \$726,000 for the purchase of firm capacity during the 1981 and 1982 winter seasons (Panel Testimony, p. 9). It concedes that at that time it will be able to purchase such capacity from other members of the MAPP pool (Tr. 509).

33. DPC's sales and purchases of energy with members of MAPP are made in accordance with the MAPP service schedule (Tr. 780-788). The MAPP service schedule classifies energy sales and purchases into different categories such as participation power, seasonal participation power, emergency power, economy energy, spinning reserves, peaking, short term and system participation (Tr. 779-780). Replacement power (in the form of either participation power or peaking power) is purchased at a specified

capacity or demand charge plus an energy charge (Tr. 784-785). Where a generating plant has been used by a utility to credit its capability to meet its load plus reserve requirements, it can take that generating plant out of operation if it has a contract to buy replacement power of an equivalent amount (Tr. 785-786, 832). Peaking power can be purchased only on a six-month basis and is considerably more expensive than economy energy, as is participation power (Tr. 785, 787). The purpose of economy energy is to reduce power costs where there is a differential cost between two synchronized generating stations (Tr. 780-783). Economy energy purchases are usually of short duration, on an hourly basis, and interruptible (Panel Testimony, p. 10; Tr. 519-20, 781). They cannot be used to replace energy from a generating station that is removed from service (Tr. 783). Thus, DPC, according to the MAPP service schedule, would be unable to purchase electricity at economy energy rates to replace the electrical generation provided by LACBWR (Tr. 784). It would have to make up any shortages either through participation or peaking power (Tr. 784-785, 786-789).

34. CREC attacks the Applicant's asserted replacement power costs for a number of reasons. It first claims that DPC will not have a deficiency in accredited capacity between the beginning of 1980 and the end of the 1982-83 winter season because of the unavailability of LACBWR but that, even if DPC did have such a deficiency, it could readily purchase capacity in the MAPP pool, particularly in the winter peak periods, and it could make up any "highly unlikely summer period deficiency by simply foregoing its planned summer period sales" to NSP (Proposed Findings 31 and 32). It further asserts that, because there will be no capacity deficiency, DPC will be able to buy much of the energy it requires to replace LACBWR energy at economy energy rates against its synchronizable capacity (Proposed Finding 76).

35. We reject these claims. We have already found that DPC may well have a deficit in accredited capacity during the period under review if LACBWR were taken out of service (Finding 20, *supra*). Although replacement capacity would be available from the MAPP pool (CREC Exh. 1, pp. 3-2, 8-2; Tr. 509), that does not mean that DPC could purchase it and thereby fulfill its power requirements. For the La Crosse reliability problem would nevertheless remain (Findings 21-27, *supra*). Moreover, DPC's projected sales to NSP are the subject of a contractual commitment which clearly could not be abrogated unilaterally by DPC (CREC Exh. 2).

36. Finally, it is apparent that acquired power to replace LACBWR capacity (either from other DPC facilities or from other MAPP members) would cost significantly more than the entire cost of power from LACBWR. During August 1979, LACBWR power cost 26.382 mills/KwH (Panel Testimony, Exh. 3). Although the cost of LACBWR power from January-August 1979 was considerably higher — 43.392 mills/KwH — that higher cost

reflected an extended period of outage and reduced operation due to refueling, delays in shipping spent fuel and certain modifications (*id.*, p. 11, and Exh. 3; Tr. 543-48, 840-44). It is true that DPC bought economy power in June 1979 for as little as 6.5 mills/KwH (Tr. 532-33). (DPC also paid as much as 15 to 34 mills/KwH for such power in November 1978 (Tr. 789).) But, as we have indicated, economy power is not available as a replacement for a facility which is taken off line. This is especially true where, as here, the facility in question is being used to satisfy the utility's accredited capacity requirements. And purchase power of the type needed for accreditation purposes (participation power or peaking power) would cost considerably more than economy energy (Tr. 785). Its price is based on the cost of power from a particular source at a given time (Tr. 784-789). In November 1978, DPC purchased participation energy at an average cost of 71 mills/KwH and emergency energy at from 35 to 50 mills/KwH (Tr. 790). And costs of power from MAPP are projected to increase in the period 1980-82 due to the increase in cost of new generating capacity (Tr. 509-511).

37. Furthermore, the total costs of generating electricity during August 1979 at certain of DPC's coal-fired facilities was considerably more than the 26.382 mills/KwH cost at LACBWR — *i.e.*, 51.927 mills/KwH for Stoneman Units 1 and 2 (combined 52 MW) and 41.540 mills/KwH at Alma Units 1, 2, and 3 (combined 59 MW) (Panel Testimony, pp. 3, 11, Exh. 3). And, during August 1979, LACBWR had the lowest fuel cost of any of DPC's facilities and, with the exception of one unit (Genoa No. 3), the lowest incremental cost of operation ("Total Operating Expense") of any of DPC's facilities (*id.*, Exh. 3). Because DPC will normally use its lower-cost power first, it is reasonable to assume that any acquisition of replacement power to make up for loss of LACBWR would not be taken from the lower-cost DPC facilities. In sum, we find no sound record evidence to support CREC's claim (Proposed Finding 81) that the average cost of replacing energy which would have been generated by LACBWR in the 1980-82 period will be no more than 15 mills/KwH.

38. For these reasons, we agree with the Applicant that any power which must be acquired to replace that lost through LACBWR shutdown will likely cost more than power produced by LACBWR. We do not adopt the precise dollar differentials advanced by DPC since they are based on demand forecasts which we have not entirely accepted. But the fact that some cost savings will likely result from continuing to use LACBWR rather than acquiring additional power seems clear to us and constitutes an additional benefit from the continued operation of LACBWR.

Costs of Keeping LACBWR Shut Down

39. The second facet of our cost consideration involves those costs,

financial or otherwise, involved in keeping the reactor shut down for the next three years (and excluding costs of replacement power, which we have just discussed). We turn first to a description of some of the technical considerations involved in keeping LACBWR out of operation during the review period; an understanding of those considerations is necessary for an exploration of the reasons for the financial costs associated therewith.

40. We begin by outlining the Applicant's position that, as a practical matter, denial of its application to expand its SFP capacity will result in prolonged shut-down of LACBWR, there being no other viable alternative. LACBWR cannot be operated much longer before burn-up limits are reached and the reactor must be shut down for refueling. However, the present spent fuel pool storage racks are full so that the fuel elements presently in the reactor cannot be stored there (EIA, Section 2.0, p. 1). In fact, the last refueling was possible only because Dairyland was able to store a few elements temporarily in GE's Morris facility (*ibid*). However, GE has indicated that it will not accept additional spent fuel from LACBWR (*id.*, Section 7.2, p. 10). Moreover, Dairyland's witnesses testified that, although all other possible storage sites had not been explored conclusively, they had serious doubts that off-site storage could be found. Nor do sufficient spent fuel shipping casks exist to permit on-site storage. Consequently, the fuel presently in LACBWR would have to remain there, so that refueling and continued operation would not be possible. Tr. 729-736.

41. The Applicant also finds no merit in the Intervenor's suggestion that DPC's present operating license might be converted to a "possession only" license and the LACBWR reactor vessel converted to a temporary storage pool (Tr. 737-748). The Staff agrees with the Applicant's position, for the primary reason that a "possession only" license would require removal of existing fuel from the core and storage of that fuel elsewhere (Tr. 957-58; 975). Consequently, the Applicant's position is that, for the purpose of these proceedings, the only alternative to increasing the storage capacity of its fuel pool is prolonged shut-down while still maintaining the capability of restart. The Staff agrees (*cf.* EIA, p. 13).

42. The Board finds that the alternatives suggested by CREC are entirely speculative and unsupported. We therefore agree with the position of the Applicant and Staff. For these reasons, as well as those we expressed earlier in this opinion, we confine ourselves to a comparison between continued operation and prolonged shut-down without precluding the option to restart at some future date as late as the end of 1982.

43. Although complying with our ruling that hearings would be held on the costs and benefits of continued operation vs. the alternative of prolonged shut-down, the Applicant vehemently maintains that this alternative is

impractical and certainly inadvisable. Quite apart from differences in environmental impacts and dollar costs, the Applicant contends that maintaining both the skills of operations personnel and the physical condition of the plant will be difficult and costly at best and, being unprecedented, will involve many unknowns. While all that may be so, it is a matter of evidentiary proof. Such claims *per se* are insufficient to cause us to dismiss out of hand the alternative of prolonged shutdown.

44. The Applicant asserts that its full operating staff would have to be retained even under conditions of prolonged cold shut-down (Panel Testimony, p. 9; Tr. 696, 715). CREC strongly contests Applicant's assertion, labeling it as "incredible" (CREC Proposed Finding 90). Testifying for the Staff, Mr. James J. Shea, the LACBWR project manager, stated that, even in a cold shut-down condition, technical specifications require that DPC maintain an operating staff to continue the activities normally associated with an operating plant (Shea Testimony, fol. Tr. 893, p. 2). Mr. Shea's main concern was that the plant not be understaffed from a safety standpoint (Tr. 953-54). While the Board cannot conclude from the record that no staff reductions whatsoever would be allowable, it is clear to us that the technical specifications for LACBWR, the Commission's regulations, and Dairyland's responsibilities would require the retention of the vast majority of the LACBWR engineering, operations, maintenance, and security staffs throughout a period of protracted shut-down. Similarly, with respect to CREC's analogous claim concerning administrative, general and other costs attributable to LACBWR (Proposed Finding 92), it seems obvious that the maintenance of a substantial operating staff during a prolonged shutdown would call for the retention of many administrative and general personnel and would preclude the layoff of the vast majority of these personnel.

45. With respect to its operations staff, DPC is concerned first with its ability to retain its qualified and experienced personnel in the face of a protracted shut-down and to find replacements for those who choose to leave. In any case, simulator training would be required to enable operators to retain their licensed status. Under conditions of prolonged shut-down, Dairyland management's concerns that safety considerations receive proper attention would be increased (Panel Testimony, pp. 1-2). The Intervenor again belittles the problems of maintaining a full and competent operating staff as foreseen by Dairyland, describing them as "bald assertions" which are unsupported and unproven (CREC Proposed Findings 85 and 86). The Board agrees that the Applicant has neither proved its case conclusively nor illustrated its beliefs with decisive examples. We are nevertheless sympathetic with Dairyland's concerns about retaining its best people and maintaining a high degree of competence in its staff. We certainly agree that simulator training would be

required to this end. Clearly the teachings of the recent Three Mile Island accident would tend to support this view.

46. The Applicant also states that if LACBWR is to be maintained in a condition which will permit safe restart after prolonged shut-down, many special precautionary measures will be required to prevent degradation of the reactor and associated systems and equipment. Since restart after such a long period is unprecedented, a thorough study to identify possible problems and explore the effectiveness of possible solutions would be required. Such a study would certainly include possible corrosion of fuel elements and the primary coolant system boundary. The Applicant also suspected that special precautions would be required to prevent bowing of the turbine shaft and corrosion of turbine blades. Its witness Parkyn described certain problems which had previously arisen during a 10-month shut-down. Panel Testimony, pp. 11-12; Tr. 453, 817-23, 845-46. See also Tr. 919 (Staff witness).

47. Since there is no precedent, Staff witness Shea could not be positive that the Staff would require a special safety review prior to restart, but he offered his own opinion that such a review would be required (Tr. 956). CREC neither offered evidence nor advanced any arguments to refute the DPC and Staff testimony and again claimed only that the problems envisioned by the Applicant were speculative and unproven (Proposed Finding 89).

48. The Board recognizes that there are many unknowns associated with the hypothesized alternative of restart following a long period of cold shut-down. We therefore strongly endorse the Applicant's belief that a thorough study must be made and we would not be at all surprised if rather extensive precautionary measures would prove necessary. In the absence of knowledge grounded in previous reactor experience, we can only add our opinion that many safety-related questions would need to be asked and answered before restart should be permitted. Moreover, we speculate that Applicant's estimated costs to preclude degradation may well be too low and that such costs may well dominate all other cost considerations.

49. In asserting that the financial cost of LACBWR not operating exceeds the cost of operating it, the Applicant includes a significant dollar cost for replacement energy (Panel Testimony, Exh. 4). We have found that there may well be some increased costs resulting from the acquisition of power to substitute for LACBWR, although we have not accepted the precise dollar amounts advanced by DPC (Finding 38). But, when costs of replacement power are eliminated, the costs of not operating LACBWR (according to DPC) are lower than the costs of operating it, but in an amount less than the fuel costs of LACBWR. In other words, aside from replacement power and fuel costs, the Applicant projects a higher cost of keeping LACBWR shut down than running it (Panel Testimony, Exh. 4).

50. CREC strongly disagrees not only with the reasonableness of DPC's projections (Panel Testimony, Exh. 4) that certain expense items will attend a prolonged shutdown of LACBWR but, as well, with DPC's projection of unchanged or increased costs for those items. First, with respect to its claim that the necessity of additional costs for personnel retention, simulator training, layup, inspection, and restart are unproven or speculative (Proposed Findings 85, 86, 89), we have already suggested that these items are to some extent legitimate expense items, and CREC has not attempted to dispute the particular dollar costs advanced by DPC. We therefore do not disregard the costs proposed by DPC, although we acknowledge that their precise amount is uncertain. Further, we have already considered CREC's claims (Proposed Findings 90 and 92) concerning the incredibility of not reducing staff levels (both operating and administrative) and have found that no major reduction can be anticipated in the event of prolonged plant shutdown (Finding 44). No major reduction in the operating cost levels of these items (which DPC has utilized) can therefore be expected. CREC asserts that DPC's claims of continuing charges for depreciation, interest, taxes and insurance should be disregarded because of the lack of qualification of the witnesses (Proposed Findings 91, 93-99). Although the witnesses involved were not experts in those fields, their estimates merely projected a continuation of existing costs which, in any event, and with the exception of depreciation, are not large enough to bear a significant impact on the costs we are evaluating. See Panel Testimony, Exh. 3. Moreover, to some extent, it is clear that some such costs will continue, although their precise amount has not been established to our satisfaction.

51. We note in particular, however, that one of the Applicant's witnesses expressed his understanding that the amount of insurance coverage is imposed by NRC regulations which do not draw a distinction as to whether or not a plant "authorized to operate" (as this one is and would be irrespective of our decision on the SFP expansion) is actually in operation (Tr. 826-27). See 10 CFR Part 140, Subpart B. Further, physical depreciation of an asset continues whether or not that asset is used. Whether that asset is "used and useful," as asserted by CREC as the basis for considering depreciation expense (Proposed Finding 98), is a matter which may be relevant for rate-setting purposes but which has no bearing on our consideration of the cost of keeping LACBWR shut down for an extended period. For these reasons, it appears to us that the total costs for keeping LACBWR shut down (aside from replacement power costs) are likely to be in the same range as (if not greater than) the costs of operating the reactor (aside from fuel), and that the costs projected by DPC (Panel Testimony, Exh. 4) are not seriously in error.

52. For these reasons, it is clear that the only significant cost saving which may be attributable to keeping LACBWR shut down is that attributable to

fuel savings. CREC asserts that the Applicant has greatly understated these fuel costs. First, it claims that LACBWR fuel is more costly than that for other reactors, for a number of reasons (Proposed Findings 106-110). The Applicant concedes that the fuel fabrication cost for LACBWR fuel may exceed that for other reactors (Tr. 828) but maintains that this is irrelevant to DPC's projection of 1980-82 fuel costs inasmuch as the projection was based on actual LACBWR costs, not industry-wide average fuel costs (Applicant's Reply to CREC's Proposed Findings of Fact, p. 24; Tr. 828-29). We agree.

53. Second, CREC claims that the Applicant's witnesses lacked the necessary expertise and knowledge to make informed predictions as to future fuel costs (Proposed Findings 101-105). To some extent, that claim is accurate. The Applicant's witnesses were unable to explain how LACBWR fuel costs were computed or the assumptions underlying such computations (Tr. 677-78), other than to state that they were premised on actual past costs (Tr. 828-29). Moreover, they named another DPC employee whom they deemed to have greater knowledge of fuel costs than any one of them did and who actually was responsible for preparing the cost figures used by the Applicant in its prepared testimony (Tr. 680-81). For that reason, to the extent that the projected fuel costs may be regarded as reflecting the views of the Applicant's panel, they are entitled to little weight.

54. There is other evidence, however, which tends to give some credence to the DPC projected fuel costs. We have no reason to believe that the past fuel costs of LACBWR (Panel Testimony, Exh. 3) are erroneous. Those costs are the costs set out in the company's books (Tr. 676-77). As indicated earlier, they were less than the fuel costs of any of DPC's other facilities (Panel Testimony, Exh. 3). Nor have we been given any reason to believe that the relationship of LACBWR fuel costs to other fuel costs will change over the next three years. Indeed, some of the fuel to be burned during this period is already in the reactor. Moreover, the projected costs were claimed to have been prepared in accordance with requirements imposed by the Rural Electrification Administration (REA Bulletin 181-1), which prescribes a method of accounting for nuclear fuel expenses (Tr. 773). Although the witnesses cannot vouch for whether the requirements were appropriately followed, they can at least be credited with knowledge (as management officials) that those requirements were expected to be followed. And there is nothing in the record which even suggests the contrary. Taking all these considerations into account, we have no hesitancy in finding that the projected fuel costs for LACBWR for the next three years — a relatively short period of time — are likely to remain low enough to make it beneficial, taking all financial costs into account, to operate LACBWR rather than keeping it in a cold shutdown condition and likely replacing at least some of its power from other sources.

55. In so finding, we wish to make it clear that all we are looking at are the potential financial consequences of keeping an operating reactor running for a short period of time, where substantial cost savings from shutdown (other than fuel and the remaining cost of the SFP modification) have not been demonstrated (and, indeed, where the expense of keeping it shut down is likely to be no less, and possibly more, than the expense of allowing it to operate). If LACBWR were the subject of a construction permit application, the answer might well be different.

Environmental Impacts

56. Having reviewed the benefits of the SFP modification, including continued reactor operation for the next three years, we turn to the environmental impacts which that modification will engender. In that regard, we repeat again that those impacts were not the subject of a contention in the SFP proceeding nor were they questioned by us. The type and quantum of the impacts we are discussing appear in the EIA and DES and were accepted by us without permitting any cross-examination or contrary direct evidence. Some of those impacts are to be considered further in the operating license proceeding. For that reason, our findings with respect to those impacts are to be accorded no precedential effect, either through *res judicata* or collateral estoppel or otherwise. *Commonwealth Edison Company* (La Salle County Nuclear Station, Units 1 and 2), ALAB-193, 7 AEC 423, 424-25 (1974).

Impacts of the Proposed Modification

57. The impacts of the proposed expansion of the storage capacity of the SFP at LACBWR were considered by the staff in its EIA (Staff Exh. 1A). It determined that the proposed license amendment will not significantly affect the quality of the human environment and, pursuant to 10 CFR 51.5(c), issued a negative declaration of environmental impact. The Board accepts this evaluation based upon the following determinations:

- a. The proposed modification will not change the physical configuration of the SFP or the containment building within which it is enclosed. No additional commitment of land is required.
- b. There will be no significant change in plant water usage and therefore no modification is required in the design flow rates of the system.
- c. The potential offsite radiological environmental impacts associated with the SFP expansion were evaluated. The only significant gaseous release attributable to storing additional assemblies for a longer period of time is Krypton-85. Release of this gas may represent as much as 20 additional curies

per year over the 10 curies per year presently released (EIA, p. 5; DES, p. 3-17). This would result in an additional body dose of less than 0.001 mrem/year at the site boundary.

d. While there may be no increase in solid radwaste in the pool due to the modification, it is conservatively estimated that as much as 12 cubic feet additional resin a year from the demineralizer may result (EIA, p. 6). This represents an increase of less than 0.6% of the expected average annual amount of solid radwaste which is in the range of 2300 to 2600ft³. The present spent fuel racks, representing 800 cubic feet, will be disposed of as low level waste (*id.*, pp. 6, 7). Although this will increase the radwaste volume by about one-third in the year of the proposed modification, it amounts to an increase of less than 1% when averaged over the lifetime of the plant.

e. Liquid releases of radionuclides into the Mississippi River from SFP pool leakage may increase. This would contribute an increase of approximately 1% over the present liquid release of about 90 Ci/year and is not considered to be significant (EIA, p. 7; DES, p. 3-13).

f. Occupational exposure from removal and disposal of the present spent fuel racks and installation of the new racks is estimated to be between 16 and 23 man-rem. The Applicant has expressed its commitment to carry out the modification in the manner in which the 16 man-rem exposure will be realized, rather than the manner in which 23 man-rem will be experienced, if it is possible to do so. Prince Affidavit, p. 21 (Response to Question F-1). This increase is less than 5% over the generic value of 500 man-rem per year (EIA, p. 7; DES, p. 5-11), although a larger fraction of the actual annual worker exposures at LACBWR which, according to the Staff, have ranged from about 110 to 240 man-rem (Shea Testimony, p. 4). The increment in onsite occupational dose resulting from the proposed increase in stored fuel assemblies from radionuclide concentrations in SFP water represents a negligible burden (less than 1% of the annual occupational radiation exposure from the facility) (EIA, p. 8).

g. The installation and use of the proposed new SFP racks will not change the calculated radiological consequences of a postulated fuel handling accident in the SFP area from those values given in the DES. The DES analysis indicates that the environmental risks due to such accidents are exceedingly small; that the integrated exposure of the population within 50 miles from each postulated accident would be much less than that occurring from natural radioactivity; and, when considered with the probability of occurrence, the annual potential radiation exposure of the population from all postulated accidents is well within naturally occurring variations in the natural background (EIA, p. 8; DES pp. 7-2, 7-3).

Impacts of Continued Plant Operation

58. The impacts of LACBWR operation, separate from the SFP proposed modification, are analyzed in the DES. Continued operation during the 1980-82 period will result in some unavoidable adverse environmental impacts but these are judged to be small based upon the following:

a. At 80% capacity factor, approximately 3.1×10^8 gallons per year of Mississippi River water are used for once through cooling of the main condensers. An additional 4.8×10^7 gallons per year of river water and 1.8×10^7 gallons per year of well water are used for various other plant operations (DES, pp. 5-1, 5-3).

b. LACBWR and the Genoa No. 3 unit have a common discharge into the Mississippi River. Normally LACBWR, which represents about 20% of the total thermal load of the two units, discharges 64,000 gallons per minute of cooling water with a ΔT of 13°F. In cold weather, the ΔT may more than double, especially when heated water is used for ice control in the intake. The thermal characteristics of the discharge plume and mixing zone are within requirements of the State of Wisconsin water quality standards (*id.*, pp. 5-4 to 5-8.)

c. Studies have revealed no widespread or long-term impact on either the terrestrial or aquatic biota. Although 100% mortality of entrained organisms may occur, an adverse impact is not expected since their contribution to the total river population is small (about 2.5%). Fish impingement studies did not indicate a substantial loss to fish populations (*id.*, pp. 5-12 to 5-17).

d. The radiological impact on man and other biota will be insignificant. Radioactive effluents released to the atmosphere and to the hydrosphere from LACBWR represent small increases in the population dose from background radiation sources. The estimated dose to the offsite population within 50 miles of the plant is calculated to be no greater than 40 man-rem per year. Occupational radiation doses range from 110 to 240 man-rem per year and are consistent with the ALARA principle (*id.*, pp. 5-8 to 5-11; Shea Testimony, p. 4).

e. The risk associated with accidental radiation exposure is very low (DES, pp. 7-1 to 7-3).

Environmental Conclusion

59. The Applicant has advanced a number of reasons why it regards the continued operation of LACBWR for the next three years as necessary. Although CREC has undercut some of those reasons, we have found a number of them to be valid. We have also reviewed the impacts resulting from

modification of the SFP and from continued operation through 1982. We conclude that the conglomeration of several benefits arising from such operation outweigh the impacts we have considered.³³

V. CONCLUSIONS OF LAW

Based upon our evaluation of the Staff's Safety Evaluation and Environmental Impact Appraisal, the application for license amendment submitted by DPC, the affidavits submitted in connection with the summary disposition motions and responses to Board questions, the written testimony of all of the witnesses, as well as the answers elicited from these witnesses in response to questions of the Board and the parties, and the exhibits admitted into evidence, all as described earlier in this Decision, the Board makes the following conclusions of law:

1. There is no outstanding genuine issue as to any material fact with respect to any of CREC's contentions admitted as issues in controversy in this spent fuel pool proceeding; and, as a result, summary disposition of those contentions should be granted, subject to the conditions outlined earlier in this Decision.
2. Subject to those aforesaid conditions, there is reasonable assurance that the activities authorized by the requested operating license amendment relating to the expansion of the spent fuel storage pool capacity at the La Crosse Boiling Water Reactor can be conducted without endangering the health and safety of the public.
3. The activities authorized by the operating license amendment will be conducted in compliance with the Commission's regulations.
4. The issuance of the license amendment will not be inimical to the common defense and security or to the health and safety of the public.
5. The issuance of the license amendment, although it represents an important Commission action, does not significantly affect the quality of the human environment and does not require the preparation of an environmental impact statement under the National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, *et seq.*, and Part 51 of the Commission's regulations, 10 CFR Part 51.

³³ In reaching this conclusion, we considered all of the proposed findings of fact and conclusions of law of each party. Any proposed findings or conclusions submitted by the parties which are not incorporated directly or inferentially in this Initial Decision are rejected as being unsupported in law or in fact or as being unnecessary to the rendering of the decision.

6. The proposed license amendment is a proposal which involves unresolved conflicts concerning alternative uses of available resources, within the meaning of Section 102(2)(E) of NEPA, 42 U.S.C. Section 4332(2)(E) and applicable Commission determinations, and therefore requires an evaluation of alternative courses of action, particularly the alternative of taking no action.
7. There are benefits in terms of both reliability and economic considerations to be achieved from operation of the LACBWR plant for the next three years or until completion of the environmental review of the full-term operating license application (by which time a more detailed environmental review will have been undertaken).
8. The environmental impact of the spent fuel pool modification will not significantly affect the quality of the human environment.
9. The benefit of the power produced by LACBWR in the next three years outweighs the environmental impact of the spent fuel pool modification, and three years of operation.
10. The appropriate course of action from an environmental standpoint is the issuance of the requested license amendment, subject to the conditions outlined earlier in this Decision.

VI. ORDER

Based upon the Board's findings and conclusions, and in accordance with the Atomic Energy Act, as amended, the National Environmental Policy Act, as amended, and the regulations of the Nuclear Regulatory Commission, summary disposition of each of CREC's contentions is *granted*. The Director of Nuclear Reactor Regulation is *authorized* to make appropriate findings in accordance with the Commission's regulations and to issue a license amendment authorizing expansion of the spent fuel storage pool capacity at the La Crosse Boiling Water Reactor, subject to technical specifications and conditions as outlined in this Decision. The legal ruling in Part III of this decision is *referred* to the Appeal Board pursuant to 10 CFR 2.730(f).

In accordance with 10 CFR 2.760, 2.762, 2.764, 2.785, and 2.786, this Initial Decision shall be effective immediately³⁴ 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 by any party within ten (10) days after service of this Initial Decision. A brief in support of the exceptions

³⁴ This proceeding is not covered by the Commission's recent suspension of the immediate effectiveness rule (10 CFR 2.764) for certain purposes. 44 Fed. Reg. 65049 (November 9, 1979).

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.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Dr. George C. Anderson, Member
Ralph S. Decker, Member
Charles Bechhoefer, Chairman**

**Dated at Bethesda, Maryland,
this 10th day of January, 1980**

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

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

In the Matter of

Docket Nos. 50-400

CAROLINA POWER AND
LIGHT COMPANY

50-401

50-402

50-403

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

January 14, 1980

The Licensing Board explains the reasons for its conclusion in LBP-79-19, 10 NRC 37 (1979), that it had the authority to order, as a condition of the construction permit for the proposed facility, a mandatory hearing on the issue of the licensee's management capability and technical qualifications to operate the facility, to be held during later review of an operating license application.

MEMORANDUM

On July 13, 1979 this board issued a supplemental initial decision adding a condition to the Shearon Harris construction permit which would require an evidentiary hearing during the review of the application for an operating license on the issue of management capability and technical qualifications to operate the facility. LBP 79-19, 10 NRC 37, 98 (1979). The NRC staff filed exceptions to portions of the supplemental initial decision stating, *inter alia*, that this board exceeded its jurisdiction and authority in ordering a mandatory operating license hearing. The Appeal Board noted that we had not discussed jurisdiction in the supplemental initial decision and that, because none of the parties submitted a brief in response to the staff's exception brief, the staff's attack on our action has gone unanswered. Memorandum dated October 12, 1979. The Appeal Board invited us to furnish our views on those considerations which led us to conclude that we had the authority to impose the condition. *Id.*

Our report is in two phases. First we will explain why at the time we issued the supplemental initial decision, we believed we had the authority to impose the condition, and second, what our views are now that we have considered the points made by the staff in its brief. We do not address the staff's position that, even assuming jurisdiction, there is insufficient basis for our action. The premise of our view is that there is sufficient basis and that the evidentiary record establishes that the condition is appropriate.

The staff points to the scheme of bifurcation of proceedings set out in Sections 185 and 189(a) of the amended Atomic Energy Act and the differing approaches under 10 CFR Sections 2.104(a) and 2.105(a). The staff observes that, where there is no request for a hearing or intervention petition filed, no hearing is ordinarily held on an operating license application. Staff brief, pp. 11 and 12. We were aware of this practice and we considered the historical precedent of noticing operating license hearings only under 10 CFR Section 2.105 upon a request for hearing. In fact, we know of no case where an operating license proceeding was initiated directly under the provisions of Section 2.104(a). But Section 2.104(a) clearly authorizes an operating license hearing where ". . . the Commission finds that a hearing is required in the public interest . . ." We concluded then, as we do now, that consideration of 10 CFR Section 2.105 is irrelevant to whether a hearing should be ordered. It is only remotely relevant, if at all, to the issue of this board's jurisdiction.

Our final conclusion of law and fact in the supplemental initial decision was that an operating license hearing on the relevant issues will be required in the public interest. Paragraph 202, 10 NRC at 98. This was studied language intended to satisfy the requirements of 10 CFR Section 2.104(a). This conclusion is the natural product of our findings of fact.

We began our consideration with the premise that this agency, through its valid regulation, could and should order the operating license hearing. We do not believe that there is any real dispute that the Commission may do what we have attempted to do. This issue is whether the licensing board may do so as the Commission's delegate.

We considered the fact that Section 2.104(a) provides that the "Commission" must make the required finding of public interest. Regulation 10 CFR Section 1.1(b) defines the "Commission" as the collegial body of Commissioners or a quorum of Commissioners. Only "Nuclear Regulatory Commission" is defined as including agency representatives authorized to act in any case or matter. This could suggest that the use of the word "Commission" in Section 2.104(a) excluded authorized representatives, but the term "Commission" is used throughout Title 10 where the agency, not the collegial body of Commissioners, is intended. In any event, Section 191(a) of the amended Atomic Energy Act provides that the "Commission" may establish Atomic Safety and Licensing Boards to conduct hearings and to make decisions. In implementing Section 191 of the Act, 10 CFR Section

2.721 states again that it is the "Commission" who authorizes Atomic Safety and Licensing Boards to "... perform such other adjudicatory functions as the Commission deems appropriate." We did not read the statute and the rules to necessarily preclude presiding officers from exercising the authority of 10 CFR Section 2.104(a), if the presiding officer is the Commission's authorized agent in the matter.

The staff does not directly address this point and we remain of the opinion that we may exercise the powers of Section 2.104(a) if our designation as the construction permit licensing board can reasonably be regarded to include that authority. We think it can, but we were also aware that a fair question exists whether licensing boards may initiate an adjudicatory proceeding.

In search of the answer we read *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167 (1976). The Appeal Board in that case affirmed the determination by a licensing board, designated to hear radiological health and safety and environmental matters, that it was not authorized to hear antitrust matters under Section 105(c) of the Atomic Energy Act. In *Marble Hill* the Appeal Board stressed three material circumstances not present in this proceeding. The subject matters (antitrust compared to health, safety and environment) were not related in any way. Below we review why the subject matter of the imposed condition is closely related to the issues in the construction permit proceeding, pp. 113, 114, *infra*.

The *Marble Hill* Appeal Board also noted that the Commission's expressed policy and Rules of Practice provide for separate hearings on antitrust matters, citing 10 CFR Part 2, App. A, Sec. X(e) and 10 CFR Section 2.104(d). This consideration is irrelevant to the issue presented in Shearon Harris. The Appeal Board also noted that the Commission had previously noticed the opportunity for a separate antitrust hearing on the *Marble Hill* facility, another indication that antitrust was excluded from the delegation to the construction permit licensing board. This consideration doesn't apply here. Finally the Appeal Board noted in *dicta* that, as a practical matter, licensing boards in antitrust matters may have members selected for expertise in that subject. Nothing in *Marble Hill* indicates that the delegation to us in this proceeding excludes authority for the action we have taken.

Houston Lighting and Power Company, (South Texas Project, Units Nos. 1 and 2) ALAB-381, 5 NRC 582 (1977) is also an antitrust case but the scope of jurisdiction discussion is relevant to our matter. In *South Texas* the Appeal Board ruled that a licensing board designated to rule upon antitrust intervention petitions under Section 2.714(a) is precluded from reopening a construction permit proceeding when the (earlier) presiding officer's jurisdiction had been terminated under Section 2.717(a), and that, in the absence of either a pending construction permit or operating license proceeding, the petitions review licensing board had no jurisdiction to order the antitrust

hearing. 5 NRC at 589-92. We considered *South Texas* and understood its teaching that “. . . licensing boards have no independent authority to initiate any form of adjudicatory proceeding.” *Id.* p. 592. The Appeal Board stated further that this must be done by “some other component of the Commission” under one of five procedures specified in the rules, including the rule authorizing a hearing which, in the public interest, should be heard under Section 2.104.

We recognized that, in *South Texas*, the “some other component of the Commission” authorized to order hearings was contrasted to the licensing board improperly attempting to do. But we regard our board to be the delegate of the “other component”—the Commission itself. The Appeal Board in employing the “other component” language was not addressing a situation where, as here, the action ordering the hearing was in furtherance of achieving the results clearly mandated in the construction permit notice of hearing—protection of the health and safety of the public.

The staff cites *National Bureau of Standards*, 2 AEC 323-24 (1963). This case does not discuss jurisdiction at all. In that case the presiding officer’s “observations” as to the desirability of holding a further hearing prior to the issuance of the operating license were deemed by the Commission not to be a condition or qualification affecting the validity of the provisional construction permit. In fact, the Commission refused to grant the staff’s petition to review the aspects of the presiding officer’s decision relating to his order for a further hearing. The Commission instead elected to have the presiding officer consider reopening the construction permit proceeding to hear the unresolved issues. *National Bureau of Standards* is a rudimentary and summary form of early Atomic Energy Commission memorandum and order. It is ill-suited to provide guidance in the subtle and complex issue of licensing board jurisdiction.

However, we may not so easily dispose of the Commission’s holding in *Florida Power and Light Company*, (Turkey Point Nuclear Generating Plant, Units 3 and 4) 4 AEC 9 (1967). There the licensing board conditioned the construction permit to require subsequent meteorological monitoring and other information to be considered at a later hearing. As quoted by the staff in its brief, the Commission stated:

. . . the Commission has not delegated to atomic safety and licensing boards the authority to direct the holding of hearings following the issuance of a construction permit.

Id. at 15.

We were not aware of *Turkey Point* when we conditioned the Shearon Harris permit. If we had been, we would have discussed our reasons for asserting jurisdiction because we concede that the cited language fairly raises questions about our authority. We appreciate the opportunity to do so now.

The language relied upon by the staff in *Turkey Point* is *dicta*. No other part of the decision refers to the board's jurisdiction. The case actually turned upon a finding by the Commission that the matter does not involve a substantial safety problem; that the information can be developed during remanded construction permit proceedings while the provisional construction permit remains in force. The Commission in *Turkey Point* clearly expressed the desire to adjudicate as much of the unresolved factual issue as possible during the construction permit proceeding rather than deferring matters unnecessarily to the operating license stage. *Id.* p. 17.¹ We would prefer to do this too, but, as we stated, this option was not practical in the *Shearon Harris* proceeding.

The staff has identified the foundation for our jurisdiction in this proceeding. We are bound by the notice of hearing on the application for construction permits.² By extension and by regulation we must also apply the standards of Section 50.35(a) and Section 2.104(b)(1)(i). The staff is correct in stating that the Commission did not enlarge upon the notice of hearing in its remand order, nor did we request an enlargement. We have no more authority than do other licensing boards in usual construction permit proceedings. Staff brief, p. 14.

The staff hypothesizes that the board relied upon the common language in Section 2.104(b)(1)(d) and Section 50.35(a)(4)(ii) as support for our asserted jurisdiction. Staff brief, p. 16. This was not the case.

The question under Section 50.35(a)(4)(ii) is whether,

“ . . . taking into consideration the *site criteria* contained in Part 100 of this chapter, the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public.” [Emphasis added.]

The notice of hearing also references Part 100 in this particular. We read Section 50.35(a)(4)(ii) to permit an inquiry into facility operation but only to the extent that the site criteria are met. Therefore we believed that the “can be . . . operated” language of Section 50.35(a)(4)(ii) probably does not grant authority to the board to inquire generally, as we have, into applicant's

¹ In *Florida Power Corporation* (Crystal River Unit 3 Nuclear Generating Station), 5 AEC 318 (1970) the licensing board (at 5 NRC 173) qualified its order by recommending that the Commission condition the permit to require a later hearing on a safety issue. The Commission granted exceptions on the grounds there was no basis nor need to direct a future hearing. 5 AEC at 322. The Commission ruled that it could order a public hearing on the operating license application if it found that one was desirable or if an interested member of the public requests one. *Id.* There is a superficial similarity between *Crystal River* and this proceeding. *Crystal River* is cited by the staff in another context. However *Crystal River* does not discuss jurisdiction of a CP board to order a hearing based upon a considered conclusion that the public interest requires one.

² 37 *Federal Register* 20,344, September 29, 1972.

management capability. Nor is there any other language of Section 50.35(a) expressly permitting such an inquiry.

We found our basic grant to authority to consider the question of management capability and technical qualifications to operate Shearon Harris to rest in the general provisions of Section 50.35(a)(3) and (4)(i)³ and the implementing provisions of Section 50.34(a)(6). How the analysis goes from Section 50.35(a) to Section 50.34(a) is well explained by the Appeal Board in *Gulf States Utilities Company* (River Bend Station, Units 1 and 2) ALAB-444, 6 NRC 760, 776-78 (1977) where we learn:

Whether every one of the first three of these findings [Sec. 50.35(a)(1)(2) and (3)] will be possible in a given case obviously will depend in large measure upon whether the applicant has furnished the information explicitly required by other provisions of 10 CFR Part 50—such as Section 50.34(a) which specifies what must be set forth in the PSAR submitted as part of the permit application (see p. 765, *supra*). If it has not been supplied, the findings cannot be made. [Citation omitted] If it has been supplied, the Licensing Board's task becomes one of determining whether, on the basis of the totality of the record before it (which will include not merely the revelations in the application itself but, as well, all other information elicited either during the prehearing review or in the course of the hearing itself), the [Section 50.35(a)(4)] finding can be made. Stated otherwise, in the last analysis whether the absence of information not explicitly required to be supplied at the construction permit stage will stand in the way of permit issuance authorization hinges upon the ability of the licensing board to find, without more than has been placed before it, the existence of *reasonable assurance* both (a) that there will be a satisfactory resolution of the outstanding safety questions prior to operation of the facility, and (b) that that operation will not present undue risk to the public health and safety. [Footnotes omitted; emphasis in original]

Id. at 777-78.

It was by this reasoning that we arrived at the conclusion that, before the Licensing Board can make the favorable finding required under Section 50.35(a)(4)(i), applicant must include in its preliminary safety analysis report the information required under Section 50.34(a)(6); *i.e.* a preliminary plan for

³ Section 50.35(a) provides that the Commission may issue a construction permit if it finds, *inter alia* that: (3) safety features of components, if any, which require research and development have been described by the applicant and the applicant has identified, and there will be conducted, a research and development program reasonably designed to resolve any safety questions associated with such features or components; and that (4) on the basis of the foregoing, there is reasonable assurance that, (i) such safety questions will be satisfactorily resolved at or before the latest date stated in the application for completion of construction of the proposed facility, . . .

the applicant's organization, training of personnel, and conduct of operations.

The next step in our analysis was to consider whether the board is authorized under Section 50.35(a)(3) and (4) as implemented by Section 50.34(a)(6), to make a thorough inquiry into applicant's management capability and technical qualifications to operate Shearon Harris. The Board originally thought so when we submitted such question to the staff before the hearing and when we received the responding testimony. Any doubts that we were authorized to conduct an inquiry in such depth were removed in ALAB-490 when the appeal board in this proceeding indicated in very certain terms that the Licensing Board had not explored the issue sufficiently. 8 NRC 234, 243. By remanding the matter, the Commission implicitly agreed with the Licensing Board and the Appeal Board that management capability and technical qualifications to operate the facility were appropriate issues to be heard in a construction permit proceeding. 8 NRC 293-94.

We do not believe that it reasonably can be disputed that the law of this case and the law of the Commission is that the details of an applicant's ability and technical qualifications to operate the proposed facility may be considered under Sections 2.104(b)(1)(i), 50.35(a) and 50.34(a). This is true no matter how many cases the staff can cite to the effect that the standard is limited to whether the plant "can be" operated without undue risk. Brief 16-18.

We believe the staff misreads Section 50.35(a)(4). As we stated above, we have not relied upon subpart 4(ii), ("can be . . . operated") because it is relevant only to Part 100 considerations. p. 110, *supra*. The staff erroneously applies the "can be" standard to this case.

The Appeal Board and the Commission, having determined that management capability and technical qualifications are properly considered in a construction permit proceeding, it necessarily follows that this board, by virtue of the notice of hearing, is the Commission's delegate on the issue. This is so, not only for the purpose of hearing and deciding the issue, but for ordering any appropriate license condition. This is what we believe to be the essence of the issue; it is a question of remedy, not jurisdiction. As the Commission's delegate we have whatever jurisdiction to order appropriate remedies the Commission itself has, unless Commission rule or regulation otherwise limits that delegation. It does not.

Section 183 of the amended Atomic Energy Act authorizes the Commission to condition licenses as it may prescribe by rule or regulation. Similarly, Section 105(c)(6) of the Act permits the Commission in an antitrust proceeding to issue a ". . . license with such conditions as it deems appropriate." The similarity between the Commission's authority to condition licenses under Section 105(c) and under Section 183 of the Act is significant because of the parallel Appeal Board discussion of licensing board

jurisdiction in *South Texas, supra*. There the Appeal Board observed that, in no respect (present in that case) does an antitrust review stand on a different footing than a safety review. Both antitrust and safety reviews are conducted in connection with the adjudication of a construction permit. *Id.* 5 NRC at 592-93. A licensing board's authority to impose remedies in health, safety, and environmental proceedings differs in no way that we can discern from an antitrust licensing board's respective authority. The statutes and *South Texas* indicate that the Commission's conditioning power is the same and that the Licensing Board's delegated authority is parallel.

Antitrust decisions have been very instructive concerning the jurisdiction of licensing boards to impose conditions. In *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-450, 6 NRC 887 1099 (1977) the Appeal Board remanded that antitrust matter to the Licensing Board to consider licensing conditions. The licensing board was instructed:

In fashioning a remedy, we offer the Licensing Board one further caution.

We believe that no type of license condition [examples omitted] is necessarily foreclosed as a possible form of relief.

Id.

The Appeal Board in the *Toledo Edison Company, et al.* (Davis Besse Nuclear Power Station, Units 1, 2 and 3) ALAB-560 10 NRC 265, put into effect the earlier teaching of *Midland* when it approved board antitrust license conditions imposed by the Licensing Board. *Id.*, pp. 42 *et seq.* n. 60.

The Appeal Board in the *Toledo Edison Company, et al.* (Davis Besse Nuclear Power Station, Units 1, 2 and 3) ALAB-560 10 NRC 288, put into effect the earlier teaching of *Midland* when it approved broad antitrust license conditions imposed by the Licensing Board. *Id.*, pp. 42 *et seq.* n. 60.

The authority of licensing boards to condition construction permits does not stop at the door of the operating license. The *Davis Besse, supra*, Appeal Board approved and, in fact, broadened conditions which will continuously affect the operation of the five plants involved in that proceeding. *Id.*

Even closer to our situation, in *Arkansas Power and Light Company* (Arkansas Nuclear One, Unit 2), ALAB-94, 6 AEC 25, 28, 29 (1973), the Appeal Board affirmed a decision by a construction permit licensing board placing upon the construction permit an environmental condition (effluent restrictions) upon the operation of the facility.⁴

There is a very practical reason why the delegation of authority to licensing boards to fashion relief has not been and should not be restricted more than

⁴ The staff cited *Arkansas One* in support of *Crystal River, supra*, to the effect that a licensing board may not require a hearing before the issuance of an operating license. Staff Brief, p. 17. We can find no such support in *Arkansas One*. There the Licensing Board recognized, as we do, that there is no mandatory operating license hearing. 6 AEC at 26. Indeed, that is why we ordered one. The Appeal Board did not have before it the question of licensing board jurisdiction to proceed as we have.

would further the purposes of the statute. It is impossible in advance to predict and to provide for the infinite combinations of factual problems and their solutions. Licensing boards must have the authority to solve identified problems or the hearing process becomes pointless. The Commission recognizes the need for a broad delegation of authority to presiding officers conducting hearings. Pursuant to Section 2.718(1), presiding officers have the power to take any action consistent with the Atomic Energy Act, Chapter 1 of Title 10, and sections 551-558 of the Administrative Procedure Act. The delegation under the Administrative Procedure Act embraces virtually every power possessed by the Commission itself in the conduct of administrative procedures.

Having satisfied ourselves that the Commission delegated to us the authority to fashion whatever relief is required to further the purposes of the statute, the notice of hearing, and Section 50.35(a), we considered our options.

We had doubts about the adequacy of applicant's showing required under Section 50.34(a)(6) for the reasons we explain in the supplemental initial decision. 10 NRC at 96, 97, paragraphs Nos. 197-200. It would have been neater to retain jurisdiction as a construction permit licensing board to resolve our doubts later on a reopened record. But these doubts are not precisely quantifiable and we did not believe that they were sufficient to disturb the conclusion of the initial decision (Paragraph No. 197, 7 NRC at 143) that the four requirements of Section 50.35(a) had been met. We recognize that there is some inconsistency in finding that doubts persist under Section 50.34(a)(6)⁵ but that Section 50.35(a) standards have been met, but that is how we viewed the state of the record. It was balanced between perhaps suspending the construction permit (because our Section 50.35(a) findings were invalid) or moving on to a more practical and equitable solution.

Among the remedies we considered was a condition which would require the applicant to produce a better preliminary plan for the organization, training of personnel and conduct of operations as required under Section 50.34(a)(6). This was strongly opposed by applicant and the staff. We didn't think much of the idea either as we explained in Paragraph No. 200, (10 NRC 97). The condition we imposed was easier for the applicant to meet and was better suited to determine whether there would be reasonable assurance that this safety question has been or will have been resolved within the time

⁵ The staff misunderstood our Paragraph No. 198, 10 NRC 97. As a result, it has miscited the finding opposite to its intended meaning. Staff brief, p. 18. In Paragraph No. 198 we stated "... the remedy might have been to suspend the construction permit until the requirements of Section 50.34(a) (6) have been complied with." This is *not* the same as saying that the section has been satisfied. Our very next paragraph, No. 199, explains that doubts remain, and we go on to say that licensee still has the burden to address them.

framework required under Section 50.35(a)(4).

But what is equally important is that the condition we imposed avoids an absurd result; one which certainly was not intended in the Commission's delegation to us.

Here there is a statutorily authorized licensing board, two members of which have technical nuclear expertise. The board was charged by the notice of hearing and by law to act impartially in the public interest. It had the benefit of an extensive evidentiary record. We did not believe it was carefully considered Commission law that this board could not under any circumstance have the delegated authority to find under Section 2.104(a) that a hearing on the operating license is required in the public interest. Virtually any person demonstrating interest, residing, say 50 miles from the facility, can request and be granted the very hearing we have ordered. Section 2.714.

Conclusion and Summary

We have reviewed our original position and have inquired further into the question of board jurisdiction. We still believe that we have the authority to order an operating license hearing. The relief we order is closely related to the problem to be solved. The situation requiring the remedy was one properly cognizable under the Act, regulations and notice of hearing. The Commission has granted licensing boards broad authority to act as its delegates in furtherance of statutory purposes. Antitrust cases are good examples of this broad grant. Licensing boards in radiological health and safety proceedings require no less jurisdiction than do antitrust boards. There is no regulation denying boards the authority to order the relief required to protect the health and safety of the public. The only argument against the existence of jurisdiction is the *dicta* in *Turkey Point*, *supra*, and the NRC practice where presiding officers have not ordered hearings to be held after their jurisdiction terminates.

We don't believe that either *Turkey Point* or traditional practice reflects the controlling law because the facts of this case are different in that there is no other practical remedy for the unresolved safety issue in this case. However, even if *Turkey Point* does reflect the status of Commission policy, the Appeal Board or the Commission should, by decision, change its policy to meet the modern requirements of the NRC's mission to serve the public. The Commission noted this need in its mandate to licensing boards in its Suspension of 10 CFR Section 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings, (November 5, 1979): "In reaching their decisions the Boards should interpret existing regulations and regulatory policies with due consideration to the implications for these regulations and policies of the Three Mile Island accident." *Id.* p. 4.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Ivan W. Smith, Chairman

**Dated at Bethesda, Maryland
this 14th day of January, 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Herbert Grossman, Chairman
Oscar H. Paris
Frederick J. Shon

In the Matter of

Docket No. 50-155

CONSUMERS POWER COMPANY

(Spent Fuel Pool
Expansion)(Big Rock Point
Nuclear Plant)

January 17, 1980

In this proceeding involving a proposed spent fuel pool expansion, the Licensing Board issues a prehearing order: (1) ruling on various petitions to intervene and the admissibility of contentions raised by the petitioners; and (2) establishing a hearing schedule. The Board defers ruling on a contention questioning need for power, pending the receipt of briefs on whether the National Environmental Policy Act of 1969 (NEPA) requires or allows the consideration of such a contention in this proceeding.

ORDER FOLLOWING SPECIAL PREHEARING CONFERENCE

On December 5, 1979, a special prehearing conference was held, beginning at 9:30 a.m. at the Holiday Inn, U.S. 131 South, Petoskey, Michigan, pursuant to 10 CFR 2.741a, in this proceeding involving a proposed spent fuel pool expansion. A notice of this conference had been sent to all participants on October 11, 1979, which set the conference for November 14, 1979. The Order was published on October 18, 1979 at 44 Fed. Reg. 6179-6180. Subsequently, by Order of the Board dated November 5, 1979, the special prehearing conference was rescheduled to December 5, 1979 at the request of the parties. That Order was published on November 9, 1979 at 44 Fed. Reg. 65226.

As stated in those Orders, and as set forth in 10 CFR 2.751a, the purpose of the conference was to consider all intervention petitions, discuss specific issues to be considered at the evidentiary hearing, and establish a schedule for further action in the proceeding. The Orders also indicated that an opportunity would be afforded to members of the public who are not parties

to the proceeding to make oral limited appearance statements. All non-parties who requested were permitted to make limited appearance statements. The Board heard twelve statements during the morning session and ten during the evening session that was convened solely for the purpose of hearing limited appearance statements.

On July 23, 1979, the N.R.C. had published a Notice of the Proposed Issuance of the Amendment to the Operating License in the Federal Register (44 Fed. Reg. 43126) providing that any person whose interest might be affected by the proceeding might file a request for a hearing in the form of a petition for leave to intervene pursuant to 10 CFR 2.714 by August 22, 1979. By that date petitions to intervene had been received from 24 residents of communities surrounding the facility (joint petitioners), John A. Leithauser on his own behalf and as attorney for Northwest Coalition, and John O'Neill, II. By Memorandum and Order dated September 25, 1979, the Board discussed deficiencies in certain of the petitions; provisionally granted the petitions to intervene of the 24 joint petitioners and John O'Neill, II; directed that Mr. Leithauser amend his petition no later than 15 days prior to the special prehearing conference in order to cure deficiencies in his petition; directed the petitioners, licensee, and staff to consult with each other prior to the prehearing conference to arrive at some agreement with regard to deficiencies in the petitions and to frame contentions; and directed each petitioner to file a supplement to the petition no later than 15 days prior to the prehearing conference which would include a list of specific contentions.

The Intervention Petitions

Pursuant to the Order, the licensee's attorneys and staff attorneys met with an attorney representing some of the 24 joint petitioners and with John O'Neill, II, acting *pro se*. Apparently, by the time of the conference, only 3 or 4 of the original 24 signers of the joint petition, Christa-Maria, Joanne Biers, Jim Mills, and possibly Barbara Goodwin, remained in this proceeding and chose to be represented by the firm of Sheldon, Harmon, and Weiss (see Tr. 9, 58-59). The others are involved only to the extent of offering limited appearance statements. The remaining 3 or 4 joining petitioners will continue to be designated as "Christa-Maria," the first of the joint petitioners to retain legal representation and in whose name the pleadings were filed.

Christa-Maria and John O'Neill submitted contentions within the time prescribed by the Board's Order and 10 CFR 2.714(b). As a result of their consultations, the NRC staff, Christa-Maria and the licensee entered into a stipulation dated November 26, 1979, in which Christa-Maria restated Contentions 2 and 3, which the staff and licensee agreed met the procedural requirements for admission in proceeding. Contention 4 was withdrawn by Christa-Maria under an agreement by the staff and licensee not to object on

the grounds of untimeliness to the refiling of a contention based upon matters raised in that withdrawn contention before the close of the time for discovery. The stipulation withdrew Contentions 5 and 6, concerning the storage of spent fuel after the expiration of the operating license, subject to their reassertion if the Commission's generic rulemaking proceeding (44 Fed. Reg. 61372) determines, prior to the conclusion of this proceeding, that on-site storage of spent fuel will be necessary after the expiration of the operating license. Christa-Maria also restated Contentions 1, 7, 8, and 9, the admissibility of which were contested by the staff and licensee. The Board admitted the stipulation (Tr. 70.)

In view of the Board's provisional granting of the petition for intervention in its Memorandum and Order of September 25, 1979, subject to the acceptance of an admissible contention, the Board's approval of the stipulation admitting Contentions 2 and 3, and the Board's admission of certain of the contested contentions (discussed below), the Christa-Maria intervention *is granted*.

John O'Neill's intervention was not opposed by the staff, was agreed to in the licensee's response to his petition only if his participation were consolidated with the other intervenors, and was provisionally accepted by the Board in its September 25, 1979 Order, subject to his clarifying at the time of the conference his connection with a geographic zone of interest. The Board indicated that it would rule on consolidating his petition after hearing arguments at the conference. At the conference (Tr. 68-69), Mr. O'Neill satisfied the parties and the Board of his standing to intervene. In view of our acceptance of his standing and of the admission of certain of his contentions (discussed below) we grant Mr. O'Neill's intervention. Furthermore, because the Board is persuaded that Mr. O'Neill has valuable contributions to make to this proceeding in his own right, we do not order him consolidated with the Christa-Maria intervention. In the future, if Mr. O'Neill *desires* to be consolidated with Christa-Maria for purposes of discovery and/or the evidentiary hearing, we will entertain a motion by him to that end.

As discussed in the Board's September 25, 1979 Order, Mr. Leithauser's petition on behalf of himself and the Northwest Coalition was deficient in failing to disclose an interest that would be affected by any specific aspect of the proceeding, and on behalf of the Northwest Coalition was also deficient for a number of other reasons. Mr. Leithauser was given until no later than 15 days prior to the special prehearing conference to cure the deficiencies and to file his contentions. Until the prehearing conference, no further word was heard from him. Moreover, at the conference (Tr. 59-68) it was disclosed that Mr. Leithauser had failed to comply with the Board's Order requiring him to consult with the staff and licensee with regard to his standing and contentions, and did not yet have his contentions in legible form. Mr. Leithauser indicated that he had failed to present his contentions in timely fashion because he had

moved his office and home in the past two months, had taxed his financial resources in beginning this proceeding which had resulted in his phone's being disconnected and had not even had time to read the mail emanating from the proceeding. (Tr. 65.) Mr. Leithauser agreed with the Board's suggestion (Tr. 62) that it might be more advantageous for him to consolidate with Christa-Maria but submitted that his financial condition did not allow him to retain counsel. Mr. Leithauser was excluded from the proceeding (Tr. 66) and informed that he could request to be admitted in the future as a matter of the Board's discretion but would have to comply with the requirements of the regulations, including showing good cause for the late filing of an acceptable petition and acceptable contentions, and for his non-compliance with the prior order of the Board requiring him to justify his standing.

Subsequent to the conclusion of the special prehearing conference, Mr. Leithauser submitted a "Belated Motion for Leave to File Pleading Out of Time," a letter addressed to the NRC Commissioners regarding his status to intervene, and his contentions. His motion gave as reasons for accepting the late filings, his inability to meet the prehearing conference schedules because of his heavy personal schedules occasioned by his moving his home and offices which entailed numerous mechanical tasks and being in the employ of others; his assertion that motions filed out of time are not prohibited by the NRC regulations; his complete lack of acquaintance with NRC rules, regulations and practices; the fact that his filings would not interfere with the completion of the SER and EIA; his anticipation of having no difficulty in meeting the discovery schedule approved by the Board at the conference (see schedule, *infra*); his raising of issues as yet unspoken to; and his assertion that the grant of the motion would not prejudice any party to the proceeding.

Mr. Leithauser's letter regarding his standing to intervene indicated that he maintains a personal residence within 30 miles of the facility, which would justify his individual standing to intervene. However, his standing to intervene on behalf of the organization he refers to as the "Northwest Coalition," a claimed coalition of two or three primary organizations, is less supportable. In these organizations, only one other individual, Ronald Beyer, is named, and Mr. Leithauser relies solely upon his *own* residence, his *own* authorization to represent the coalition, and his *own* representations as to the interests of these organizations in this proceeding, to support the coalition's intervention.

Be that as it may, we need not decide whether the coalition has standing to intervene and be represented by Mr. Leithauser. Because the coalition's stated interest in the proceeding (Leithauser letter, dated December 12, 1979) is that its members reside near the facility, as does Mr. Leithauser, and because a single set of contentions was submitted on his own and the organization's behalf, Mr. Leithauser's representation of the organization would add nothing to his personal intervention. Furthermore, notwithstanding a resolution of the issue of standing favorable to Mr. Leithauser, the Board

exercises its discretion, on balancing the five factors set forth in 10 CFR 2.714(a)(1), to not permit Mr. Leithauser's intervention either on behalf of himself or the coalition. Moreover, the Board notes that none of his contentions appear admissible so as to afford a basis for the intervention, with the possible exception of Contention Xd, which suggests a determination of the need for power, a matter on which the Board has requested further briefing (see discussion of O'Neill Contention VIII, *infra*). Even if that contention were admissible, it was previously raised by intervenor O'Neill and should not afford the sole basis for the separate intervention of Mr. Leithauser.

As good cause for his late filings, petitioner relies upon his personal and financial predicament which required his heavy work schedule. While this situation might constitute good cause for requesting interim relief and perhaps excuse some tardiness in his individual filings, it does not constitute good cause for his failure to read his mail (Tr. 65) and, on behalf of the Northwest Coalition, his failure to delegate his obligations in this proceeding to some other member. Consequently, although we do find that some good cause exists for his failing, on his own behalf, to meet the time limits imposed by the Board's September 25, 1979 Order and 10 CFR 2.714, that good cause is somewhat counterbalanced by his inexcusable failure to communicate with the Board or parties (as directed in the Board's September 25, 1979 Order) during the two-and-a-half month period between the issuance of the Order and the prehearing conference. With regard to the late filings of the Northwest Coalition, we determine that no good cause exists for a coalition of organizations to have permitted the personal predicament of one member of its constituent organizations to result in a total disregard of the Board's Order and N.R.C. regulations.

In reviewing petitioner's contentions to determine whether other means are available to protect his (and the Northwest Coalition's) interests, the Board finds that, not only are other means available, but that only means other than this proceeding are *appropriate* for protecting petitioner from the perceived harm. Contentions I, II, and Xa concern the long-term storage of spent fuel that is an issue before the Commission in its proposed rulemaking [44 Fed. Reg. 61372 (Oct. 25, 1979)] and cannot be considered in this proceeding. Contentions III, IV, V, Vi, and VII contain allegations and past instances of administrative, technical, and financial insufficiencies on the part of the licensee that are unrelated to the proposed fuel pool expansion and should properly be the subject of a show cause proceeding initiated under 10 CFR 2.202 and 2.206 rather than this license amendment proceeding. Similarly, Contention VIII alleges a safety hazard due to a design deficiency in the reactor which should also be the subject of a show cause proceeding, rather than a contention in this spent fuel pool expansion proceeding. Contention IX relates to the licensee's emergency plan, which is covered by Appendix E to 10 CFR Part 50, and is the subject of the Commission's proposed rulemaking,

the advance notice of which was published at 44 Fed. Reg. 41483 (July 17, 1979). The Commission's rulemaking proceeding would be the proper forum to question the adequacy of the emergency planning requirements. Contention XI is not a contention by itself; it merely incorporates all of the other contentions by reference and cannot be considered in any forum. Only Contention X relating to the need for power might afford the basis for an admissible contention (see the Board's discussion of O'Neill's Contention VIII and its request for further briefing on that contention, *infra*). Consequently, Mr. Leithauser's intervention is not only unnecessary to protect his and the Coalition's interest as expressed in his contentions, but, on the whole, improper. If the Board determines that the issue of the need for power can be heard, Mr. O'Neill's handling of that issue should obviate the need to permit Mr. Leithauser's intervention for that sole issue.

Nor can the Board find that petitioner's participation could reasonably be expected to assist in the development of a sound record in this proceeding in light of what we perceive to be a lack of relevance in his contentions and there being no indication that he possesses any special expertise that might otherwise assist us. With regard to direct participation, Mr. Leithauser could hope, at best, to assist in the Commission's rulemaking proceedings on waste storage and emergency planning or in show cause proceedings relating to the alleged lack of the licensee's competence or safety hazards in the reactor design. Any assistance that Mr. Leithauser could render to the development of a sound record in this proceeding could best be offered through his assistance to the admitted intervenors (which Mr. Leithauser came close to admitting, Tr. 62) and by limited appearance statements to the Board.

Furthermore, notwithstanding the apparent failure of his contentions to raise an admissible issue (with a possible exception of the need-for-power issue raised by O'Neill's Contention VIII), all of the broad areas of concern expressed in Mr. Leithauser's contentions have been raised in the admitted and non-admitted contentions of the other intervenors: Leithauser's Contention I, II, and Xa, relating to long-term waste storage, were covered by Christa-Maria Contentions 1, 5, and 6 and O'Neill's Contention I; Leithauser's Contentions III, IV, V, VI, and VII, relating to alleged past mismanagement and incompetence, were covered by O'Neill's Contention VII; Leithauser's Contention VIII, relating to a loss-of-water accident, was covered in O'Neill's Contention IIE; Leithauser's Contention IX, relating to emergency plans, was covered by Christa-Maria's Contention 9; Leithauser's Contention X, relating to "grandfather" exemptions, plant safety, and need for power, was covered by O'Neill's Contentions VI, VII, and VIII.

Finally, in view of the current deficiencies in his contentions, failing to exclude Mr. Leithauser at this juncture would result in delaying the proceeding because further efforts would have to be made to attempt to fashion admissible issues from his inadmissible contentions. However, as

demonstrated above, any admissible issues that might be fashioned at a prospective future conference would probably not broaden the issues, but would duplicate issues already raised by the other intervenors who have covered the general topics raised in Mr. Leithauser's unacceptable contentions.

In summary, while some good cause exists from Mr. Leithauser's having failed to file in timely fashion (and he would not be broadening the issues but merely duplicating them), the other factors that must be considered in determining whether to exercise the Board's discretion to admit him, weigh heavily against him. In addition, while not taken into account in balancing the 5 factors listed in 10 CFR 2.714(a) (1), Mr. Leithauser's demonstrated inability to focus his attention on this proceeding and his lack of financial resources make it unlikely that he could make a positive contribution to the proceeding—they suggest even further delay in the future. Consequently, Mr. Leithauser's petition for leave to intervene is *denied*. As provided by 10 CFR 2.714a, Mr. Leithauser may appeal this ruling to the Atomic Safety and Licensing Appeal Board within 10 days of service of this Order.

We note the October 1, 1979, Memorandum of the Appeal Board in *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521, suggesting that the Licensing Board allow argument on contentions before disallowing them. Here, however, unlike *Allens Creek*, we have not reviewed Mr. Leithauser's contentions to determine, on the basis of full argument, whether each of the issues raised is admissible. We have considered his contentions *as a whole* only to determine the threshold question of whether, in light of the nature of what he has presented to the Board, his intervention should be granted as a matter of the Board's discretion. Considering that the subject matter raised in his contentions has adequately been covered in the contentions presented by the admitted intervenors, which were argued at length at the prehearing conference, and that evaluating the factors listed in 10 CFR 2.714(a)(1) by viewing his contentions as a whole weighs heavily against permitting his intervention, we see no need to further delay this proceeding to schedule a second prehearing conference to argue Mr. Leithauser's late-filed contentions. In fact, Mr. Leithauser's lack of opportunity to fully defend his contentions was occasioned, not only by his failure to meet the prescribed deadline for submission of his contentions of 15 days prior to the conference, but by his not having those contentions at the conference itself where they could have been discussed (Tr. 61-62).

We now turn to a discussion of the specific contentions raised by the admitted intervenors.

Christa-Maria's Contentions

Contention 1 seeks to delay the expansion of the spent fuel pool until the

Commission has completed its "waste confidence" rulemaking proceedings and, if those proceedings determine that there is no reasonable assurance that facilities for off-site storage or permanent disposal of the spent fuel will be available before the expiration of the operating license, requests that the procedures to be established by the Commission under the waste confidence proceedings be followed to determine whether the spent fuel can be safely stored at this site. As clarified by Christa-Maria's counsel at the hearing (Tr. 74), the contention does not seek a delay of the hearing, but only of the issuance of the license amendment after all of the other factual issues have been heard.

Nevertheless, the granting or denial of the license amendment application is part of an individual facility licensing proceeding, which the Commission has ordered must continue without considering the issues involved in the rulemaking [44 Fed. Reg. 61372, 61373 (Oct. 25, 1979)]. Only a further order by the Commission can alter this procedure. Treating the "contention" as a motion to delay the issuance of the license amendment, the Board *denies it*, without prejudice to Christa-Maria's resubmitting a formal motion at the conclusion of the hearing. We note the timely submission of the accompanying request that whatever procedures are established by the Commission to determine the safety of long-term on-site storage be applied to this facility.

Contentions 2 and 3 were admitted pursuant to stipulation and the Board's admission of the stipulation (Tr. 70).

Contention 4 was withdrawn under the stipulation approved by the Board, subject to being re-asserted as a new contention within the same subject matter parameters before the close of discovery without objection as to lack of timeliness.

Contentions 5 and 6, concerning the effects of storing spent fuel at the site after the operating license has expired, were withdrawn under the stipulation subject to Christa-Maria's reservation of the right to re-file those contentions if the Commission determines in its generic rulemaking proceeding, prior to the conclusion of this proceeding, that on-site storage will be necessary after the expiration of the operating license. The staff and licensee reserved their right to take a position regarding the appropriateness of any such contention at the time it is filed.

Contention 7, relating to the release of radiation to the atmosphere through the containment ventilation system, was withdrawn at the hearing (Tr. 83-84), subject to being resubmitted with more specificity after discovery, under the same agreement as Contention 4, i.e., without the licensee or staff interposing an objection on the grounds of lack of timeliness.

Contention 8 requires the NRC to consider the consequence of a Class 9 accident on the prospective increase in the amount of radioactive spent fuel to be stored at the plant on the grounds that the occurrence at Three Mile Island No. 2 established the credibility of a Class 9 accident. The staff and licensee object to the consideration of a Class 9 accident as contrary to Commission policy, absent a substantial showing that special circumstances make a particular Class 9 accident more likely to occur at this facility. The licensee also denies that what occurred at Three Mile Island was a Class 9 accident and further asserts that, whether or not it was, Christa-Maria has failed to demonstrate the requisite nexus between the general allegations contained in Contention 8 and this licensing action. (Tr. 85-88.) In response, while still maintaining that the staff must consider all Class 9 accidents in each proceeding, counsel for Christa-Maria asserts as the nexus between a TMI-type accident and this proceeding, the lack of access to the containment at TMI because of radioactive contamination, and the consequences of not having access to the containment at this plant where the spent fuel pool is inside the containment.

We agree with the staff and licensee that even after Three Mile Island the Board must adhere to Commission policy of not considering Class 9 accidents in a particular proceeding unless some special showing is made of why a certain kind of Class 9 accident would be more likely at the facility in question. As written, Contention 8 violates Commission policy against considering Class 9 accidents in general as expressed in the proposed annex to 10 CFR Part 50, Appendix D [36 Fed. Reg. 22851 (Dec. 1, 1971)], is too broad to define the scope of the matters to be considered in litigation, and fails to establish the necessary connection (nexus) between the allegations and the proposed license amendment. (see *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194 (1978), *affirmed* CLI-79-9, 10 NRC 257 (Sept. 14, 1979).

However, counsel for Christa-Maria did raise a particular issue (Tr. 91-92) regarding the possibility of a TMI-type accident which would prevent entry to the containment to fully maintain the spent fuel pool, which the Board itself indicated (Tr. 162) should be addressed in this proceeding when O'Neill's Contention IIE-2 was discussed. Accordingly, the Board denies Contention 8 as written, but admits Christa-Maria's Contention 8 and O'Neill's Contention IIE-2, re-written by the Board as follows:

The occurrence of an accident similar to TMI-2 which would prevent ingress to the containment building for an extended period of time would render it impossible to maintain the expanded spent fuel pool in a safe condition and would result in a significantly greater risk to the public health and safety than would be the case if the increased storage were not allowed.

In view of the Board's acceptance of this restated contention which duplicates a proposed Board question (Tr. 162), the Board question *is withdrawn*.

Contention 9 asserts the inadequacy of emergency planning for the facility in light of the events at TMI-2. It requires that emergency planning be based upon a "worst case analysis" of potential accident consequences related to the spent fuel pool. It mentions as a particular, requiring the plan to take into account the significant increase in radioactive spent fuel to be stored at the plant under the license amendment.

The staff and licensee objected to what appeared to be the use of this proceeding concerning the proposed spent fuel pool expansion for a general attack upon the adequacy of the emergency plan, especially in light of the Commission's advance notice of proposed rulemaking concerning emergency planning published at 44 Fed. Reg. 41484 (July 17, 1979).

At the conference, Christa-Maria's counsel narrowed the scope of the contention (Tr. 113) to the question of whether the proposed spent fuel pool expansion itself, because of the increase in the storage of spent fuel, requires a change in the emergency plan. The licensee and staff (Tr. 115-117) indicated no objection to the contention as more narrowly limited at the conference for purposes of discovery, but asserted that the intervenor should have to specify before the hearing the specific changes required in the emergency plan because of the increased fuel storage. Counsel for Christa-Maria agreed. (Tr. 117). Accordingly, with that proviso, requiring more specificity before hearing, the Board accepts the contention reworded as follows:

The expansion of the spent fuel pool requires a change in the emergency plan to take into account the significant increase in radioactive spent fuel that will be stored at the site.

John O'Neill's Contentions

Contentions IA, IB-1 thru 4, and IB-6 request an immediate suspension of this proceeding (unlike Christa-Maria's Contention 1, which requested a delay of the issuance of the license amendment *after* hearing) until the issue of long-term disposal of wastes is decided in the waste confidence rulemaking proceeding established at 44 Fed. Reg. 61372, October 25, 1979. Mr. O'Neill submits (Tr. 123-124) that under the notice of proposed rulemaking the Board has the discretion to not proceed with normal licensing procedures and *should not* under the circumstances of this proposed license amendment. Mr. O'Neill relies (Tr. 123), in particular, on the Notice's statement (44 Fed. Reg., 61373) that *State of Minnesota v. NRC*, 602 F.2nd 412 (D.C. Cir. 1979) supports the the Commission's conclusion that licensing practices "need not" be altered during the rulemaking proceeding. As Mr. O'Neill points out (Tr. 123), "need not" is discretionary, rather than compelling, wording.

Mr. O'Neill confuses the Commission's discretion with that of the Board. The Notice of Proposed Rulemaking cited the D.C. Circuit Court's approval of the Commission's conclusion that licensing practices need not be altered during the rulemaking proceeding, upholding the Commission's discretion to so provide. The Notice of Proposed Rulemaking goes further, to actually provide that the on-site storage of radioactive waste for the duration of the license will continue to be adjudicated in individual facility licensing proceedings, subject only to whatever final determinations are reached in the rulemaking proceedings. This Board is not empowered to overrule the Commission's exercise of discretion. The request for a delay of the hearing is *denied*.

Contention IB-5 was discussed by the parties prior to the conference, made more specific in the written briefs submitted by Mr. O'Neill at the conference, and agreed to by the staff and licensee if rewritten with that specificity. The contention is rewritten by the Board and admitted, as follows:

The corrosion and degradation of the materials of construction of the pool, pool liner, fuel elements, and racks (for example, concrete, stainless steel and aluminum) will be accelerated by the stresses caused by expansion and, as a result, the pool and racks will not retain their integrity through the remaining term of the operating license.

Contention IB-7 required the licensee to demonstrate its financial ability to maintain the fuel pool, including its increased storage of radioactive waste. At the conference (Tr. 128), Mr. O'Neill limited the concerns about the licensee's solvency to the unexpired period of the license. The Board agrees with the staff's and licensee's position that there is no basis for a contemporaneous examination of the licensee's solvency, a matter that was examined when the construction permit and original license were granted. We do not understand this contention to be based upon the allegation of any financial strains that might occur because of the cost of the re-racking operation, the only possible nexus with this proceeding. If the licensee's financial ability to maintain the plant has been impaired since the granting of the original license (a matter not alleged by the intervenor), Mr. O'Neill should request the issuance of an Order to Show Cause under 10 CFR 2.202 - not the admission of a contention in a spent fuel pool expansion proceeding. The contention is *denied*.

Contention IB-8 requests a denial of the license amendment on the grounds that the licensee addressed only the issue of increased capacity of the spent fuel pool, but not the increased length of storage of the spent fuel. Intervenor contends that implicit in the original operating license was the consideration of the spent fuel pool as a one-year repository for each load of

spent fuel, which was then to be shipped off-site. (Tr. 133-137.) The staff points out (Tr. 132-133) that there is nothing in the original operating license that limits the storage to a single year, and that, moreover, the effects of long-term storage would be considered under Contention IB-5, which the parties agreed to admit.

There is some logic to Mr. O'Neill's position that only a short period of storage was contemplated in the original operating license, if only by the use of arithmetic, since only a few off-loadings of spent fuel could be accommodated in the limited spent fuel pool originally planned. Nevertheless, intervenor has not suggested (other than what has already been admitted in Contention IB-5) that the long-term storage of particular fuel elements poses any greater danger or produces any greater effect upon the environment than the continuous storage of different spent fuel elements over that same term of operating license where those elements are turned over with great frequency (i.e., stored for a year and then shipped off-site). Rather, Mr. O'Neill seems merely to raise the legal issue that the expansion of the fuel pool, with its implicit transformation of the license from short-term to long-term storage, should transform the request for a license amendment into a request for a new operating license. But even if a new operating license proceeding were called for, intervenor has not raised any specific issues in this contention that could be adjudicated in such a proceeding. Consequently, the contention must *be denied*. See, however, what has already been admitted in Contention IB-5 and the Board's later discussion of Contention VIII.

Contention IIA contended that routine releases of radioactivity during the installation of new racks, through evaporation, through the walls and floor of the pool (especially the south wall), and during core off-loading, may cause health and environmental hazards, and that there is no safe level of radiation. The staff and licensee objected because the contention appeared to challenge the exposure standards contained in 10 CFR, Parts 20 and 50. At the conference, Mr. O'Neill (Tr. 141-142) indicated that his contention accepted the standards established by the regulations and alleged that those standards would be exceeded by the licensee's releases of radiation. He further specified (Tr. 142-144) that the releases covered are limited to occupational exposure and releases to the general public through the south wall of the pool. On that basis, the staff and licensee withdrew their objections to the contention. (Tr. 142-145.) Accordingly, the Board restates and accepts the following contention:

The routine releases of radioactivity during the installation of new racks, the loading of those racks, and storage of fuel in the racks will exceed the limits imposed by 10 CFR Part 20 on the exposure of workers, as will the releases of radioactivity through the south wall of the pool exceed the limits imposed by Appendix I to CFR Part 50 on exposures to the general public.

Contentions IIB was agreed to by the staff and licensee as reworded at the conference (Tr. 146-147) and admitted here by the Board, as follows:

The licensee's plan is deficient in failing to discuss the environmental hazards associated with small to medium leaks of radioactive water from the expanded spent fuel pool.

Contention IIC was discussed, modified, and accepted by the parties as modified, at the conference (Tr. 147-152). The Board accepts the modified contention, restated as follows:

Licensee's plan, which provides for make-up water to replace water being lost from the pool at rates of up to 200 gallons per minute, is deficient because it does not consider the impact of the lost water on health and safety or on the environment.

Contention IID raised the prospect of a cataclysmic breach of the containment and loss of coolant, and a consequent impact on the environment, as the result of the crash of a B-52 bomber or sabotage by a political group or deranged employee. The staff objected (Tr. 152-153) on the grounds that the initiating events mentioned are Class 9 events, which the Board should not consider and that, even if one of the initiating events were considered credible, this license amendment proceeding is not the proper forum to deal with the general consideration of the effects of one of these initiating events. The licensee conceded (Tr. 153-154) that a B-52 crash is not a Class 9 accident because there is an Air Force low-level training air corridor in the vicinity, but objected on the grounds that there is no nexus between the three additional racks in the pool and a B-52 crash or sabotage, and that considering the sabotage issue is a challenge to the Commission's regulations.

During the limited appearance statements, the Board was informed (Tr. 17) of a B-52 crash in the vicinity in January of 1972. Furthermore, that possibility had never been the subject of a licensing proceeding. (Tr. 159.) Notwithstanding that the possibility of an air crash is now being considered under the staff's Systematic Evaluation Program (Tr. 154), the Board agrees that the possibility of such an accident's occurring should be considered at a licensing proceeding in view of the alleged increased danger in storing additional fuel.

However, we agree with the licensee that there is no nexus between the sabotage issue and this proceeding. The Commission has provided for an orderly manner for considering the prevention of sabotage at nuclear facilities and the intervenor has made no showing to suggest that the increased number of fuel elements stored in a pool should require a change in the plan.

Accordingly, the Board admits the following rewritten contention:

The licensee has not adequately provided for the protection of the public against the increased release of radioactivity from the expanded fuel pool as a result of the breach of the containment due to the crash of a B-52 bomber.

Contention IIE-1 alleges that, since the Three Mile Island accident, Class 9 accidents must be taken into consideration. Because the reference is to Class 9 accidents in general, and not to any particular Class 9 accident that might have some particular relevance to this proceeding, the contention is *denied*. See *Offshore Power Systems (Floating Nuclear Power Plants)*, *supra*.

Contention IIE-2 raised the possibility of a Class 9 accident causing a release of radiation into the containment building. The Board accepts as this contention its restatement of Christa-Maria's Contention 8. See discussion, *supra*.

Contention IIE-3 raised the prospect of criticality being reached because of the closer storage of spent fuel in the additional racks. At the conference (Tr. 178), Mr. O'Neill indicated that the contention was limited to situations not involving a gross distortion of the racks. The staff and licensee (Tr. 172-174) indicated that they have no objection. Accordingly, the Board admits the contention, restated as follows:

The application has not adequately analyzed the possibility of criticality occurring in the fuel pool because of the increased density of storage without a gross distortion of the racks.

Contention IIE-4 stated that the containment shell is inadequate protection from massive gamma ray radiation, and cited a newspaper article which referred to a possible loss-of-water accident involving the increased storage of spent fuel as proposed in the license amendment. The staff and licensee objected on the grounds that no specific scenario was given for suggested accidents, other than a Class 9 accident, which should not be considered, and, further, that there was nothing to connect the consideration of the adequacy of the containment shell to an enlarged spent fuel pool.

The Board considers the adequacy of the containment shell to protect the public from any accident involving the expanded fuel pool to be a proper subject for consideration in this proceeding. Accordingly, we admit the following re-stated contention:

In the event of an accident which results in a substantial release of radioactivity from the expanded fuel pool, the containment building does not provide adequate shielding to protect the public health and safety.

Contention IIF states that no consideration was given to the concentrating of fission products in the food-chain resulting from the release of radiation from the increased number of fuel assemblies stored. The staff and licensee objected on the grounds that, with regard to routine releases of radiation, the intervenor was challenging the standards established in Appendix I to 10 CFR Part 50 and that, with regard to accidental releases, there was a lack of basis and specificity because no specific accidents were discussed that could cause the discharge of spent fuel pool water into Lake Michigan, which was contrary to the design base of the plant. In response, Mr. O'Neill indicated (Tr. 190) that he is not challenging the NRC standards for radiation, but relying upon instances in which measured radiation would be increased through the food-chain in excess of those standards. Furthermore, with regard to accidental releases, he was relying (Tr. 190) upon past instances of leakage from the spent fuel pool that had been referred to in a limited appearance statement (see Tr. 34-36).

Without determining whether there is any factual support to intervenor's contention, the Board restates the contention, and admits it in a form that should obviate the objections, as follows:

Because of the expansion of the spent fuel pool, routine releases, and accidental releases similar to those that have already occurred, of effluents will no longer meet the guidelines of Appendix I, Sections II and IV of 10 CFR Part 50 because, in violation of Appendix I, Section III A.1, the required calculations do not estimate bio-accumulation factors in a manner appropriate to this site.

Contention IIG originally made some very general criticisms of the proposed spent fuel pool expansion. As a result of the Board-ordered consultation with the staff and licensee prior to the conference, Mr. O'Neill submitted a revised contention which, as further refined during the conference, proved acceptable to the staff and licensee. The Board accepts the revised, two-part contention, restated as follows:

(a) Administrative controls proposed to prevent a cask drop over the pool are inadequate. These are mentioned on pages 4 - 9 of the application. Administrative controls have proved inadequate in the past in preventing incidents and are frequently violated at the plant.

(b) Fuel has escaped the racks and remained undiscovered for a considerable time. Because the design of the new rack does not specifically address this occurrence, the design is deficient.

Contention III consisted of expressions of Mr. O'Neill's statements of interest in the proceeding to support his intervention. He withdrew this contention. (Tr. 202.)

Contention IV stated that an adequate evaluation could not be made of the proposed modification of the pool because actual manufacturing specifications had not been presented. The parties agreed (Tr. 203-205) that this contention would be withdrawn, subject to being re-introduced in more specific form before the conclusion of discovery without objection for lack of timeliness, under the same agreement covering Christa-Maria's Contentions 4 and 7.

Contention V is an attack on the Price-Anderson Act. It is *denied*.

Contention VI questioned whether there had been "grandfather" exemptions given to the licensee for its storage pool which would render that pool unsafe for the proposed expansion. Although the staff objected (Tr. 206-207) on the grounds of lack of specificity, the intervenor and licensee were agreeable (Tr. 206-207) to a withdrawal of this contention under the same agreement applying to Contention IV and Christa-Maria's Contentions 4 and 7. The Board agrees to the stipulation of the intervenor and licensee.

Contention VII requested a review of general plant safety. At the conference, Mr. O'Neill indicated (Tr. 208-210) that he was referring to the past history of reportable incidents which suggested to him past mismanagement in the operation of the plant and a likelihood of future mismanagement of an expanded fuel pool. Upon prodding from the staff (Tr. 210), Mr. O'Neill indicated (Tr. 211) a willingness to limit his contention to past incidents involving the spent fuel pool, rather than including the general operating history of the plant. The staff continued to object on grounds (Tr. 211) that an enforcement proceeding, rather than this licensing amendment proceeding, would be the appropriate forum to deal with the licensee's technical competence. The licensee continued to object (Tr. 211-213) on the grounds of Mr. O'Neill's lack of specificity in detailing the particular instances of alleged mismanagement, although the licensee would not object to deferring this contention pending discovery to allow Mr. O'Neill to raise specific instances on which he relies.

The Board agrees with Mr. O'Neill that the ability of the licensee to manage an expanded spent fuel pool, as evidenced by its past practices, is within the scope of a proceeding to license any expansion of the spent fuel pool. A determination of the licensee's competence must necessarily be based upon an accumulation of prior practices, although the intervenor would have to specify each instance upon which he relies some time before the hearing. Furthermore, notwithstanding Mr. O'Neill's concessions at the conference, we are unpersuaded that the alleged mismanagement of the plant in general should have no bearing on determining the licensee's ability to manage an expanded spent fuel pool. Accordingly, with the understanding that the

intervenor must list the incidents upon which he relies in advance of the hearing, we admit the following restated contention:

Because of the licensee's history of mismanaging the plant, especially the spent fuel pool, it has demonstrated an inability to properly manage an expanded spent fuel pool.

Contention VIII, in addition to again requesting a review of general plant safety, contended that the granting of the license 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 conference (Tr. 215-216), the intervenor further contended 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 (Tr. 217) on the grounds 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 Board defers ruling on this contention. It expects, as does licensee, that the staff will 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 is not satisfied that the issuance of a negative declaration resolves the issue of whether, in this case, a cost-benefit analysis or other weighing of the need for power is required. See, for example, Part III "Jurisdiction to Consider Need for Power" of the January 10, 1980 Initial Decision in Dairyland Power Cooperative (La Crosse Boiling Water Reactor), Docket No. 50-409 (SFP License Amendment, LBP-80-2, 11 NRC 44).

Accordingly, the Board requests that the parties brief the following question by February 15, 1980: Where the facility has never been subjected to a 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?

Mr. Leithauser, if he desires, may also brief this question within the time limit and submit, with his brief, a motion to reconsider his petition to intervene on this issue if the issue is admitted into the proceeding.

Discovery

Prior to the conference, the staff, licensee, and intervenor Christa-Maria agreed to an 11-step schedule culminating with hearings commencing 154 days after the issuance of the SER and EIA. Because of a possibility that the prospective date for the commencement of the hearings (Step 11) would conflict with Mr. O'Neill's work commitments, the Board agreed to the first ten steps of the hearing schedule, as follows:

1. Informal discovery commenced on December 5, 1979. All parties agree to use informal discovery procedures and to abide by the Commission's regulations concerning the time for responding to discovery. Formal discovery on the admitted contentions commences with the issuance of this Order.
2. SER and EIA estimated to issue by mid-February 1980.
3. Requests for additional discovery permitted within 20-days after issuance of SER and EIA.
4. Replies to discovery requests under (3) due within 40 days of SER and EIA issuance.
5. Filing any new contentions based on new information contained in SER and EIA within 47-days of SER and EIA issuance.
6. Responses to new contentions filed under (5) due within 54-days after SER and EIA issuance.
7. Motions for summary disposition filed within 74-days after SER and EIA issuance.
8. Replies to motions for summary disposition filed within 94-days after SER and EIA issuance.
9. Board ruling on summary disposition motions is expected within 114-days after SER and EIA issuance.
10. Written testimony filed on remaining issues 134-days after SER and EIA issuance.

The Board will, of course, entertain requests to extend the time limits. Any delays permitted the parties or taken by the Board in meeting the schedules will defer the succeeding steps accordingly, unless the Board specifies to the contrary.

The Board requests that the staff supply the Board, and each of the parties who has not yet received them, with copies of the 1976 German Report No.

290 and 1978 revision (see Tr. 170).

Finally, the Board poses the following question to the Staff:

Is the information contained in the document, "Board Notification-Licensee Regulatory Performance Evaluation" dated February 1979, and sent to the ASLBP members under a covering letter from William D. Paton, of relevance to this case? If so, provide detailed information with respect to its relevance.

This Order is subject to appeal to the Atomic Safety and Licensing Appeal Board pursuant to the terms of 10 CFR 2.714a. Objections to this Order may also be filed by parties as provided by 10 CFR 2.751a(d).

Dr. Oscar H. Paris and Mr. Frederick J. Shon concur in this Order.

BY ORDER OF THE BOARD

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Herbert Grossman, Chairman

**Dated at Bethesda, Maryland,
this 17th day of January, 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 1)**

**(Restart)
January 25, 1980**

The Licensing Board issues its third special prehearing conference order in this restart proceeding, admitting some revised emergency planning contentions and rejecting others; and denying alternative requests for reconsideration or certification to the Commission of earlier rulings on other specified contentions.

THIRD SPECIAL PREHEARING CONFERENCE ORDER

In this order the board continues to rule on revised contentions and requests for reconsideration of earlier rulings made pursuant to 10 CFR 2.751a.

Emergency Planning Contentions—Criteria

Timely revisions to emergency planning contentions have been filed by Union of Concerned Scientists (UCS), Mr. Sholly, Newberry Intervenors, and Anti-Nuclear Group Representing York (ANGRY).¹ Several of the revisions challenge the adequacy of the 10-mile emergency planning zone (EPZ) for the plume exposure pathway employed by the licensee in its emergency plan. In the Licensee's Response to Emergency Planning Contentions dated January 2, 1980, the licensee describes the history behind

¹ Late revisions to emergency planning contentions have been filed by Environmental Coalition for Nuclear Power (ECNP), Newberry Intervenors, and Mrs. Aamodt. The board will rule upon these revisions in a future order.

the Commission's proposed rule for emergency planning (44 Fed. Reg. 75167, published December 19, 1979). The history includes a formal NRC policy statement which endorses the 10-mile plume and 50-mile ingestion zones and endorses NUREG-0396.² This statement was published on October 23, 1979, 44 Fed. Reg. 61123. The proposed rule itself incorporates 10-mile plume and 50-mile ingestion zones.

Pointing to the policy statement and the proposed rule, licensee asserts that all contentions challenging the 10-mile and 50-mile EPZs in licensee's emergency plan should be barred as challenges to formal NRC policy. Licensee's Response, pp. 3-6.

The staff in NRC Staff Response to Revised Contentions, dated January 8, 1980, takes a different position. The Staff does not regard the Commission's policy statement endorsing the 10-mile plume EPZ as a bar to contentions challenging the licensee's 10-mile evacuation plan. The staff refers to the Commission's order of August 9, 1979, at page 8 where it is recommended that the licensee have the capability to take appropriate emergency actions for the population around the site for a distance of 10 miles as a long-term action. The staff argues further that the sufficiency of that recommendation may be raised as an issue. Staff Response, p. 2. The staff's view is consistent with our ruling in the First Special Prehearing Conference Order, December 18, 1979 (p. 7, 8), where we held that the Commission, at page 12 of its order, authorized an inquiry into the sufficiency of the short- and long-term actions recommended for the licensee. By this reasoning, staff urges a standard by which we would accept contentions challenging the sufficiency of the licensee's 10-mile plume EPZ, but such contentions must specify why the 10-mile radius is inadequate in terms of the scope of this proceeding. Staff response, p. 3. The staff would be guided by the Commission's August 9 order, not the policy statement or proposed rule.

Mr. Sholly, responding to the licensee's objection to his EPZ contentions, accepts rulemaking as the proper forum in which to pursue the Commission's policy on the EPZ concept, but challenges licensee's interpretations of NUREG-0396.³ Mr. Sholly correctly observes that NUREG-0396, which was embodied in the policy statement and is referenced in the proposed emergency planning rule, would not impose an absolute 10-mile EPZ; that considerable judgment is required based upon consideration of local conditions. Mr. Sholly's Response, pp. 2-6.

² Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, December 1978.

³ Intervenor Steven C. Sholly Response to Licensee Objections to Revised Emergency Planning Contentions, January 7, 1980. There are no express provisions for responding to objections to contentions in the Rules of Practice, but such responses are appropriate. See the discussion on p. 147, n. 12, *infra*.

Our rulings on the EPZs are based upon consideration of both the staff's analysis and Mr. Sholly's observations. First, we view the recommendation in the order that licensee plan to take emergency actions for the population 10 miles around the site to be a rebuttable presumption that 10 miles for a plume EPZ is adequate. The sufficiency of the 10-mile radius may be challenged for the reasons we stated in the First Special Prehearing Conference Order, *supra*.

The Commission, in discussing the rationale for the proposed changes in emergency planning rules, stated that the proposed rule is an interim upgrade of NRC emergency planning regulations. 44 *Fed. Reg.* 75169, 75170. Even though the proposed rule may not have the force of an interim rule, its use in measuring the reasonableness and sufficiency of licensee's emergency plan is appropriate and is authorized by the Commission's rationale.⁴ For our purposes, the following description of the EPZs, discussed under both alternatives of the proposed rule, is relevant:

Generally, the plume exposure pathway EPZ for nuclear power reactors shall consist of an area about 10 miles in radius and the ingestion pathway EPZ shall consist of an area about 50 miles in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to the emergency response needs and capabilities as they are affected by such local conditions as demography, topography, land characteristics, access routes, and local jurisdictional boundaries. The plans for the ingestion pathway shall focus on such less immediate actions as are appropriate to protect the food ingestion pathway. 44 *Fed. Reg.* 75170 and 75171.

Accordingly, we will accept emergency planning contentions which specify local circumstances raising questions about the adequacy of the licensee's EPZs, but reject unspecified contentions which challenge the basic concept of the 10-mile and 50-mile EPZs. We will look to the proposed rule and its referenced documents for guidance during this phase of the proceeding. We will, of course, adjust to changes appearing in the final rule which will probably be in effect before the hearing is concluded.

UCS Revised Contention 16

In our First Special Prehearing Conference Order we rejected USC's emergency planning contention, No. 16, which asserted that emergency planning should be based on "a worst case analysis of the potential accident consequences of a core melt with breach of containment." We viewed the

⁴ No party asserts the pendency of the rulemaking proceeding as a bar to adjudication of emergency plans because, as we noted, emergency planning is a mandatory issue under the August 9 order.

contention to be too vague, insufficient in bases and without nexus to the TMI-2 accident. Now UCS resubmits basically the same contention, but adds a requirement that emergency planning also be based upon a "weather-dependent worst case analysis." The board agrees with the licensee and the staff that the revision fails to correct the original defects. It provides no ground to reverse our earlier ruling.

We feel, however, that UCS is entitled to have its new arguments supporting the revised contention addressed by the board.⁵ It is true, as UCS reminds us, we stated that evidence may have to be presented on the question of whether evacuation plans adequately consider the credible consequences of an accident. First Special Prehearing Conference Order, p. 24. We have planned for this eventuality by requiring the staff to report to us and to the Commission:

. . . whether or not (and the reasons therefor) any specific accident sequence, which has a reasonable nexus to the TMI-2 accident and which heretofore may have been regarded as a Class 9 accident, should be considered in the analyses of the acceptability of returning TMI Unit 1 to operation.

Id., p. 17.

In addition the board has admitted specific Class 9 accident contentions having a reasonable nexus to the TMI-2 accident. We anticipated further analysis of the subject in connection with the evidentiary showing under UCS's Contention 13 and evidence to be presented under the long-term issues included in the Commission order incorporating Recommendation 2.1.9.3 (transients and accidents) of NUREG-0578.

While UCS may be correct (so far as we know) in that the licensee and the staff have not posited a design basis accident for emergency planning, it is a *non sequitor*, we believe, to try to justify accepting UCS's Contention 16 on that account. Until the record is more fully developed, the Board must retain a selection of options in accepting accident bases for emergency planning.⁶

UCS also addressed the due process considerations in using a Commission policy statement endorsing a 10-mile plume EPZ. Reply, pp. 5-7. We believe that UCS has recited generally accepted administrative law in citing *Pacific Gas and Electric Company v. FPC*, 506 F.2d, 33, 38 (D.C. Cir. 1974). However, UCS has not anticipated the manner in which this Board will apply the Commission's policy statement and proposed rule. This Board is not an agency seeking to bootstrap a policy statement or proposed rule up to a

⁵ Union of Concerned Scientists Reply to Licensee's and Staff's Objection to Emergency Planning Contention, January 14, 1980.

⁶ We recommend that the parties with emergency planning issues become familiar with the discussion of accident considerations in NUREG-0396, pp. 4-6, and Appendix III where the Task Force declines to attempt to define a specific accident sequence for emergency planning.

properly adopted substantive rule. We are a component of the Commission working toward an initial decision. The proposed rule and policy statement are useful to us only to construe the order and notice of hearing, which hearing, it must be recalled, is entirely within the Commission's discretion.

Sholly's Emergency Planning Contentions

There are no objections to Mr. Sholly's revised emergency planning contentions 8 A-B, 8 E-P, 8 R, 8 U-Y, 8 AA-DD and 8 FF-GG, which are accepted as issues in controversy.

Mr. Sholly's Contention 8 C challenges licensee's failure to consider local contentions in adopting the 10-mile plume EPZ. We accept the contention over licensee's objection, but we agree with the staff that the contention should be made more specific in the course of discovery.

Mr. Sholly's Contention 8 D faults the licensee's emergency plan because there is no evidence that Class 9 accidents are considered. We reject the contention, but not for the reason advanced by licensee (that it is an impermissible attack of the 10-mile EPZ) but because it lacks specificity. The contention as worded is not litigable. This defect remains even after Mr. Sholly explains his contention in his response (p. 5, 6). However, Mr. Sholly has raised a question which needs to be answered.

Licensee stated in its objection to Contention 8 D that the 10-mile EPZ is in fact based upon both design basis and less severe core melt accidents (*i.e.*, some Class 9 accidents). Licensee's Response, p. 13. Mr. Sholly, in his response to the objection, explains that he is not attacking the consideration of Class 9 accidents assumed in NUREG-0396. He wishes to know if the licensee's emergency plan has in fact incorporated the Class 9 considerations of NUREG-0396 into its emergency plan. The question needs answering. Perhaps the licensee, by adopting 10-mile and 50-mile EPZs into its emergency plan, believes that it has thereby implicitly assumed the same Class 9 considerations embodied in NUREG-0396; we do not know. As the licensee points out, it may be premature to involve the board in a substantive review of its emergency plan (Response, p. 3) so we, as well as the intervenors, need guidance through the plan. Therefore, licensee is directed to provide further explanation of its position on this issue. The explanation may require a reconsideration of our ruling on Mr. Sholly's Contention 8 D.

Mr. Sholly's Contention 8 Q is accepted. His explanation of the contention in his response (p. 6) is satisfactory.

Mr. Sholly's Contention 8 S is also accepted for the reasons set forth in his response (pp. 6, 7).

Mr. Sholly's Contention 8 T is, as he acknowledges in his response, "somewhat vague." But the board believes the subject matter is important and, over the licensee's objection, we accept the contention. Mr. Sholly offers to provide greater detail and specificity. This is required and should be provided as soon as practicable before the close of discovery.

Mr. Sholly's Contention 8 Z asserted that the licensee has no "legal means" to control access to the exclusion area on the Susquehanna River. Both the staff and licensee equated "legal means" with "ownership" of the affected portions of the waterway. This meaning, they assert, is an attack upon 10 CFR 100.2(a) which does not require ownership of the exclusion area. Mr. Sholly has offered to delete the word "legal" in the contention, but we see no need for the deletion; "legal means" does not mean "ownership." The Board accepts the contention with the explanation offered by Mr. Sholly in his response, but we modify the contention to read ". . . Licensee has no reliable and legal means to control access;"

Mr. Sholly's Contention EE is withdrawn in his response to the objections. His emergency planning contentions should not be redesignated as he attempts to do. The board prefers to have a void in the alphabetical scheme rather than to risk confusion in the identify of contentions.

Newberry Intervenor Emergency Planning Contentions

There are no objections to Newberry Intervenor's Contentions 3(a) (3) and (4), 3(b) (1) and (4) through (20), and 3(c) (1) through (7). Contentions 3(a) (3) and (4) are discussed and limited below, however.

Newberry Contention 3(a) (1) is an unspecified challenge to the 10-mile plume EPZ and is rejected because it lacks specificity.

Newberry Contention 3(a) (2) appears to be based upon the meaning of "low population zone" in 10 CFR 100.3(b) and 100.11(a)(2). As used in the contention, which related to all of Newberry Township, "low population zone" is meaningless. The contention fails for that reason.

Newberry Contentions 3(a) (3) and (4), as noted above, are accepted without objection. However, the staff correctly observes that if these contentions seek to raise siting issues, they are beyond the scope of the proceeding. We do not read them as raising siting issues.

Newberry Contention 3(a) (5) is not actually a contention under the 3(a) series, but appears to be a summary introduction to the 3(b) series and is rejected as redundant.

Newberry Contention 3(b) (2) would, without explanation or evident justification, arbitrarily extend the 10-mile plume EPZ to a distance of more than 12 miles. Apparently, the contention would require that all of the York County be included in the plume EPZ. The contention is rejected.

Newberry Contention 3(b) (3) is functionally indistinguishable from its Contention 3(b) (15). For that reason it is rejected in favor of 3(b) (15) which has been accepted above.

Newberry Contention 3(b) (21) alleges that the licensee's emergency plan is deficient in that it does not provide for mock evacuation drills. Staff does not object but the licensee objects on the ground that the Commission considered and rejected evacuation drills in an earlier petition for rulemaking. Licensee's Response, pp. 11, 12. We do not regard the previous disposition to be binding upon this particular proceeding. To accept it as an issue now would not be to "relitigate the matter" as licensee asserts. *Id.* The contention is accepted.

Newberry's Contention 3(c) is acceptable to the licensee and staff except for the sentence "The Dauphin County Emergency Plan is inadequate because it is not based on a weather dependent worst case analysis of the potential consequences of a core melt down with breach of containment." We agree that the sentence is not suitable, and for the reasons discussed in relation to UCS Contention 16, we delete the sentence from the contention which is otherwise accepted as an issue.

Newberry Contention 3(c) (9) assails the Dauphin County emergency plan because it does not indicate how long evacuation outside a 20-mile radius of TMI would take. The contention is unspecific and is rejected for the reason stated in the general discussion of the EPZ criteria above.

ANGRY's Emergency Planning Contentions

ANGRY's emergency planning contentions revision filed on December 18, 1979, does not affect their original emergency planning Contentions II or III(C). The Board has already ruled in the First Special Prehearing Conference Order that Angry's Contention I was not acceptable. There are no objections to ANGRY's Contentions II(F), III(A) (b) through (j), III(B) (b) through (e), and III(C). These contentions are accepted.

ANGRY's Contention II(A) faults the licensee's emergency plan because the emergency response plan of the Commonwealth of Pennsylvania does not have the concurrence of federal agencies, NRC and FEMA. Licensee acknowledges that the proposed emergency plan rule addresses the issue.

However, licensee states that, until the NRC amends its rules requiring concurrence as a condition to facility licensing, it opposes any such requirement in this proceeding. The licensee's position, we believe, is sharply inconsistent with its position that the very same proposed rule permits a plume EPZ limited to 10 miles in this proceeding. The contention raises a litigable issue and is accepted.

ANGRY's Contention II(B) is too vague and is therefore rejected.

ANGRY's Contention II(C) asserts that the 10-mile EPZ is too limited because a 20-mile evacuation was given serious consideration during the TMI 2 accident. ANGRY would have the EPZ extend as far as 100 miles to include all areas adversely affected by the consequences of a nuclear accident. The underlying premise of the contention (20-mile evacuation considered during the accident) is illogical. The balance of the contention is so unbounded as to render it unacceptable for litigation.

ANGRY's Contention II(D) is parallel to Contention II(A) but it relates to county emergency plans rather than to Pennsylvania's plan. Licensee objects on the same inconsistent ground. We accept the contentions for the same reasons.

ANGRY's Contention II(E) is accepted. Licensee's objection to the contention is overruled in part because its reference to Section 4.8.0 of its emergency plan appears to the board to be inaccurate.

ANGRY's Revised Contentions III(A) and (B) supersede entirely its original Contentions III(A) and (B).

ANGRY's Contention III(A) (a) asserts that the licensee's 10-mile EPZ lacks substantial basis in logic or fact, citing Regulatory Guide 1.70, Section 13.3.1. ANGRY ignores the 10-mile reference in the Commission's order, the policy statement and the proposed rule. The contention is denied because it is without basis and specificity.

ANGRY's Contention III(B) (a) again challenges without explanation or elaboration the use of a 10-mile plume EPZ. The contention is rejected.

Other Considerations

ANGRY Revised Contention VI

On December 18, 1979, ANGRY filed a revised Contention VI apparently in response to the board's rejection of its previously filed Contention 6 in the

First Special Prehearing Conference Order at p. 37.⁷ However, notwithstanding a new lengthy bases section, ANGRY presents no refinement or elaboration in support of the contention which cures the defects previously noted by the board. If anything, the slight revisions (there are deletions and additions beyond those pointed out in the licensee's response of January 2, 1980) are in the direction of broadening the contention and making it less specific. For example, insertion of the word "reasonably" does not assist to specify better ". . . all conceivable combinations of human and mechanical failure." The requirement for operator training broadens instead of specifies the contentions.

The bases advanced by ANGRY, which includes extensive quotations from NUREG-0578 (TMI-2 Lessons Learned Status Report) and the President's (Kemeny) Commission Report, support the proposition that the overall broad topic of methodology of determining and analyzing design bases accidents is important and of great current concern. There is no dispute on this. This does not mean that any vague unbounded contention on the subject is admissible.

ANGRY states at the end of its Contention 6: "The measures specified in the NRC's August 9 order fail to impose these essential conditions to the restart of TMI-1." Thus it can be seen that ANGRY, recognizing its contention falls outside the scope of the Commission's order, is quarreling with the Commission's judgment on the scope of the proceeding, not with our interpretation of it.⁸

It is also important to note that in denying its contention, the board permitted ANGRY to adopt UCS Contention 13. As noted in our First Special Prehearing Conference Order (at pp. 21-23), ANGRY can utilize discovery on that contention, along with the staff's response to our directive (at p. 17) to specify whether any specific "Class 9" accident sequence should now be considered, to focus on specific accident sequences within the overall broad concern expressed in ANGRY's rejected Contention 6.

⁷ There is no procedure permitting the filing of a modified contention without good cause or other leave after the denial of the original contention. However, in this instance, we construe ANGRY's filing to be in the nature of an objection seeking reconsideration of the First Special Prehearing Conference Order pursuant to 10 CFR 2.751a(d).

⁸ ANGRY's extensive quotes from NUREG-0578 come from Section 3 of that report entitled, "Future Work by the Lessons Learned Task Force." The particular subsection relied upon is Section 3.1, "General Safety Criteria." This broad topic is not included in the short-term recommendations of Section 2 of NUREG-0578 nor in the Category A or B recommendations of Table B-1 of NUREG-0578, referenced by the Commission Order of August 9, 1979 (at pp. 7 and 8) in connection with its delineation of the scope of issues within this proceeding. Accordingly, ANGRY's reliance upon Section 3 of NUREG-0578 does not support admission of its proposed Contention 6 in this proceeding.

UCS Request for Reconsideration or Certification

UCS, by an out-of-time filing of January 4, 1980, requests that we reconsider, or in the alternative certify to the Commission, the denial of UCS Contentions 17, 18, and 20 in our First Special Prehearing Conference Order. We decline to do either.

We need not rehearse the reasons given in our prior order denying UCS Contentions 17, 18, and 20. We stand by those reasons. In addition, we decline to certify the questions to the Commission. Interlocutory review is sparingly exercised. *See, e.g., Puget Sound Power and Light Company, et al.* (Skagit, Units 1 and 2), ALAB-572, 10 NRC 693 (November 20, 1979); *Public Service Company of Indiana, et al.* (Marble Hill, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977); and cases cited in the two cases. Nothing in our rulings either: threatens UCS with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by the later appeal (especially here where there will be a mandatory review by the Commission itself prior to any restart of the reactor);⁹ or affects the basic structure of the proceeding in a pervasive or unusual manner. *Marble Hill, supra.*

With respect to Contention 20, it may be usefully noted that neither the staff nor the board has yet passed upon the question of whether an environmental impact statement (EIS) is required in this proceeding, and, if so, what the scope of it should be. We will consider radiological health and safety aspects of accidents, including those previously thought of as "Class 9," under several contentions, including UCS Contention 13. This examination may ultimately affect the correctness of any prior decision on the need for and scope of an EIS. However, this is a far cry from the assertion by UCS that Contentions 13 and 20 are in "lockstep" such that our admission of Contention 13 (with a carefully charted approach to greater specificity) perforce requires admission of Contention 20.

There is a great difference between a contention which brings into question the staff's methods of determining which potential accidents fall within the design basis and a requirement for an environmental impact statement to consider the consequences (see UCS request for reconsideration, at p. 2) of "so-called Class 9 accidents, particularly core meltdown with breach of containment." Even putting this distinction aside, as admitted for discovery by the Board, UCS Contention 13 requires UCS, through discovery, to identify specific accident sequences with a reasonable nexus to the TMI-2

⁹ In the special circumstances of this proceeding, a denial by us of an intervenor's request for certification is at bottom a risk for the licensee, since the Commission will be reviewing the correctness of our actions prior to any restart of the reactor.

accident as a prerequisite to litigation of the safety analysis of such accidents.¹⁰ UCS correctly concedes in its request for reconsideration (at p. 2) that Contention 20 does not do this. The contention therefore lacks specificity and is broader than the scope of this proceeding.

As we have previously stated, actions by the Commission on the subject of Class 9 accidents, whether with regard to the question of rulemaking currently before it, or in responses to requests for guidance in other cases,¹¹ will be factored into our consideration of Class 9 accidents in this proceeding.

Clarification of Admission of Sholly Contention 16

By its motion of January 21, 1980, licensee requests that we clarify or modify our Second Special Prehearing Conference Order of January 11 with respect to our admission of Sholly Contention 16. Licensee believes that the contention should be limited to the threat to internal security as it could affect safe operation of Unit 1 from the ongoing decontamination and restoration activities at Unit 2, as opposed to a broad issue to the adequacy of internal security at Unit 1 independent of the impact of the activities at Unit 2. The limitation suggested by licensee, with one modification, is the limitation we have placed on the contention. The prior order states (at p. 2):

. . . we interpret the contention to be limited to industrial security with respect to "insiders" at the Unit 2 and *Unit 1* facilities as it could affect safe operation of Unit 1. [Emphasis added]

The order points out that this interpretation is consistent with the scope of the proceeding, the interpretation suggested by the staff, the thrust of Mr. Sholly's concern (this was reemphasized in Mr. Sholly's response of January 3, 1980), and with the Kemeny Commission staff report which provides both the justification for lateness of the contention and part of the basis for the contention. Licensee is correct that the broad interpretation it seeks to avoid would be inconsistent with part of our rationale (lack of nexus between the contention and the TMI-2 accident) for rejecting TMIA Contention 4 regarding external threats to security in the same order (at pp. 10-11) in which we admitted Sholly Contention 16.

It may be that the underlined reference to the threat from insiders at Unit 1 in the above excerpt from our prior order is confusing. It was simply our intent

¹⁰ If UCS and the intervenors who have been permitted to adopt UCS Contention 13 do not do this, all that will remain of Contention 13 will be evidence addressing the general method by which the staff has determined whether accidents within the scope of this proceeding fall within or outside the design basis.

¹¹ See the Staff's request to the Commission for further guidance in the *Black Fox* proceeding in the "Staff Statement of Position on Need to Consider Class 9 Events Pursuant to Direction in ALAB-573," December 7, 1979 (at p. 775).

to not preclude the possible factual showing that personnel engaged in decontamination and restoration work in connection with Unit 2 may utilize Unit 1 facilities as part of their work for Unit 2. Therefore, licensee's request for clarification is accepted. But it shall not be construed to mean that the Unit 2 activities are limited necessarily to those activities physically located at Unit 2. The scope of the contention as admitted includes activities in connection with the decontamination and restoration of Unit 2 allegedly posing an internal security threat to safe operation of Unit 1.

**Licensee's Response to Sholly's Response to Licensee's Response to Sholly's
Emergency Planning Contentions**

As the Board was preparing to file this memorandum and order on January 24, we received the Licensee's Supplemental Response to Emergency Planning Contentions dated January 22, 1979, in which (at pp. 10-12) the licensee addresses some of the points raised by Mr. Sholly's response to the licensee's objections to Mr. Sholly's emergency planning contentions. The authority for such a filing is questionable, and it is very late.¹² Nothing in the licensee's late response materially changes our view of the rulings on Mr. Sholly's emergency planning contentions, but some comments are appropriate.

Above (pp. 8, 9), the Board rejects Sholly Contention 8 D but directs the licensee to provide information concerning Class 9 assumptions. In its late response, licensee now provides an explanation and references NUREG-0610 as its source. This is helpful, but more information is needed.

Sholly Contention 8 Z was accepted by the Board (p. 9). In its late response, licensee objects on the ground that the contention is outside the scope of the proceeding. This is an entirely new objection and it is not responsive to Mr. Sholly's response to the licensee's original objection. Even if the objection were timely made, it would not prevail because licensee itself has placed control of the waterway into issue in its emergency plan as noted in Mr. Sholly's response (p. 9).

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Ivan W. Smith, Chairman

Dated at Bethesda, Maryland
this 25th day of January, 1980

¹² In a future order, the Board will provide guidance for responding to filings on newly filed contentions. In the meantime, any party intending to file papers of this nature would be well advised to promptly seek leave from the board for such filing (perhaps by telephone) so that we may be forewarned that the party wishes to comment.

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)**

January 29, 1980

The Licensing Board grants a city's petition to participate in this operating license proceeding as an interested municipality pursuant to 10 CFR 2.715(c).

**RULES OF PRACTICE: PARTICIPATION BY AN INTERESTED
STATE OR LOCAL GOVERNMENT**

There is no restriction in 10 CFR 2.715(c) upon whom a governmental agency may designate to represent it, and the limitations set forth in 10 CFR 2.713(a) do not apply to the representatives of municipalities or other governmental bodies participating pursuant to 10 CFR 2.715(c).

**MEMORANDUM AND ORDER ADMITTING MENTOR,
KENTUCKY, PURSUANT TO 10 CFR 2.715(c)**

By petition dated December 28, 1979, the City of Mentor, Kentucky, seeks to participate in this operating license proceeding as an "interested . . . municipality," pursuant to 10 CFR 2.715(c). The NRC Staff would grant the petition; the Applicants would deny it or, alternatively, have conditions imposed on the City's participation. No other party has responded. For reasons which follow, we grant the City's petition.

According to the petition, Mentor is "a political subdivision of Campbell County, Kentucky, the Kentucky county having the greatest concentration of population within [a] ten mile radius" of the Zimmer facility. It seeks to participate with respect to our consideration of emergency planning and

monitoring of radiological releases — issues which were among those deferred by our Order of June 4, 1979 and which have not yet been heard or even scheduled for hearing. Mentor claims that those issues are its principal concerns, that its participation will therefore not broaden the scope of the proceeding, but that instead its participation should add depth to our consideration of those issues.

The Applicants' objections to Mentor's participation stem from the City's designation as its representative in this proceeding of a Mrs. Mary Reder of California, Kentucky. The Applicants claim that Mrs. Reder is neither an attorney nor a resident of Mentor and hence, under 10 CFR 2.713(a), cannot represent the City. Moreover, they claim that Mentor is not the real party in interest, that Mrs. Reder is head of an organization denominated as the Zimmer Area Citizens of Kentucky (ZACK) ("an organization opposed to the licensing of the Zimmer Station"), and hence that ZACK is using Mentor as a "front" to avoid the responsibilities which would rest upon it if ZACK were admitted as a named intervenor. The Applicants would require that, if Mentor be admitted, it be represented by either an elected official or through counsel. On the other hand, the Staff claims that there is no restriction in 10 CFR 2.715 as to whom a government agency may designate to represent it.

In ruling upon Mentor's petition, we must differentiate between the qualification of the City to participate and that of its designated representative to appear as such. The City's petition is signed both by the Mayor and the Secretary of its City Council. Nothing of which we have been made aware suggests that those signatures are not legitimate or that the City does not wish to participate pursuant to 10 CFR 2.715(c). Moreover, as the Staff points out, there is no explicit time requirement regarding a filing to participate pursuant to 10 CFR 2.715(c). See our Memorandum and Order Admitting New Contentions, LBP-79-22, 10 NRC 213, 216 (August 7, 1979). That being so, the City of Mentor's petition is *granted*.

As for the City's representative, we will presume — although we do not definitively know — that Mrs. Reder is not an attorney. In any event, the requisite Notice of Appearance which must be filed by attorneys (see 10 CFR 2.713(a)) has not been submitted. Furthermore, although Mrs. Reder's mailing address is in California, Kentucky, we take official notice that California is in Campbell County, not more than two or three miles from Mentor. We agree with the Staff, however, that there is no restriction in 10 CFR 2.715(c) upon whom a governmental agency may designate to represent it.

The restrictions of 10 CFR 2.713 would limit representation to an attorney, to the party itself (*pro se*), or to a member of a group seeking to intervene. *General Electric Company* (General Electric Test Reactor, Vallecitos Nuclear Center), LBP-79-28, 10 NRC 578 (October 9, 1979). As construed by the Applicants, those restrictions would limit representation of a

governmental body to counsel or elected members.¹ The net result would appear to us to restrict severely the manner in which a governmental body may carry on its functions, for it would preclude representation by an appointed official who is not an attorney — even the appointed head of a department with specific expertise in the matters at issue in a proceeding. In practical effect, governmental bodies would be restricted to representation by counsel and hence would be more limited in their choice of a representative than would many of the rather diffuse groups which routinely participate in NRC proceedings. Such a result was not contemplated by 10 CFR 2.715(c) which, in our view, was intended to encourage the participation of governmental bodies by abrogating some of the technical requirements applicable to other types of intervention.² In that connection, insofar as we are aware, the rights conferred by 2.715(c) have never been construed narrowly. See, e.g., *Exxon Nuclear Company* (Nuclear Fuel Recovery and Recycling Center), ALAB-447, 6 NRC 873 (1977); *Project Management Corp.* (Clinch River Breeder Reactor Plant), ALAB-354, 4 NRC 383, 392-94 (1976).

Moreover, we note that 10 CFR 2.715(c) is not written in terms of participation by municipalities or other governmental bodies but, rather, by “representatives” of such bodies or agencies thereof. There is no implication that those representatives are limited to those required for private parties under 10 CFR 2.713. For these reasons, we construe 10 CFR 2.715(c) as not being subject to the representation limits of 10 CFR 2.713(a).

In addition, we see no reason to conclude that the City of Mentor is merely a “front” for ZACK. The Mayor and City Council may share some of ZACK’s views, but that does not mean the City should be precluded from advancing such views in its own regard. The nature of a City’s views has never been — and should never be — a qualification for its participation. If the Mayor and City Council are misrepresenting the views of Mentor citizens, those citizens have a political remedy.

We recognize, of course, that the requirements for becoming a participant under 10 CFR 2.715(c) are less stringent than under 10 CFR 2.714. Nevertheless, in the present situation, we do not perceive that ZACK is attempting to avoid the requirements of 10 CFR 2.714, inasmuch as there are

¹ Contrary to the claim of the Applicants, the *Marble Hill* opinion which they cite does *not* stand for the proposition that a private intervenor cannot represent a governmental entity. The question there was whether another party could be deemed adequately to protect the interest of a governmental entity, within the meaning of 10 CFR 2.714(a)(1)(iv), and the decision held that the private party would not necessarily do so. Therefore, representation of the governmental entity by a private party was found an inadequate substitute for the participation sought by that governmental body. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-339, 4 NRC 20, 25 (1976).

² In extending the “interested State” provision to other governmental entities, the Commission stated that its purpose was “to improve coordination with States, counties, and municipalities.” 43 Fed. Reg. 17798 (April 26, 1978).

enough new developments with respect to the standards governing evacuation and monitoring that it is possible that ZACK could gain admittance at this time in its own right (after a balancing of all of the factors in 10 CFR 2.714(a)). If it did, it of course could be represented by a group member such as Mrs. Reder.

Since Mrs. Reder will now be representing the City, we remind the City that it will be both bound by and responsible for her activities in this proceeding. Moreover, once admitted to the proceeding, Mentor's representative is required to adhere to procedural rules and requirements which govern other parties. *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 768-69 (1977). As is the usual practice with respect to an intervention at an advanced stage of a proceeding, the City must take the proceeding as it finds it. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 276 (1975).

This Order is subject to appeal pursuant to the terms of 10 CFR 2.714a.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Charles Bechhoefer, Chairman

**Dated at Bethesda, Maryland,
this 29th day of January, 1980.**



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONOFFICE OF NUCLEAR REACTOR REGULATION
Harold R. Denton, Director

In the Matter of

(10 CFR 2.206)

Petition Requesting Seismic
Reanalysis

January 10, 1980

The Director of Nuclear Reactor Regulation denies petition under 10 CFR 2.206 of the Commission's regulations which requested an order requiring seismic reanalysis of all operating power reactors.

DIRECTOR'S DENIAL UNDER 10 CFR 2.206

I

I. On March 28, 1979, the Union of Concerned Scientists (UCS) petitioned the Commission to require all plants with an operating license to perform a seismic reanalysis within a 120 day time period. The major features of the requested reanalysis would involve: (1) the magnitude of the Safe Shutdown Earthquake (SSE); (2) the freefield ground motion at the site; (3) the motions of the structure during a seismic event; (4) the motion of the plant equipment supported by the site structures; (5) the seismic loads on structures, systems and components in appropriate combinations with other loads, and the corresponding allowable loadings; and (6) the conformance of the "as-built" plant to the design specifications. The petition was referred to the Director of the Office of Nuclear Reactor Regulation for response in accordance with 10 CFR 2.206 and noticed in the *Federal Register* on May 16, 1979 (44 FR 28737).¹

¹ Prior to the date of this petition, on March 13, 1979, the U.S. Nuclear Regulatory Commission (NRC) issued immediately effective orders suspending operations of five nuclear power reactors, namely: Beaver Valley Unit 1, Surry Units I and Maine Yankee and Fitzgerald. In each case the licensees were ordered to show cause:

- (1) why they should not reanalyze facility piping systems for seismic loads on all potentially affected safety systems using an appropriate piping analysis computer code which does not combine loads algebraically;
- (2) why they should not make any modifications to the facility piping systems indicated by such reanalysis to be necessary; and
- (3) why facility operation should not be suspended pending such reanalysis and completion of any required modifications.

II. DESIGN REQUIREMENTS

A. Current Seismic Design Requirements

Currently acceptable seismic design requirements for nuclear power plants are generally delineated in 10 CFR Part 50.55a, Appendices A and B of Part 50, and Appendix A of Part 100. *See also*, U.S. NRC Standard Review Plan Sections 2.4 and 2.5, and 3 (excluding Sections 3.3, 3.4 and 3.5), with their associated Regulatory Guides (e.g., Reg. Guides 1.12, 1.26, 1.28, 1.29, 1.38, 1.48, 1.57, 1.60, 1.61, 1.70, 1.92, 1.100, 1.122, 1.124, 1.142, etc.) and the referenced codes and standards (e.g., ASME, ANSI ACI, IEEE, AISC, etc.). These seismic design requirements deal with the entire seismic analysis/design chain from the definition of the seismic hazard at a site through the analysis, design and construction/fabrication of safety related structures, systems, equipment, and components. These requirements are briefly summarized below.

The seismic hazard (i.e., the earthquake induced ground motions at the site) is first determined on the basis of historical and geological evidence. It is defined in terms of two earthquake levels; namely, the Operating Basis Earthquake (OBE) which is that which could be reasonably expected to affect the plant site during the operating life of the plant, and the Safe Shutdown Earthquake (SSE) which is based upon an evaluation of the maximum earthquake potential for the site. Earthquake hazards are normally expressed as a function of magnitude and distance from the source or intensity at the site.² The magnitude is indicative of the energy release associated with the earthquake at the source, while the intensity is indicative of the local damage associated with the earthquake.

Present day requirements for determining the SSE can be found in Appendix A to 10 CFR Part 100. In it the required regional geological and seismological investigations are described. When known earthquake generators such as capable faults are identified, the regulations require that the Safe Shutdown Earthquake be determined considering both historic and geologic history. When earthquakes cannot be correlated with faults or tectonic structures the Safe Shutdown Earthquake is determined assuming that the largest historic earthquake in the same tectonic province could recur at the site. A tectonic province is a large geographic region of similar geologic structure. Although these regulations became effective in December 1973 they were to a large part based on the practice prior to that date. During that time safe shutdown earthquake (or "design earthquake") design ground motion

² The magnitude of an earthquake is commonly defined in terms of the Richter Scale and the intensity of an earthquake is commonly defined in terms of the subjective Modified Mercalli Scale.

were adopted based upon geological and seismological recommendations of the U.S. Geological Survey and the U.S. Coast and Geodetic Survey, and engineering recommendations from prominent earthquake engineers such as Dr. Nathan Newmark and Dr. John Blume.

For the same earthquake magnitude, the detailed nature of the ground shaking is quite different from one earthquake to another. There are substantial variations in such parameters associated with the ground motion as peak acceleration, peak velocity, peak displacement, duration, nature and energy content at various frequencies. Due to these uncertainties, the ground motion at a site is defined by a smoothed, free-field response spectrum with a shape intended to have amplification factors for a given peak acceleration corresponding to a mean plus one standard deviation confidence level.

In evaluating a plant for a given definition of the ground motion, a detailed engineering evaluation is conducted considering three directional ground motion, foundation-structure interaction, structural response, piping system response, equipment response and component response. The uncertainties in the various steps of the overall analysis and design lead to conservative assumptions being made in each step regarding such parameters as load combinations, material properties, allowable stresses and damping. For the two levels of earthquake, the design and analysis parameters are specified such that, in general, structures, systems and components are designed to remain in the linear range, well below yield, for the OBE, and near or somewhat above the linear range and yield, yet substantially below their ultimate capability, for the SSE such that the capability to shutdown the plant and to maintain the plant in a safe shutdown condition is ensured.

It has been our experience in evaluating some of the older seismic designs that while the geological and tectonic analyses have not changed radically there have been larger changes in the way we characterize the ground motion associated with an earthquake of a given magnitude or intensity. This is due to the availability of more data, and greater in depth systematic analysis of strong motion records. Presently, practice would usually result in stronger assumed motion than previously stipulated for earlier plants. However, in addition to evaluating these design motions all the engineering assumptions must be taken into account in evaluating the overall seismic design. Certain design assumptions associated with these earlier plants were more conservative so that the differences between them and present day plants are less than the seismological analysis above would indicate.

B. Chronology of Basic Seismic Design Requirements

The basic seismic design requirements have undergone many changes over approximately the past 25 years. Prior to 1960, there were no specific requirements other than those contained in local building codes. Since that

time, the development of the basic seismic design practices can be generally summarized as follows:

PRIOR TO 1960 - Uniform Building Code Requirements

- Static seismic coefficient applied to structures
- 1960 - 1964
 - Ground motion described by Housner's averaged ground response spectra.
 - Single degree of freedom systems were used for the evaluation of seismic responses.
 - Horizontal and vertical earthquake responses were not combined.
- 1965 - 1967
 - Ground motion described by Housner's averaged ground response spectra (in some cases Housner made revisions from the previous spectra).
 - Multi-modal two dimensional models were used for the evaluation of seismic responses. The response spectrum approach was used most often. Time history was used occasionally.
 - Damping values were taken as 0.5% for piping, 1%-2-1/2% for steel structures, and 4% - 7-1/2% for concrete structures.
 - Compliance (flexibility) for plant foundation medium was considered.
 - Sum of the absolute value of the responses arising from the largest horizontal and the vertical earthquake was generally used for response determination.
- 1967 - 1971
 - Ground motion described by Housner's averaged ground response spectra modified, especially in short periods, using Newmark criteria (known as modified Newmark spectra, 1967 - 1969).
 - Soil structure interaction effects were considered using discrete soil springs and in some cases assuming material damping.
 - Floor response spectra generated and used in the evaluation of equipment and piping.
- 1971 - 1973
 - Modal damping values for the soil-structure system

to represent contributions from both material and radiation damping limited to 10% of critical damping.

1973 - 1977

- Reg. Guides 1.60 and 1.61 were introduced to define ground response spectra, and damping values (for structures, piping, equipment and components), respectively.
- Damping for small and large piping was raised to 2% and 3%, respectively.
- Soil damping determinations were required to account for the nonlinear stress - strain relationships for the foundation medium.
- Finite element procedures were required in the calculation of soil-structure interaction for deeply embedded structures.
- Three components of earthquake motion were required to be considered by taking the SRSS of the responses to each component (Reg. Guide 1.92).
- Floor response spectra generated per Reg. Guide 1.122.

AFTER 1977

- Layered soils accounted for in an elastic half space soil-structure interaction analyses.
- The limit of 10% of critical damping on modal damping values in soil-structure interaction analyses was removed.
- Equipment qualification per Reg. Guide 1.100.
- Comparison of elastic half-space and finite element soil-structure interaction analyses results.

C. Conservatism Inherent in the Seismic Design Requirements

In today's approach many conservatisms are introduced in the various stages of the seismic design process. These conservatisms are briefly itemized as follows and would be applicable to different vintage plants, including the older nuclear power plants, in varying degrees:

1. Conservatism associated with the selection of the design event.
 - a. Wide band ground response spectra with conservative amplification factors.

The ground response spectra used as input are smoothed, and broad banded. The spectra for a real earthquake are jagged in nature, producing less response in certain frequency (or period) ranges of the spectra than in adjacent frequency (or period) ranges. The spectral amplification factors are determined from considerations of the spectra for a set of real earthquakes. In the case of the development of R. G. 1.60, the amplification factors at each frequency were based on consideration of about an 84 percent confidence level that the response at a particular frequency would not be exceeded.

b. Enveloping synthetic time histories.

In the development of seismic responses for the design of structures, systems, equipment and components, synthetic earthquake time histories are developed with response spectra that essentially envelop the ground design spectra.

c. Conservative OBE.

Seismic design criteria are such that the OBE, rather than the SSE, can control the design of certain structures, systems, equipment, and components. Those items for which design is controlled by the OBE have a capability to resist an SSE with margins greater than those intended in the SSE design criteria.

2. Conservatism associated with the methodologies for seismic analysis and design.

a. Conservatism for structures, systems, and components.

1. Dynamic analysis

Elastic dynamic analyses are performed using low damping values and time-history or response spectrum analysis methods. In modal response spectrum analyses, closely spaced modes are combined by absolute summation.

2. Soil sited structures evaluation.

Soil site structures are evaluated using conservative seismic inputs into soil-structure interaction analyses.

3. Three input components.

Three input components of an earthquake (2 horizontal and 1 vertical) are considered. Both horizontal earthquake components are assumed to be equal.

4. Loading combinations.

Loading combinations consider other loadings (e.g., dead weight, live loads, pressure loads, etc.) in addition to the seismic loadings. Seismic loading is only a part of the total loading and in fact, other loadings besides seismic may in cases govern design.

b. Effect of inelastic behavior.

In reality, well engineered structures, components and systems are capable of sustaining loads which are beyond those which would bring them to their elastic limit without sustaining damage. For small excursions into the inelastic range, seismic inertial loads are reduced as a function of the amount of inelastic action in comparison with those calculated elastically. This phenomenon can be considered by the use of a ductility factor which is equal to unity for purely elastic behavior and increases with increasing inelastic behavior. For example, a ductility of 1.5 would have the effect of reducing accelerations of elastically calculated response spectra by as much as 1/3. Here ductility is defined as the ratio of displacement level in the nonlinear range to the displacement associated with the yield point for an elastic/perfectly plastic resistance vs. displacement function.

c. Conservatism for electrical and mechanical equipment.

1. Peak widening of floor response spectra.

When the floor response spectra are developed for the design of these components located at different locations in the structure, to account for uncertainties in the analysis the peaks in the individual floor response spectra are broadened in order to predict conservative equipment responses.

2. Use of maximum response spectra for multiple supported systems.

Where the system has multiple supports, the maximum response spectra are generally applied to all support points so that conservative seismic loads are generated for design purposes.

3. Multiple applications of damping values.

In calculating the seismic loads for these components, damping values are applied twice (first, to major structures and then to the equipment). The multiple applications of the conservatively low damping values compounds the conservatism in the seismic responses which these items are designed to resist.

4. System Redundancy

Even identically designed redundant systems may not always experience similar seismic excitation due to different mounting

locations, with different structural filtering effects. Thus a single loss of redundancy may not mean a loss of function for the system. This provides additional assurance that a plant will safely withstand a seismic event.

d. Conservatism in the qualification of electrical and mechanical equipment.

1. Required response spectra.

The required test input is normally defined as the envelop of floor response spectra obtained using structural analysis methods. This ensures that the required response spectra are conservative.

2. Test response spectra.

The test spectra must envelop the required response spectra.

3. Test for multi-plant application.

The equipment suppliers generally test the equipment for multiplant application. Considerable margins are added to the test response spectra so that they are applicable to many plants with differing seismic requirements.

4. Multi-axis testing.

The test input motions should be applied to the vertical and the horizontal axes simultaneously unless decoupling of responses along two directions is justifiable.

5. Test for OBE and SSE.

A number of OBE tests are performed prior to the SSE test. The number of OBE tests is conservatively selected to represent the upper bound for a plant site. This provides an additional margin in the consideration of cyclic loading effects.

3. Conservatism in the structural and mechanical resistance.

a. Allowable stress limits.

Engineering codes specify "code minimum strength" for materials. These code minimum strengths are in turn specified by the applicant when the materials are ordered; any material found to be under that strength is rejected. The result is that the material supplier provides material of higher strength. Also, margins exist between allowable stresses and ultimate strengths.

b. 28 day concrete strength (structural only).

Designs are usually based upon the 28 day design strength of concrete. Concrete continues to gain strength with increasing time beyond 28 days. Additionally, the strength at 28 days often exceeds that called for design strength.

c. Static strength vs. dynamic resistance.

Code material strengths are based upon static load tests. Since dynamic loads contain a limited amount of energy and are applied at a faster rate, the margin between stress limits and failure for dynamic loads is greater than that for static loads.

d. Standard size structural members and pipes.

The design of the structural elements is such that their capacities usually exceed the requirements called for by the analyses. Much of the actual structural design is controlled by the availability of standard structural members such as beams and piping sections, so that larger sizes than are needed are often used.

e. Redundancy in indeterminate structures and components allows for redistribution of loads.

From the standpoint of function, major structures and components can tolerate much deformation, and typically failure of numerous structural members. This deformation and loss of structural members can be sustained because of redundancy, (i.e., more than one path available to carry loads) which allows for redistribution of loads formerly carried by failed members.

f. Ductility to failure.

In deforming to failure, beyond the elastic limit, the inelastic behavior of well engineered concrete and steel structures, components and systems provides for energy absorption not normally counted on in design. The effects of this are discussed in detail in item IV.B.b.

g. Minor attachments absorb energy.

Nonstructural elements which are not considered to carry any loads in design, do absorb energy through inelastic behavior or collapse during a seismic event.

h. Nuclear quality assurance (QA) program.

The nuclear QA procedures are more stringent than most found throughout the construction industry. This provides additional safety for nuclear plants beyond that considered acceptable for most

nonnuclear facilities designed using many of the same practices as used for nuclear plants.

These conservatisms are difficult to quantify; however, the extent of these structural and mechanical conservatisms for plants designed using current standards has been estimated by studies made by Newmark, and Cornell.³ A median factor of safety for structures, equipment and piping has been estimated to be within the range of 4 to 8. For older facilities, it is recognized that these factors of safety would be somewhat less. Ongoing seismic programs, which are discussed later in this document, will provide better insight as to what these factors are likely to be.

D. Other Considerations

For comparison, hospitals, schools, apartment complexes and similar essential facilities are designed by current non-nuclear criteria that for the same earthquake exposure in terms of ground acceleration result in designs several times less conservative overall than current nuclear plant criteria would dictate.

Additional substantiation of the inherent seismic capability of structures, systems, equipment and components is found through the examination of the performance of structures in past earthquakes. This inherent capability is not always due to a conservative seismic design, but to the fact that the design for loadings other than seismic (e.g., wind, pressure, etc.) leads to an implicit level of seismic resistance. Explicit consideration of seismic loadings increases this resistance. Specific examples of the performance of industrial and fossil power facilities in response to real earthquakes to illustrate these points are cited below.

The oil fired Kern County Steam Station in California (designed and built in 1947-8) had structures designed for 0.2g static coefficient with stress limits increased by 33% for combined dead, live, and earthquake loadings. Piping systems were designed using static coefficient hand calculations techniques and the Biot⁴ smoothed response spectrum (narrow and heavily damped compared to those used for nuclear plants) with peak accelerations of 0.1g at the ground level varying linearly at higher levels of 0.3g at the top of the structure. Equipment anchorages were reviewed for lateral load resistance. The plant operated through the July 21, 1952 Kern County earthquake (Magnitude 7.7) with no significant damage. The peak ground acceleration at

³ "On the Seismic Reliability of Nuclear Power Plants," C. A. Cornell and N. M. Newmark, May 1978.

⁴ Biot, N. A., Analytical and Experimental Methods in Engineering Seismology, Trans ASCE 108 Pg. 365-408, 1942.

the site was estimated to be about 0.25g.⁵

During the 1971 San Fernando Earthquake, the fossil fueled Valley Power Plant, which was designed to 0.2g - 0.25g, was not damaged although accelerations at the site were estimated to be in excess of 0.25g. Other nearby power plants which were not as close to the epicenter as the Valley plant were also undamaged.⁶

An ESSO refinery was subject to measured peak ground accelerations of 0.39g E-W and 0.34g N-S in the December 25, 1972, Managua, Nicaragua earthquake (Magnitude 7.5). The design of the refinery met provisions of the Uniform Building Code for Zone 2. There was almost no damage to the refinery which resumed operation 24 hours after it was shutdown for inspection. Also, the fossil-fueled power plant in Managua, immediately adjacent to the causative fault, and for which the design basis is reported to have been 0.1g, probably experienced accelerations on the order of 0.6g and suffered some damage, yet was one of the first industrial facilities to return to operation following the earthquake. Many of the problems were caused by absent or inadequate anchors.^{7,8}

The Chugach Power Plant in Anchorage, Alaska was subject to accelerations of approximately 0.2g at the site during the 1964 Alaskan earthquake of Magnitude 8.4. The design of the plant was based on a 0.1g static coefficient, yet there were no power piping failures.⁹

On June 7, 1975, the Humboldt Bay Nuclear power plant experienced an earthquake with peak measured accelerations in plant structures of up to 0.35g. The duration was short, therefore, the energy was limited in comparison to that which is implied by anchoring a design spectrum at this value. However, the damage to the facility was insignificant. The plant was shutdown for refueling at the time and there was no damage to safety systems.

Review of fossil power plants that were shaken by the Alaskan earthquake, and of fossil and nuclear plants shaken by earthquakes in Japan during the recent experience in Fukushima where the nuclear power plant operated right through the strong motion, further demonstrates the point that carefully engineered structures, piping and equipment of the types found in the nuclear and the fossil power generation and the petrochemical industries, typically possess high resistance to seismic forces.

⁵ "Seismic Capability of Nuclear Piping," Robert L. Cloud, May 1979, ("Report on the Reanalysis of Safety Related Piping Systems - Surry Power Station, Unit 1 - Virginia Electric and Power Company," Appendix F, June 5, 1979).

⁶ Ibid. However, the San Fernando Power Plant did experience a structural failure which led to a penstock failure, however, it was built in 1921.

⁷ Ibid.

⁸ "Managua, Nicaragua Earthquake of December 23, 1972," Earthquake Engineering Research Institute Reconnaissance Report, May, 1973.

⁹ "Nuclear Plant Seismic Margin," Robert L. Cloud, June 8, 1979.

E. Current IE Bulletins Regarding Seismic Issues For Operating Plants

Recently, several IE Bulletins regarding seismic issues have been issued to all licensed power reactors. These in part address areas of reanalysis requested by the UCS petition. The subjects of these bulletins are summarized as follows:

IEB 79-02
(issued 3/8/79,
revised 6/21/79,
supplemented 8/29/79
and revised 11/8/79)

- This Bulletin required each licensee, for the support base plates which are anchored using the concrete expansion type anchor bolts, to verify that a proper factor of safety on design loads exists considering the flexibility of the base plates and the cyclic nature of their loadings. Additionally, a test program is required to verify the adequacy of the institution installation of the anchor bolts. Any required modifications must be made.

IEB 79-04
(issued 3/30/79)

- This Bulletin required each licensee to verify that the current weights for certain Velan swing check valves were used in the seismic analyses and design of piping systems. Where discrepancies are found, the affected piping systems must be reevaluated and any modifications performed.

IEB 79-07
(issued 4/14/79)

- This Bulletin required each licensee to determine if the seismic analysis of any safety related piping systems were based upon the inappropriate algebraic combination of responses to different earthquake components. For any that were, the systems were required to be reanalyzed using an appropriate computer code which would be verified by the NRC. Any required modifications must be performed.

IEB 79-14
(issued 7/2/79,
revised 7/18/79
and supplemented
8/15/79)

- This Bulletin was issued as a result of the finding during the review of responses to IEB 79-07 and the reanalyses of the five plants which were initially shutdown by Order that certain piping system and support as-built configurations differed from that assumed in the analyses and the designs. This could result in substantial changes in piping systems responses, and piping and support stresses.

Therefore, this Bulletin required each licensee to verify that the as-built piping system, including supports, are essentially the same as assumed in their seismic analysis and design. Where significant discrepancies are noted, the effect on the analysis and the design must be evaluated and any necessary modifications must be performed.

As the reviews of the responses to these bulletins proceed, the NRC will take such actions as may be necessary to assure the public health and safety. The reviews of responses to date indicate that some installation and design deficiencies exist in the areas addressed by these Bulletins. These deficiencies are being resolved in a timely, prudent manner. Affected licensees are committed to taking appropriate remedial action. If necessary, the staff will take enforcement action to ensure changes are made.

III. ONGOING NRC SEISMIC ORIENTED PROGRAMS

There are currently four major ongoing seismically oriented programs within the NRC; namely, the Systematic Evaluation Program (SEP), Task Action Plan A-40 (TAP A-40), the Seismic Safety Margins Research Program (SSMRP) and the Code Verification Program (CVP). These programs are in addition to the reviews of operating plants with regard to the items identified in the recently issued IE Bulletins.

A. Systematic Evaluation Program (SEP) Review

The SEP was conceived by the NRC in 1976, a plan for it was defined in 1977, and it was implemented in 1978. A major effort of the SEP is an evaluation of the seismic design adequacy of the eleven older nuclear power plant facilities under review in the program. The SEP facilities received construction permits between 1956 and 1967. Seismic design procedures evolved significantly during this period and through publication of the Standard Review Plan (SRP) in 1975. As a result, the seismic design bases of the SEP facilities vary in degree from Uniform Building Code considerations (static analysis) up through and approaching current standards (dynamic analysis).

Recognizing this evolution, the NRC has found it necessary to make an assessment of the seismic design safety of the SEP facilities relative to those designed under current standards, criteria, and procedures and to make an integrated evaluation to verify that these facilities possess acceptable levels of seismic resistance capability.

To reach these findings the SEP seismic review must utilize technical approaches thought more realistic in light of current knowledge rather than those dictated by current requirements which are felt to yield conservative designs when considered in an integrated manner but do not necessarily produce an accurate representation of the true seismic response. Having recognized and considered in more detail the inherent capabilities of these facilities, a decision will be made regarding the need to retrofit. It must be emphasized that if such an eventual decision is made, it does not necessarily imply that the existing facilities are unsafe but rather that substantial benefit to the public health and safety can be attained through such actions in accordance with 10 CFR 50.109. If however, during the course of review significant deficiencies are found, appropriate action will be taken by the NRC.

The SEP facilities fall into two groups based upon the degree to which seismic design was originally considered. The licensees of the earlier SEP facilities have embarked on seismic re-evaluation programs of their own to supplement the existing data base which is for the most part far less rigorously developed than would be expected today. These programs are being developed such that they are comprehensive enough to provide the staff with sufficient data to enable an overall assessment of the seismic safety of these facilities.

The NRC staff is currently reviewing the original seismic design documentation of the later facilities. In some cases, the existing information has been supplemented by NRC studies to verify staff judgements. All of these plants have been visited to date by specially staffed seismic review teams to gain first hand knowledge of facility geometry and to visually identify any obvious anomalies.

One such review of the Dresden 2 facility is nearing completion. This review has provided valuable insight into the seismic designs of similar vintage facilities. Based upon initial judgement and an extrapolation into the other facilities, it would appear that the later SEP facilities where the seismic ground motion input has not escalated significantly, possess, in an overall sense, adequate seismic margins with possibly a few minor exceptions. At this point the exceptions refer to areas that have been identified for further evaluation and do not necessarily imply deficiencies. It is anticipated that minor modifications will be required by the NRC staff in areas where substantial additional protection to the public health and safety can be attained. In other words, the change of seismic design criteria over the years can be accommodated by utilizing realistic evaluation techniques and the intent of current criteria as a standard provided there are no significant changes in the stated seismic hazard assumed for design at the site.

The SEP program also has provisions for re-evaluating the design seismic ground motion input for each site utilizing site specific information to arrive

at which is intended to be a realistic estimation of the seismic hazard. This information will be incorporated into the structural/mechanical portions of the review as it becomes available. Additionally, the SEP licensees have initiated a program of their own to re-evaluate the seismic input design bases of their facilities.

Initial review of the early SEP facilities indicates that a certain amount of retrofitting may be required especially in providing additional piping and equipment supports. In certain cases structural modifications may also be necessary. The NRC staff recognizes that these older facilities do not possess the same seismic margins as facilities being designed under current standards; however it is the belief of the staff that these facilities possess adequate inherent seismic margins to continue operation in the interim until the SEP seismic evaluation is complete. This conclusion is based upon (1) the fact that these facilities are sited in relatively low seismic regions, (2) historical data which suggests that large industrial facilities have not been significantly damaged under seismic loadings and (3) consideration of the inherent and in many cases unquantifiable seismic resistance capabilities of these facilities.

It is anticipated that topics may be identified within SEP which potentially could impact other operating reactors or new plant licensing. A feedback mechanism has been established to relay the information in an expeditious manner to others on the NRC staff, licensees, and applicants to assure that appropriate actions are taken in a timely manner.

B. Task Act Plan A-40 (TAP A-40)

Task Action Plan A-40 is a short range program which was instituted in 1977. This program is geared toward providing the NRC with information within a much shorter time frame than is dictated by the scheduled completion of the more involved activities under the SSMRP. Its goal is to provide generic, quantitative estimates of the conservatisms in selected individual pieces of and the overall seismic design change when following current criteria. Phase I consists of an evaluation of the conservatisms in the calculated responses of structures, systems, and components, including the consideration of elasto-plastic seismic analyses, site spectra (as opposed to site independent spectra such as that described in Reg. Guide 1.60), nonlinear structural dynamic analyses, and soil/structure interaction. Phase II consists of an evaluation of the conservatisms in the seismic input definition, including the study of earthquake source modeling and the analysis of nearfield ground motion. Results of the various tasks in this program to date have substantiated the existence of conservatisms in the current seismic design methodology.

C. Seismic Safety Margins Research Program (SSMRP)

The SSMRP is a long range research program (approximately 6 1/2 years) which is aimed at improving the seismic design methodologies. The objectives of this program are to:

- a) estimate the conservatisms in the Standard Review Plan seismic design requirements,
- b) develop improved requirements, and
- c) develop methodologies that realistically estimate the behavior of nuclear power plants when subjected to earthquakes.

This program will build upon and extend the results from Task Action Plan A-40.

D. IE Bulletin Reviews

The scopes of the recently issued IE Bulletins regarding seismic issues were summarized in the section II.E. Many of the issues addressed by these bulletins have already been resolved for many operating nuclear power plants. The completion of the efforts involved in satisfying these bulletins has given and will give added confidence in the adequacy of the seismic designs of the operating nuclear power plants. As the review of the responses proceeds, the NRC will take appropriate actions based upon our assessments of the responses.

E. Code Verification Program (Piping)

This program was instituted in March 1979 and has as its objective the verification of computer codes used by the industry for the seismic analyses of piping systems. It is related to an older program entitled, "Piping Benchmark Problem," which has the goal of generating sets of piping problems for bench benchmarking computer codes used for both static and dynamic piping system analyses.

IV. PLAN FOR RESOLUTION OF SEISMIC ISSUES

While the staff agrees that further seismic evaluation is necessary, as explained above:

- a) many conservatisms exist in the seismic design methodologies employed in the design of both old and new nuclear plants,
- b) structures and systems have an inherent level of seismic resistance, even if no explicit seismic design requirements are considered, and
- c) many investigations are currently in progress which are aimed at: (1) evaluating the seismic capabilities of older plants, (2) qualifying the conservatisms in the current seismic design requirements, and (3) developing improved, more realistic seismic design criteria.

Based upon these facts and considerations of a plant's seismic design as a

whole the NRC staff does not believe it is necessary to require all nuclear power plants with operating licenses to be seismically reanalyzed from the seismic input definition through the evaluation of the designs of structures, systems, and equipment and components as demanded in the UCS Petition. In a sense, a "seismic reevaluation program" is continually being conducted which integrates the lessons learned from past experiences and the results of ongoing seismic programs (SEP, TAP A-40, the SSMRP and the IE Bulletin reviews). These basic evaluations are addressing those issues which are identified as being most important to public health and safety.

The IE Bulletins which have been issued thus far, and any corrective actions deemed necessary, have provided and will provide an additional level of assurance that the as-built configurations of piping systems and their supports indeed have sufficient safety margins. Part of the efforts has been to verify the adequacy of many computer codes which are used for the analysis of piping in the nuclear industry. Generally, all computer codes reviewed have been found to be adequate. Therefore, this increases the level of confidence that can be placed on the computational adequacy of piping analyses once the intended methodology is confirmed. This confidence can also be extrapolated to a certain degree to the computational adequacy of computer codes used throughout the seismic analysis and design of the plants.

The results of the SEP will also provide a general data base regarding the adequacy of the seismic capability of operating nuclear power plants. If any concerns are identified in the review of the licensees' responses to these Bulletins or in the SEP reviews, appropriate actions will be taken by the NRC.

The NRC staff is embarking on three parallel efforts which will aid in reassuring the adequacy of the overall seismic designs of the operating plants which are outside the scope of the current SEP review.

The first of these efforts involves a detailed study of the criteria used for the design of each operating plant. It consists of determining for each plant the seismic input used for the plant design (peak ground acceleration, ground spectra, damping values, etc), the analytical techniques, the load combinations and the allowable loadings used for the design of structures, systems, equipment and components, and any other significant parameters which are incorporated in the design of the overall plant.

The second of these efforts involves the reassessment of the seismic hazard at each of the plant sites. This effort will then progress to a detailed evaluation of the seismic risk at any plant site where concerns arise as to the adequacy of the ground motions specified for the original seismic designs. Where any significant discrepancies between the originally determined seismic risk and that determined through this reevaluation are noted, appropriate actions would be taken by the NRC, considering the information from this effort in conjunction with that obtained in the first effort.

The third effort involves the development of capabilities for the

verification of the computer codes beyond the existing requirements. These codes are used not only for piping analysis and design, but also for the analysis and design of all structures, systems, equipment and components. This involves the development of sets of benchmark problems which would verify the computational methodology of the computer codes. These benchmark problems must therefore be of a sufficiently complex and diversified nature which would generally be beyond the scope of existing closed form solutions to the problems. Once a comprehensive program is established, it will be implemented as necessary. This is a sizable effort and will take a fairly long time period to complete.

As these efforts progress, their findings, the findings of ongoing and future seismic reviews of operating plants, and the findings of TAP A-40, the SSMRP and foreign data will be continually assessed and factored into any decisions and/or the initiation of additional studies and programs. We feel this is a responsible and intelligent approach for the resolution of seismic issues, and overall involves an effort far beyond that which can be accomplished in the short term.

On the basis of the assessment of past, ongoing, and future seismic related studies, the conservatisms built into both the old and the new seismic criteria, and the inherent seismic resistance of nuclear power plants, I have determined that the efforts delineated in the UCS Petition are unnecessary in the suggested depth and time frame. I believe that the direction in which we are proceeding, with evaluation and resolution of any seismic issues which may have a deleterious impact on public health and safety, will not only address the concerns raised in the USC Petition, but will lead to more appropriate and realistic seismic design requirements than are dictated by even current criteria. Accordingly, I have determined not to issue an order requiring seismic reanalysis. The request of UCS is denied.

A copy of the decision in this matter is available for inspection in the Commission's Public Document Room, 1717 H Street, N.W., Washington, DC 20555. A copy of this decision will also 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 20 days after the date of issuance of the decision, 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 10th day of January, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**THE TOLEDO EDISON
COMPANY AND THE
CLEVELAND ELECTRIC
ILLUMINATING COMPANY**

**Docket No. 50-346
(10 CFR 2.206)**

**(Davis-Besse Nuclear Power
Station, Unit No. 1)**

January 17, 1980

The Director of Nuclear Reactor Regulation denies a petition for action under 10 CFR 2.206 which requested suspension of operation of the Davis-Besse Unit No. 1 pending modification of its license to upgrade emergency planning at the facility.

ATOMIC ENERGY ACT: RIGHT TO A HEARING

A petitioner under 10 CFR 2.206 is not entitled to a hearing on its petition, because the consideration of a petition under 10 CFR 2.206 is not a proceeding within the meaning of section 189a. of the Atomic Energy Act of 1954, as amended.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letters dated April 24, May 23, June 12, and July 9, 1979, Terry J. Lodge, on behalf of the Toledo Coalition for Safe Energy (TCSE), petitioned for modification of the operating license for the Davis-Besse Nuclear Power Station, Unit 1. In these various letters, TCSE generally asserts that the Davis-Besse facility has inadequate emergency and evacuation plans. TCSE requested in its June 12th letter that the Commission treat portions of TCSE's earlier letters as a petition for rulemaking to be consolidated with the petition filed by Critical Mass Energy Project, *et al.*, in Docket No. PRM 50-23. TCSE asked that the remaining portions of its April 24th, May 23rd and June 12th letters be treated as a request for action under 10 CFR 2.206. As TCSE requested, the Staff referred TCSE's various letters to the Secretary of the

Commission on June 27, 1979, for inclusion in Docket No. PRM 50-23. The Staff treated the remainder of TCSE's letters as a request for action under 10 CFR 2.206¹

TCSE's June 12th letter urged that the Commission hold hearings on TCSE's requests and further order the Licensees to show cause why emergency and evacuation procedures for the Davis-Besse plant should not be modified prior to resumed operation of the plant. On June 12th, the Davis-Besse plant was shut down, subject to the Commission's Order of May 16, 1979, which required the Licensees to undertake certain corrective action prior to resumed operation.² In accordance with the Commission's Order, the Director of Nuclear Reactor Regulation found on July 6, 1979 that the Licensees had satisfied the conditions of the Order and could thereby resume operation of the Davis-Besse plant.³ TCSE had been informed prior to this authorization that a decision on TCSE's petition would probably not precede the authorization to resume operation.⁴

TCSE then filed on July 9, 1979, (1) a "Motion" seeking action by the NRC to shut down the Davis-Besse facility pending revisions to the emergency plans, and (2) a "Complaint and Memorandum of Particulars" which detailed TCSE's allegations and bases for its "Motion." The Commission referred TCSE's July 9th submittal to the Staff for treatment under 10 CFR 2.206. On July 16, 1979, the Licensees filed a response to this latest filing from TCSE. TCSE's July 9th submittal essentially reiterated its earlier requests but provided substantial elaboration on the bases for these requests. As its request for relief, TCSE asked that the Commission:

- a. Find that the plant is not safe to operate and is an immediate threat to health and safety.
- b. Suspend operation pending correction of deficiencies alleged and other necessary action.

¹ Notice that the Staff was treating TCSE's April 24th letter as a petition under 10 CFR 2.206 had been published in the *Federal Register* on June 8, 1979. 44 Fed. Reg. 33192 (1979). The Licensees responded to TCSE's April 24th request in a letter of June 8, 1979, from their counsel.

² 44 Fed. Reg. 29767 (1979).

³ Letter from H. R. Denton to L. E. Roe (July 6, 1979). See 44 Fed. Reg. 40987 (1979).

⁴ Letter from H. R. Denton to T. J. Lodge (June 27, 1979). Of course, final action on TCSE's petition prior to the authorization was not compelled by law. In analogous circumstances, the Commission held that the pendency of proceedings on the May 16th Order did not legally bar resumed operation of the Davis-Besse facility on terms consistent with the Order. *Toledo Edison Company* (Davis-Besse Nuclear Power Station, Unit 1), Commission Order at 2 (Docket No. 50-346, July 5, 1979). If the pendency of proceedings on an Order does not bar resumed operation of a facility, it would follow that the Staff is not required to take final action on a 10 CFR 2.206 petition which raises matters unrelated to the shutdown under an existing order prior to authorization of resumed operation of the facility. Moreover, as the D.C. Court of Appeals has recognized, the Staff is not bound to suspend operation of a facility and institute proceedings simply because the petitioner asks for such relief: "[An agency] may properly undertake preliminary inquiries in order to determine whether the claim is substantial enough under the statute to warrant full proceedings." *Porter County Chapter of the Izaak Walton League v. NRC*, No. 78-1556, Slip Op. at 11 (D.C. Cir., Sept. 6, 1979).

- c. Order the licensees to conduct full-scale emergency drills.
- d. Order posting of emergency and evacuation information in public places within 50-mile radius of the plant.
- e. Order the licensees to enclose emergency instructions in billings to customers at least annually.

I have considered the substance and the bases of the TCSE allegations, and I find that the TCSE has a fundamental misunderstanding of the relationships among regulatory requirements, regulatory guides, and NRC report recommendations. At the present time, the Davis-Besse emergency plan meets all current regulatory requirements. As such, a finding that the plant is not safe and poses an immediate threat to the public health and safety is not appropriate. In light of the events following the Three Mile Island Unit 2 accident, however, the NRC is taking immediate steps to upgrade emergency preparedness for all nuclear power plants, including Davis-Besse. Among the steps to be taken will be the implementation of the requirement that emergency plans include provisions for periodic dissemination of emergency planning information to occupants around the plant who could be directly affected by a release of radioactivity. Also, requirements for periodic drills will be upgraded.

A discussion of current NRC requirements and guidelines on emergency planning, current efforts to upgrade emergency planning requirements, and specific allegations forwarded by the TCSE are contained in Appendices A through D, which are attached hereto and made a part of this decision. In light of the Commission's current effort to upgrade emergency planning and on the basis of the staff's review of TCSE's petition, I have concluded that no modification of the Davis-Besse operating license is required at this time and that public hearings on the Davis-Besse emergency plans should not be convened.⁵ The request for relief by the TCSE 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 Davis-Besse Nuclear Power Station, Unit No. 1 located at the Ida Rupp Public Library, 310 Madison Street, Port Clinton, Ohio 43452. A copy of this decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission regulations.

⁵ In addition to its request for issuance of an order to show cause, TCSE asked that the Commission hold hearings on its petition to modify the Davis-Besse operating license. See TCSE Letter of June 12, 1979. TCSE is not entitled to a hearing on its petition, because the consideration of a petition under 10 CFR 2.206 is not a proceeding within the meaning of Section 189a. of the Atomic Energy Act of 1954, as amended. *Illinois v. NRC*, 591 F.2d 12, 13-14 (7th Cir. 1979).

As provided in 10 CFR 2.206(c), this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 17th day of January, 1980.

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Victor Stello, Jr., Director

In the Matter of

**KANSAS GAS AND ELECTRIC
COMPANY**

**Docket No. STN 50-482
(10 CFR 2.206)**

**(Wolf Creek Generating
Station, Unit 1)**

January 31, 1980

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

**REVISED DIRECTOR'S DENIAL OF REQUESTS UNDER 10 CFR
2.206¹**

I

William H. Ward, by petitions dated January 11 and June 29, 1979, on behalf of the Mid-America Coalition for Energy Alternatives (MCEA), Richard P. Pollock, by petition dated December 27, 1978, on behalf of the Critical Mass Energy Project, and other persons² have requested that the Commission suspend or revoke Construction Permit No. CPPR-147 which authorizes construction of the Wolf Creek Generating Station Unit No. 1. Notices of receipt of MCEA's and Critical Mass' petitions were published in

¹ This decision was initially issued as DD 79-11 on July 12, 1979 (10 NRC 136) and noticed in the *Federal Register* on July 19, 1979 (44 FR 42347). Mr. Ward by letter dated August 11, 1979 requested further explanation of footnote 6 of the July decision concerning the ground motion values for the Wolf Creek site. The Commission has extended the review date to permit the staff to revise the decision in response to Mr. Ward's concern and to clarify other aspects of it. See, Order Extending Time to Determine Whether to Review Director's Decision, July 27, 1979, August 13, 1979, September 13, 1979 and November 28, 1979. In order to improve the record for review, the July 12, 1979 decision is reissued in its entirety with the clarifications incorporated.

² Wanda Christy of Burlington, Kansas; Max McDowell of Elmdale, Kansas; David McCullough of Emporia, Kansas; Tony White of Garnett, Kansas, Kaye Yoder of McPherson, Kansas; Ferdinand and Ivonne Burmeister of Otis, Kansas; Marvin Dawson, James Mason on behalf of Kansans for Sensible Energy, Janet Skiles, and Tom Wheeler of Wichita, Kansas. Steve A. J. Bukaty, by petition dated May 15, 1979, on behalf of the Kansas Building and Construction Trades Council, also requested that the Wolf Creek construction permit be revoked.

the *Federal Register*, 44 Fed. Reg. 6535, 10445 (February 1 and February 20, 1979) and all petitioners have been advised by letter that their petitions were being treated as requests for action under 10 CFR 2.206 of the Commission's regulations. At issue in the petitions is the acceptability of the concrete at the Wolf Creek facility. Specifically, the issues of concern are whether the base mat concrete is of sufficient strength for its intended function and whether the quality assurance system at the facility is adequate to assure acceptable concrete work.

These matters have been reviewed and for the reasons given below I have determined that the December 19, 1978, Immediate Action Letter³ as modified by the March 5, 1979, Immediate Action Letter⁴ halting placement of concrete in the reactor containment building may be lifted and that suspension of construction at the Wolf Creek facility is not warranted in the interest of public health and safety. Accordingly, the above petitions are denied.⁵

II

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

In December, 1978 the licensee reported that some problems had been experienced placing concrete under steel inserts for access hatches. As a result, voids existed where there was no concrete or poorly consolidated concrete. In light of this occurrence, and the continuing delay in resolution of questions on the base mat concrete, NRC Region IV representatives met with the licensee, and expressed the opinion that further concrete work on the containment building should be suspended until concrete placing and consolidation procedures were improved, concrete placing crews were further trained, concrete inspectors and inspection procedures were upgraded, and questions

³ The December 19, 1978 letter is enclosed for Appendix A.

⁴ The March 5, 1979 letter is enclosed in Appendix B.

⁵ On the basis of the facts contained in his petition, Mr. Bukaty's petition on behalf of the Kansas Building and Construction Trades Council is denied by this decision. However, Mr. Bukaty indicated in the petition that further factual information may be available. Mr. Bukaty has been contacted and has not offered any additional information.

on base mat quality were resolved. The licensee agreed, and the agreement was documented in a letter from Region IV dated December 19, 1978. This agreement was modified by the March 5, 1979 Immediate Action Letter from NRC Region IV.⁶

A special NRC investigation was conducted under NRC Region IV direction during the period from November 13 through 16, 1978, and December 6 through 8, 1978.⁷ The investigation team was composed of inspectors from NRC Regions III and IV and Parameter, Inc., a consultant on concrete engaged specifically for this purpose. The team concluded that it could not agree with the licensee's opinion and that the test data must be considered to accurately reflect the strength of the concrete in place. On the basis of the test data, it was determined that a maximum strength of 4460 psi could be justified. This was approximately 10% understrength from the design strength of 5000 psi.

The evaluation of actual 90-day molded cylinder test data was the first step in the sequential process called for in the codes applicable to the Wolf Creek facility for the resolution of the question of concrete strength.

It should be noted that some of the 90-day cylinders showed lower strengths than companion cylinders from the same batch of concrete tested after 28 days. As with all test data there is some randomness expected in test results, but one generally expects the trends to indicate that the concrete strength has increased with age. There are, of course, a variety of problems which could produce an effect which would seem to contradict this expectation. In this particular case the most plausible problem which could have caused such an effect on some companion cylinders was that some river gravel in the vicinity of the site is known to contain an ingredient which can cause loss of strength in concrete under certain circumstances. The NRC consultant suggested that this might explain the apparently anomalous behavior of some of the test cylinders. To test the validity of this hypothesis, and to independently correlate the results of some of the tests performed by the licensee's consultant, the Construction Technology Laboratories of the Portland Cement Association, NRC arranged for the U.S. Army Corps of Engineers Waterways Experiment Station to perform independent petrographic examinations of samples of concrete from the test cylinders. The July 5, 1979 Corps of Engineer's report is made part of this decision as Appendix D.

Results of the independent examination of the Corps of Engineers correlate closely with the results of the licensee consultant's examination. Both results show that there is no evidence of contamination with adverse ingredients which may have caused a loss in strength of the concrete over time and that the samples are representative of sound, relatively high strength concrete. However, due to the multitude of parameters that can affect

⁶ See note 4, above.

⁷ See Inspection Report STN 50-482/78-13 (February 15, 1979).

strength, a clear explanation of the exact cause of the instances of the low 90-day strengths cannot be made.

The next step defined in the code requirements was to use the determined strength (4460 psi) to evaluate or reanalyze loads while meeting all stress, strain, and deflection criteria. The licensee conducted such a reanalysis by two alternative methods to determine whether the lowered strength concrete might be acceptable for use at the Wolf Creek site. The licensee's reanalysis was submitted on June 6, 1979 indicating that the structure was acceptable.

The licensee's reanalysis and the report of the Corps of Engineers have been reviewed. The conclusion of our review is that the concrete base mat will withstand the specified design loads and all loading combinations without impairment of its structural integrity or its safety functions.⁸ If the reanalysis had shown that the design loads could not be accommodated and still meet the stress, strain, and deflection criteria, under the codes, the next step would require that core borings be taken from the structure and tested. Even though this next step was not necessary, a core boring program has been considered early in the evaluation of the strength problem. However, such a program under the circumstances here would not have resolved the question of concrete strength and was not recommended by the staff for the following reasons: (1) As many as 200 borings would have been necessary under the applicable codes. This number of borings taken from the mat interior resulting in severing reinforcing steel would raise additional and perhaps more serious questions since the load bearing capacity of the base mat is primarily governed by the reinforcing steel. (2) A core boring program would have questionable value since it would be unlikely that the cores would sample the low strength concrete which might be anywhere in the 6600 cubic yards of the base mat. (3) Core borings from the actual base mat due to their age (more than a year old) would show larger values than cylinders taken after 90 days. The acceptance criteria for the base mat were based on 90 day cylinders and no correlation exists for relating the core strengths of concrete more than a year old to concrete test cylinders 90 days old.

III

In response to our concerns about quality assurance resulting from the findings of the inspection conducted during November 13-16, 1978, and

⁸ Evaluation Report Regarding the Concrete Strength of the Reactor Building Base Mat Wolf Creek Generating Station, which is made part of this decision and is attached as Appendix E. The evaluation report is based on the 0.12 g safe shutdown earthquake and the 0.06 g operating basis earthquake approved for the Wolf Creek site. The information concerning seismic forces contained in the June 29, 1979 letter from Mr. Ward has been previously considered by the staff and it does not alter the vibratory ground motion values for the Wolf Creek site. An evaluation of the seismic issues contained in Mr. Ward's letter is made part of this decision and is attached as Appendix F. The issues raised in Mr. Ward's letter have also been brought to the attention of the Advisory Committee on Reactor Safeguards.

December 6-8, 1978,⁹ NRC Region IV representatives met with senior representatives of the licensee and its construction contractor.¹⁰ Agreements achieved during the meeting including the licensee's commitment to suspend placement of safety-related concrete are documented in an Immediate Action Letter to the licensee dated December 19, 1978.¹¹ Based on information obtained during follow-up inspections that were conducted to examine the licensee's implementation of these agreements,¹² NRC Region IV concluded that the licensee had been responsive to the NRC's concerns and that modification of the December 19th Immediate Action Letter to permit placement of safety-related concrete except in containment appeared appropriate.

Inspection Report No. STN 50-482, 79-04 describes action taken by the licensee and findings of an inspection conducted on March 5-8, 1979, at the resumption of placement of concrete at Wolf Creek. During the inspection on March 8, 1979, the licensee notified the NRC that it had again terminated placement of concrete. This action was consistent with NRC Region IV's modification of the December 19th Immediate Action Letter and demonstrated the licensee's adherence to its quality assurance program.

Despite the licensee's effort to establish an effective quality assurance program, NRC Region IV found weaknesses in the program as indicated in Inspection Report No. STN 50-482, 79-04 and as discussed in the related enforcement letter dated April 11, 1979. NRC Region IV, in the enforcement letter accompanying the report, also expressed the view that the licensee had not assigned sufficient personnel to the project to implement an effective preventive quality assurance effort. As a result, a management meeting was conducted in Region IV's offices on April 28, 1979, which is reported in Inspection Report No. STN 50-482, 79-10.

Since January 1979, the licensee has increased the on-site QA staff from three full time to seven full time and two part time engineers of various disciplines. Recruitment of additional QA staff members is continuing. As a result of the increase in staffing, the licensee's QA surveillance of construction activities has increased significantly. During the period January 1, 1979 to July 11, 1979, an average of eight surveillance reports per month were issued as compared to an average of three reports for a fifteen-month ending December 1978. The staff of the licensee's Nuclear Development Department has been reorganized. A new Construction Manager has been hired. Additional recruiting for several staff engineers is being conducted. Currently, the results of a study of the licensee's QA program by an outside consultant are being reviewed and implemented by the KG&E Quality Assurance Committee.

⁹ The findings are reported in Inspection Report No. STN 50-482, 78-13. A Notice of Violation was issued on February 16, 1979, on the basis of this inspection.

¹⁰ The meeting is reported in Inspection Report No. STN 50-482, 79-1.

¹¹ See note 3, above.

¹² The inspection findings are contained in Inspection Report Nos. STN 50-482, 79-02 and STN 50-482, 79-03.

Daniel International (the primary contractor at the site) has increased the on-site QA staff by one member to a total of six. In addition, the assignment of a new QA manager has visibly increased the quality of the Daniel International's QA audit program. The Daniel International corporate QA staff also conducts quarterly on-site audits. Daniel International has made organizational changes to streamline the lines of authority and responsibility of the site management. The following changes have been made.

- a. The Administrative Assistant to the Project Manager has been moved from a staff position to a line position of responsibility with the Services Manager, Personnel Administrator, Training Coordinator and Security Administrator reporting to this position.
- b. Two positions of Assistant to the Construction Manager have been created and filled, both of whom report to the Construction Manager. This was done to permit more management attention to quality of construction work.
- c. The position of General Concrete Superintendent has been created and filled with the following positions reporting to him: Paint Superintendent; Iron Work Superintendent; Concrete Superintendent; and Batch Plant Superintendent.
- d. The position of QC Civil Coordinator has been created and filled.
- e. The position of Technical Superintendent, Concrete, has been established and filled.
- f. Personnel changes have been made in the following positions: Concrete Superintendent; Personnel Administrator, Project Mech/Welding QC Engineer; Project Services QC Engineer; Construction Manager; and Construction Engineering Manager.

Specific training for concrete placement crews under the direction of the Technical Superintendent, Concrete, is being done for each difficult placement. Daniel International has also contracted Management Analysis Consultants, San Diego, California, to review the site organization including the QA structure and make recommendations for improvement.

Additional inspections were conducted specifically to observe concrete work in progress on March 26-29, 1979,¹³ April 9-12, 1979,¹⁴ April 16-19, 1979,¹⁵ April 23-26, 1979¹⁶ and October 22-25, 1979.¹⁷ Other inspections conducted during May 14-17, 1979¹⁸ and September 17-20, 1979¹⁹ addressed the resolution of various open items from earlier inspections. The results of these inspections indicate that Wolf Creek's quality assurance program is effective in correcting identified problems.

¹³ Inspection Report No. STN 50-482, 79-05.

¹⁴ Inspection Report No. STN 50-482, 79-07.

¹⁵ Inspection Report No. STN 50-482, 79-08.

¹⁶ Inspection Report No. STN 50-482, 79-09.

¹⁷ Inspection Report No. STN 50-482, 79-18.

¹⁸ Inspection Report No. STN 50-482, 79-12.

¹⁹ Inspection Report No. STN 50-482, 79-17.

Accordingly, I find reasonable assurance that the licensee's quality assurance program is adequate to permit resumed placement of containment concrete. Thus, for the reasons stated in this decision, the petitions to suspend or revoke the Wolf Creek construction permit are denied.²⁰ Nonetheless, the NRC will continue its inspection effort at the Wolf Creek facility to assure that the licensee correctly places concrete and properly maintains its quality assurance program.

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

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

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

Dated at Bethesda, Maryland
this 31st day of January, 1980.

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

²⁰ Critical Mass has also suggested, without elaboration, that the circumstances surrounding construction problems at Wolf Creek indicate "significant weaknesses" in Region IV's inspection capabilities. Since potential problems with containment concrete were first identified in March 1978, Region IV has, in conjunction with I&E Headquarters, been continuously aware of the licensee's actions, has guided and required various actions by the licensee, and has obtained specialized assistance from other NRC offices and outside parties. Thus, I find no basis for the expressed concern about the adequacy of Region IV's inspection effort.



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

**WESTINGHOUSE ELECTRIC
CORPORATION**

Docket No. 110-00495
Application No. XR-120
Application No. XCOM-0013

**(Exports to the
Philippines)**

February 8, 1980

The Commission requests further public comments in this proceeding on the pending license applications for nuclear reactor export licenses to the Philippines. Comments are requested on: (a) the health, safety, or environmental effects the proposed exports would have upon the global commons or the territory of the United States, and (b) the relationship of these effects to the common defense and security of the United States.

ORDER

The Commission has reviewed the public comments submitted in response to its October 19, 1979 order requesting comment on the Commission's jurisdiction to consider the health, safety, and environmental impacts occurring outside the United States of proposed nuclear reactor exports. Further public comment specifically relating to the Philippine applications before the Commission would be in the public interest and would assist the Commission in making the statutory findings required by the Atomic Energy Act.

The Commission invites comment upon: (a) the health, safety, or environmental effects the proposed exports would have upon the global commons or the territory of the United States, and (b) the relationship of these effects to the common defense and security of the United States. For purposes of these comments, the term "global commons" means geographical areas

such as the high seas, Antarctica, and the portions of the atmosphere that are not within the territorial jurisdiction of a single nation state. The term "United States" means territory of the 50 States, as well as U.S. trust territories and possessions.

Comments should be sent to the Secretary, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Chief, Docketing and Service Branch, by February 29, 1980. Comments should also be served upon other participants in this proceeding pursuant to 10 CFR 110.89(b).

In the near future the Commission will issue an opinion setting forth its jurisdiction to consider health, safety, and environmental effects that may occur as a result of proposed nuclear reactor exports.

This public proceeding on pending license applications for nuclear export licenses to the Philippines will be completed on February 29, 1980.

Commissioner Bradford notes that the Commission's request for comments suggests that it may structure its export licensing reviews to assess the impact on the fish in international waters while declining to look into the impacts on the health and safety of concentrations of U.S. citizens located near exported reactors. The law clearly does not require this outcome, and as a policy decision, he finds it extraordinary. He would examine the potential health, safety, and environmental effects of the proposed exports on U.S. citizens at Subic Bay Naval Base and Clark Air Force Base.

It is so **ORDERED**.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 8th day of February, 1980.

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. 70-2623****DUKE POWER COMPANY****(Amendment to Materials License
SNM-1773—Transportation of
Spent Fuel from Oconee Nuclear
Station for Storage at McGuire
Nuclear Station)****February 29, 1980**

Upon *in camera* examination of information on alternative routes approved by NRC staff for the transportation of spent fuel from the Oconee to the McGuire plants, the Commission: (1) denies the staff's petition for review of Appeal Board and Licensing Board orders allowing information on the alternative routes to be made public in this case; and (2) terminates the protective order it has issued earlier covering such information. The Commission also announces its intention to address generically outside this proceeding, the question whether and to what extent routes for shipping spent fuel can and should be protected from public disclosure.

ORDER

On September 7, 1979, the Commission received from the NRC staff a petition for review and a request for an interim protective order covering information specifically identifying and describing alternative routes for the shipment of spent fuel. In order to preserve our jurisdiction to decide the matter, we issued an interim protective order that day; we also held hearings on September 10, and, through the General Counsel, solicited the further views of the parties on September 12.

Having considered these submissions, on November 2, 1979 we decided to examine the protected route information *in camera*. Affidavits of non-

disclosure and briefs discussing protected route information were received from the State of South Carolina and the Carolina Environmental Study Group; NRDC elected not to examine the protected information but also submitted a brief; and the staff submitted a reply.

After examining the protected route information and considering all the submissions from the parties, we have determined to deny the staff's petition for Commission review and to terminate our interim protective order.

In doing so, we recognize that the question whether and to what extent routes for shipping spent fuel should in general be made public is a matter of some importance, perhaps appropriate for Commission review. See 10 CFR 2.786(b)(4)(i). However, we do not believe that the staff has made an adequate showing here that it is important to protect this particular routing information. Ordinarily, we would not expect a complete record until the petition for review had been granted and the merits briefed. But here we have asked the parties to address the merits—whether the interim protective order should be made permanent—as well as whether the petition for review should be granted. We have received a relatively complete briefing on the merits and, of particular importance, the staff has twice indicated that it had little to add to its submission of September 14. We therefore believe that little could be gained from requesting further briefing.

While the staff may have correctly applied 10 CFR 2.790(d)(1) to spent fuel routes, this case raises the broader question of whether spent fuel routes can effectively be protected, or should be. While the staff suggests that shipments could be timed so as to foil those who would follow them, there is little in the record from which we could attempt to make a reasonable accurate judgment as to whether shipments would, in fact, be successfully followed. Similarly, while it is clear that there is at least some incremental gain in security from protecting routing information, the record does not disclose the importance of this benefit and hence we cannot tell whether it outweighs the public's interest in knowing the routes. The Commission intends to address this broader question generically outside the context of this case.

Certain other considerations suggest releasing the route information involved here. The parties have already surmised, for the most part correctly and without reference to protected route information, that the staff-approved routes largely follow the interstate highway route published in the environmental impact appraisal. The two routes that do so are thus largely public already. The third staff-approved route avoids the interstate highways altogether and thus has not been public, but poses other problems. Staff studies of preferred routes for shipping radioactive materials have indicated that interstate highways are usually to be preferred to non-interstate routes. While we cannot pass judgment on this proposition here, the third route deserves some additional consideration in light of these studies.

For these reasons, the staff's petition for review is denied and the interim

protective order issued September 7 is terminated. Persons signed affidavits of non-disclosure are released from all responsibilities under the affidavits.

It is so ORDERED.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 29th day of February, 1980.

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 Nos. 50-338 OL
50-339 OL

**VIRGINIA ELECTRIC AND
POWER COMPANY**

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

February 11, 1980

Upon *sua sponte* review of the Licensing Board's decision authorizing the issuance of operating licenses for the facility, the Appeal Board finds, after taking supplementary evidence on the matter, that service water pumphouse settlement does not threaten the public health and safety. The Appeal Board defers consideration of another safety question pertaining to the likelihood that turbine blades might break and damage vital facility structures or components of the plant.

TECHNICAL SPECIFICATIONS: STATUS AND EFFECT

Under 10 CFR 50.59(a)(1), a licensee may make changes in procedures described in the safety analysis report without Commission approval unless the proposed changes involve modifications to the technical specifications which are incorporated in the license or constitute an unreviewed safety question. In the latter event, the licensee must notify the Commission of any such changes under 10 CFR 50.59(b). Technical specifications, however, may not be altered without prior Commission approval. 10 CFR 50.59, 50.90.

TECHNICAL SPECIFICATIONS: STATUS AND EFFECT

Technical specifications are 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. *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979).

TECHNICAL ISSUE DISCUSSED: Settlement phenomena and the effect of service water pumphouse settlement upon the service water system.

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Attorney General Marshall Coleman and Assistant Attorney General Anthony Gambardella, Richmond, Virginia, for the Commonwealth of Virginia.
Mr. Richard M. Foster, Charlottesville, Virginia, for the intervenor, Geraldine Arnold.
Messrs. Henry J. McGurran, Daniel T. Swanson and Stuart A. Treby for the Nuclear Regulatory Commission staff.

DECISION

In December 1977, the Licensing Board authorized the issuance of operating licenses for Units 1 and 2 of the North Anna facility. LBP-77-68, 6 NRC 1127; see also LBP-78-10, 7 NRC 295 (1978). No exceptions were filed by any of the parties to the proceeding; accordingly, we undertook to review the decisions below and the underlying record on our own initiative. On that review, we concluded that additional information was needed on two safety issues: (1) the significance of the past, and potential future, settlement of the ground beneath the service water pumphouse; and (2) the likelihood that turbine missiles might strike and damage vital facility structures or components. In all other respects save one,¹ we affirmed. ALAB-491, 8 NRC 245 (1978).

Upon receipt of the requested information, we found ourselves unable to resolve either of the open safety issues without the benefit of an evidentiary hearing. ALAB-529, 9 NRC 153 (1979). Accordingly, a three-day hearing was held in June 1979. The applicant and staff produced testimony on both issues. Without adducing affirmative evidence of their own, the intervenors

¹ We deferred consideration of the generic issue relating to the environmental effect of the radon releases associated with the mining and milling of uranium. That issue is receiving our active consideration in a number of other proceedings and will be the subject of an evidentiary hearing later this month. See *Philadelphia Electric Company* (Peach Bottom Units 2 and 3), ALAB-562, 10 NRC 437 (September 10, 1979), ALAB-566, 10 NRC 527 (October 11, 1979).

Commonwealth of Virginia and Mrs. Geraldine Arnold participated through the conduct of cross-examination in that part of the hearing concerned with pumphouse settlement. Subsequent to the hearing, all the parties submitted proposed findings of fact.

It was our original intention to address and resolve both issues in a single decision. But new information of potential importance to the turbine missile issue has recently been brought to our attention, requiring us to withhold our disposition of that issue to await further developments. Our decision today thus deals only with the pumphouse settlement issue.² For the reasons set forth below, we conclude that settlement of the service water pumphouse does not pose a threat to the public health and safety.

I. INTRODUCTION

The source of our concern here is the unexpected magnitude of the settlement that has been experienced over a period of years by various parts of the North Anna facility's service water system (SWS) in the vicinity of the service water pumphouse. The SWS is one of North Anna's numerous cooling systems. Each system performs its own distinct functions; most of them (including the SWS) have their own independent components (*e.g.*, piping, valves, pumps) and source of water. In evaluating the safety significance of a potential failure in the SWS, one must understand exactly what role the system does and does not fulfill during normal plant operation and under accident conditions.

1. The service water system does not provide water directly to the reactor core—this function (in pressurized water reactors such as those at North Anna) is performed by the primary cooling system. Nor is the SWS related to the secondary cooling system—the system in a PWR that removes heat from the primary coolant to produce steam for driving the turbine generators. And, as will be seen, a failure in the SWS would not pose the same immediate threat to the public health and safety as would a failure in either the primary or secondary cooling systems.

This is not to say that the service water system is unimportant to the safe operation of the facility. During routine plant operation, the system provides cooling for (1) the component cooling system heat exchangers;³ (2) the main

² We shall deal separately with the turbine missile question, including the matter of whether plant operation can be allowed to continue pending the ultimate resolution of that question.

³ The component cooling system provides cooling for, among other things, the residual heat removal system (RHR) and the reactor coolant pump motors. The RHR is designed to control the reactor coolant temperature during normal (*i.e.*, non-emergency) reactor cooldown. For a description of the component cooling system, see the Final Safety Analysis Report (FSAR), Section 9.2.2.

control room air conditioning condensers; (3) the lubricating oil and seal coolers for the primary cooling system charging pumps;⁴ (4) the service and instrument air compressors; and (5) the primary containment pipe penetration cooling coils. The SWS also serves as a backup supply for the steam generator feedwater system, the fuel pit coolers and the recirculation air cooling coils. In the case of an accident, the SWS is principally used to cool the recirculating spray water⁵ and to provide an ultimate heat sink.⁶ A secondary (albeit important) function under accident conditions is to supply cooling to the charging pumps, thus ensuring their continued availability.

The basic source of service water for the North Anna plant is a 9.5 acre man-made reservoir, built on naturally sloping ground about 600 feet south of the reactor building. Roughly 8 to 10 feet deep, the reservoir holds approximately 22,500,000 gallons of water.⁷ At its eastern end, it has a "U" shaped dike. The dike has an earth core which is surrounded by rock fill. Two "filter zones" located between the core and the rock fill are designed to preclude seepage-induced erosion of the core. The bottom of the reservoir is lined with two feet of compacted clay which extends up the inside slope of the dike. The purpose of this liner is to minimize seepage. App. Test., p. 4; see also VEPCO Figure 3.⁸

The service water pumphouse is a large concrete structure (61 feet by 64 feet) embedded in the crest of the reservoir dike. It contains four pumps, each of which has a normal capacity of 11,500 gallons per minute (FSAR, 9.2.1-8). The service water is pumped from the reservoir, first through one (or both) of

⁴ The charging pumps (which are part of the chemical and volume control system) provide a means for injecting coolant into the reactor primary cooling system. They play an important role in, *inter alia*, maintaining the proper reactor coolant inventory during all phases of operation. They also inject high-pressure water into the primary system during a loss-of-coolant accident.

⁵ In accident situations, the recirculating spray water system is called upon to maintain the pressure within the containment building below atmospheric pressure, thereby preventing leakage of radioactive gases from the building.

⁶ According to Regulatory Guide 1.27, "the ultimate heat sink should be capable of providing sufficient cooling for at least 30 days (a) to permit simultaneous safe shutdown and cooldown of all nuclear reactor units that it serves and to maintain them in a safe shutdown condition, and (b) in the event of an accident in one unit, to limit the effects of that accident safely, to permit simultaneous and safe shutdown of the remaining units, and to maintain them in a safe shutdown condition."

⁷ This is sufficient water for 30 days of SWS operation for four units without resort to makeup water for losses due to evaporation (FSAR, pp. 9.2.1-12 and 9.2.1-13).

⁸ The prepared testimony introduced into the record at our hearing is referred to in this opinion as follows:

Applicant's Tables and Figures "VEPCO Figure (Table) ____"

Applicant's Testimony "App. Test. ____"

Applicant's Supplemental Testimony . . "App. Supp. Test. ____"

Staff's Testimony "Staff Test. ____"

The transcript is referred to as "Tr. ____"

two redundant supply headers⁹ and then through one of two (buried) 36-inch diameter supply lines, to those components which are cooled by the SWS. Thereafter, the now-heated water is returned through one of two (buried) 36-inch diameter return pipes to the pumphouse, from where it is discharged via a spray system to the reservoir.¹⁰

Backup service water can be supplied by using pumps which draw water from the circulating water intake system located on Lake Anna¹¹—a much larger man-made body of water located on the opposite side of the facility from the reservoir. This backup supply is designed to satisfy the normal and emergency service water requirements for Units 1 and 2 (FSAR, 9.2.1-10). In addition to providing an independent supply to service water, Lake Anna can also serve as an ultimate heat sink for the plant (FSAR, 9.2.1-1).

2. As will be seen from our discussion of the evidence later in this opinion, certain components of the service water system have settled in varying amounts during the eight-year period since the construction of the pumphouse began. For its part, the pumphouse has settled more than half a foot.

Surveillance requirements and allowable settlement limits for all “Seismic Category I” systems and structures at North Anna¹² are to be found in the facility’s technical specifications.¹³ It is there stipulated that if 75% of the allowable settlement limit for a particular structure or system is reached, the utility must initiate an engineering review of the problem. If that limit is exceeded, the plant must be shut down. See Technical Specification 3/4.7.12.¹⁴

⁹ See fn. 54, *infra*.

¹⁰ The spray system is designed to facilitate the removal of heat from the service water as it is returned to the reservoir.

¹¹ The circulating water system provides water to the condenser where it is used to cool the steam leaving the turbine generator. This system uses its own independent pumps. Should Lake Anna be called upon to supply service water, different pumps located at the circulating water intake structure would be used and the heated service water would be returned to Lake Anna via the circulating water discharge tunnel and the cooling canals. The two pumps at the intake structure are identical to those at the service water pumphouse.

¹² According to Regulatory Guide 1.29, Seismic Design Classification, a Seismic Category I designation is applied to “[t]hose structures, systems, and components that should be designed to remain functional if the SSE [Safe Shutdown Earthquake] occurs” The service water system is so classified.

¹³ Technical specifications, which are imposed upon a licensee by the NRC, establish various requirements designed to ensure the safe operation of a nuclear plant.

¹⁴ Other Seismic Category I systems and structures at North Anna monitored for settlement include, *inter alia*, the containment (reactor) building, the service building and the auxiliary building. Moreover, although it is not a Category I structure, the turbine building is also monitored for this purpose. See Technical Specification 3/4.7.12, Table 3.7-5. Unlike the

(Continued on next page)

The North Anna technical specifications, issued in November 1977, decreed that the settlement of the pumphouse after December 1975 could not exceed 0.15 feet (1.8 inches).¹⁵ By March 1978, the settlement had exceeded 75 percent of that "allowable limit." At that point, the applicant performed the required engineering evaluation and thereafter requested that the allowable limit be increased.

The safety implications of the proposed increase were the primary focus of our hearing. In assessing whether the limit could be increased safely, we concentrated on the following four issues:

- (1) The cause of past settlement and the potential for future settlement.
- (2) The level of settlement that might threaten the integrity of the service water system.
- (3) The effects of a failure in the service water system upon the safety of the plant.
- (4) The technical specification conditions necessary to ensure that operation of the facility will not endanger the public health and safety.

II. THE EVIDENCE OF RECORD

In our order directing the evidentiary hearing, we asked the parties to include in their prepared testimony: a self-contained synopsis of settlement history; an exploration of the relationship to the settlement phenomenon to public health and safety; a discussion of the relevant soil mechanics; the basis for the staff's dewatering requirements; details of the settlement monitoring program; and additional details of the stress analyses performed in evaluating the effects of settlement. ALAB-529, *supra*, 9 NRC at 155-57. These subjects were all addressed at the hearing. Rather than treat each of them independently, we have arranged our discussion of the evidence to correspond roughly with the four areas of primary concern outlined at the conclusion of Part I, *supra*.

(Continued from previous page)

pumphouse, these structures do not rest upon a deep bed of saprolite. See discussion p. 195, *infra*. Although some of them have settled to some extent, none has experienced sufficient settlement to warrant further inquiry by this Board. See Tr. 131-51. In this connection, the highest percentage of the technical specifications limits reached by the settlement of any of these buildings is 47 percent (at the south wall of the service building); the containment building (founded on rock) and the structure housing the backup service water pumps at Lake Anna (founded on a thin layer of saprolite) have not settled at all (Tr. 145-57).

¹⁵ This figure corresponded to the prediction of future settlement contained in the FSAR (at p. 3-7 of Appendix E to Amendment 44, dated December 29, 1975). The "FSAR prediction" was specifically referred to in the technical specifications. See Technical Specification 3/4.7.12, pp. B 3/4.7-7 and 7-8.

A. History of Settlement

As mentioned previously, our concern regarding the integrity of the service water system stemmed from the unanticipated and unexplained magnitude of settlement of various parts of the system. We therefore find it appropriate to set out the settlement history in some detail. We shall focus upon the settlement of the pumphouse in this discussion because most of the settlement affecting the service water system piping has taken place in the area closest to that structure and because the pumphouse has a more detailed monitoring history than any other part of the system. We have attempted to correlate incidences of settlement with construction activity so as to gain an understanding of the causes of settlement at North Anna. The difficulties we have experienced in this endeavor parallel those which the applicant and staff encountered in their efforts to comprehend the problem.

1. The pumphouse and the dike upon which it rests are situated atop a layer of compressible saprolite, sixty-five feet in depth. Saprolite is a "soft, earthy, clay-rich, thoroughly decomposed rock formed in place by chemical weathering of igneous and metamorphic rocks." American Geological Institute, *Glossary of Geology*, 630 (1972). The saprolite at North Anna is composed of grains of hard angular quartz; grains of feldspar partially altered into clay minerals; and bands of mica particles (App. Test., p. 38). Although the saprolite contains a large percentage of clay minerals, applicant's witness Bruce N. MacIver testified that those minerals are cemented together into larger particles which behave more like silt than clay (Tr. 63).¹⁶

Saprolite, produced by the weathering of granite gneiss rock, differs from transported soil.¹⁷ Transported soils exhibit a uniformity of individual particles, allowing the soils to be classified according to average properties and thereby enabling engineers to predict their behavior with some degree of accuracy. Saprolite lacks the consistency in character and arrangement of particles exhibited by transported soils. With its more complicated arrangement of different minerals, saprolite's response to changes in stress cannot be predicted accurately by mechanical models. App. Test., pp. 37-38.

2. In its supplemental prefiled testimony, the applicant touched upon some aspects of settlement theory (App. Supp. Test., pp. 4-13). While there was disagreement among the parties at the hearing respecting the reasons for the unexpected magnitude of settlement at North Anna, this treatment of the general causes of settlement was not questioned.

¹⁶ According to Mr. MacIver, this makes saprolite more resistant to settlement, because silt is a stronger material than clay as far as loadings are concerned (Tr. 63).

¹⁷ Transported soils are developed from decomposed rock and then modified during the various phases of the transporting process (*e.g.*, erosion, sorting, sedimentation, and consolidation) (App. Test., p. 37).

According to the applicant, whenever a new structure is placed upon a compressible material, the application of the contact stress of the structure (*i.e.*, its weight distributed over its foundation area) upon the underlying material should cause the structure to settle. The rate of settlement is directly related to (1) the average compressibility of the underlying material; (2) the thickness of the material; and (3) the increase in the "effective stress" upon the material. Effective stress is, in turn, a function of (1) the contact stress; (2) the total weight (soil particles plus water) of the soil above the groundwater level; and (3) the buoyant weight (total weight minus the weight of a corresponding volume of water) of the soil below the groundwater level. App. Supp. Test., pp. 4-5.

If the effective stress remains constant, a new structure should settle rapidly for a relatively brief period of time (this period of settlement is called primary consolidation) and thereafter settle at a slow, diminishing rate (secondary consolidation) (*id.*, p. 5).

Only two factors should cause an increase in the rate of settlement: an increase in effective stress or an increase in the compressibility of the underlying material. If the contact stress remains constant (as it should once construction is completed), effective stress can be increased only by increasing the water content of the material above groundwater level or by lowering the groundwater level itself. *Id.*, pp. 5-7. An increase in the compressibility of the material can sometimes be effected by an increase in the degree of water saturation of the material (*id.*, p. 11).¹⁸

3. Because of the nature of the soil underneath the pumphouse, it was expected that some construction-related settlement would occur. Before any construction began, the consulting firm of Dames & Moore conducted a number of soil borings and laboratory consolidation tests. Based on these tests, applicant's engineering firm (Stone & Webster) estimated that the pumphouse might settle as much as 0.12 feet (or nearly 1-1/2 inches) during the life of the plant. App. Test., pp. 7-8; FSAR, p. 3.8-133.

Construction excavation for the pumphouse was commenced in January 1972. Two months later, Stone & Webster began pouring concrete for the bottom mat and walls. Concrete for the operating floor slab was poured across the top of the walls on August 25, 1972; this date marks the start of

¹⁸ The record does not make clear the circumstances in which increased water saturation leads to increased compressibility. Mr. MacIver testified that the saprolite at North Anna does not exhibit greater compressibility upon the introduction of large amounts of water (Tr. 195-96). He thus rejected the suggestion that heavy rains in 1975 might have increased the compressibility of the saprolite and been responsible for a large amount of settlement. The staff was of the different belief that increased water concentration could weaken the saprolite and result in greater amounts of settlement (Staff Test., pp. 26-27). As the exact causes of the settlement at North Anna remain a mystery, neither party's view can be taken as conclusive.

applicant's settlement monitoring record.¹⁹ During the next two months, the pumphouse equipment was installed and a three-foot layer of clay fill was compacted against the pumphouse walls. By October 18, 1972, most of the contact stress had been applied at the site. App. Test., pp. 8-9.

It soon became apparent that the amount of settlement would be much greater than Stone & Webster had predicted. The first measurements, taken on December 4, 1972, indicated that, in little more than three months, the pumphouse had already experienced its anticipated plant-life settlement of 0.12 feet.²⁰ After reviewing the situation, Stone & Webster nonetheless determined that construction should continued. *Id.*, pp. 9-10.

By April 11, 1973, Stone & Webster had completed pouring the concrete for the upper walls and roof of the pumphouse. Settlement continued at a fairly even pace through the end of the year, reaching a total of 0.195 feet (2-1/3 inches) by January 1974. Settlement then appears to have levelled off until fill material was placed for the reservoir dike between March 6 and May 10. When the dike was brought to its crest on May 10, the final structural load had been added to the foundation. A reading taken on June 27, 1974, indicated that the pumphouse had then settled an average of 0.265 feet (slightly over three inches).

After June 27, the rate of settlement slowed down somewhat; the incremental settlement over the next five months totaled only 0.03 feet (3/8 of an inch). In December and January, however, the rate increased precipitously. At the beginning of December, the average settlement measured 0.295 feet; by

¹⁹ Pumphouse settlement is determined by measuring the elevation of the corners of the operating floor slab and comparing the measurements with the elevation of the slab on August 25, 1972. Five points on the slab were originally selected for surveying—two are situated at the northeast corner of the pumphouse; the other three are located at the northwest, southwest, and southeast corners. As settlement increased, additional points were selected for monitoring. For the exact location of the original and additional monitoring points, see VEPCO Figure 6.

²⁰ Settlement of the pumphouse has been expressed as an average figure. The settlement at each of the four corners has proceeded at differing rates; the northwest corner has settled substantially faster than the others, while the southeast corner has settled at a substantially lower rate. The December 4 measurement, for example, showed an average settlement of 0.12 feet, with a settlement of 0.223 feet at the northwest corner and only 0.019 feet at the southeast corner. These differing rates of settlement have produced a noticeable tilt in the pumphouse towards the northwest. Tables showing the settlement figures for the individual monitoring points are found in VEPCO Table 1; a graph describing the average settlement is shown in VEPCO Figures 7A through 7G. Mr. MacIver testified that the measurements are probably accurate within five thousandths (0.005) of a foot (1/16 of an inch) (Tr. 85).

The foregoing discussion should not be taken as implying our necessary agreement with the use of average settlement of the four corners of the structure, rather than a more appropriate measure of the severity of the problem. As will be seen, average settlement measurements are no longer employed. See p. 212, *infra*.

early February 1975, it was recorded at 0.38 feet (an increase of one inch). This increase occurred without any additional load being placed upon the saprolite.

Although the applicant increased its monitoring frequency in 1975, no additional settlement was registered until the end of that year. As in 1974, December saw a noticeable rise in settlement without any additions to the structural load. That is, the average settlement remained at 0.38 feet until December 20,²¹ but was recorded to have increased 3/16 of an inch to 0.395 feet by January 2, 1976.

No additional settlement was registered until August 1976, when water was first placed in the service water reservoir. The water in the reservoir was brought to its highest level in early October 1976; the first dewatering drain was installed at the same time.²² The survey records for the end of 1976 show a slight increase in settlement in late August (0.005 feet), no increase in September, a larger increase in October (0.015 feet), no increase in November, and a sharp increase during the first two weeks of December (0.025 feet). The applicant attributed this settlement to the filling of the reservoir (App. Test., p. 17). (Such an explanation may seem adequate for the August and October settlements, but it hardly explains the sharp increase in December preceded by the absence of settlement in November.)²³

No new settlement was observed until the installation of the remaining horizontal drains during the summer of 1977. Drains 4 and 6 were installed in early July. Between July 11 and August 3, 0.048 feet of settlement was recorded. The installation of the last three drains (Drains 2, 3, and 5) was accompanied by no further settlement.²⁴

²¹ This later became the base point with respect to the future settlement measurements required by the technical specifications. See pp. 193-194, *supra*.

²² After the rapid settlement that took place during the winter of 1974, the staff instructed the applicant to install six horizontal drains in the area near the pumphouse. The installation of these drains was designed to reduce the (then perceived) effect upon settlement of heavy rains and to avoid drastic fluctuations in groundwater level. See pp. 199-200, *infra*.

²³ The water reached an elevation of 313 feet in the reservoir in late August (elevation of the bottom of the reservoir is 305 feet); the reservoir was drained to almost empty throughout September; upon refilling, water elevation exceeded 315 feet throughout most of October; and the elevation hovered at slightly less than 314 feet throughout November and the first half of December. The settlement history is consistent with the status of the reservoir until December. That month, instead of the negligible amount of settlement which would have been suggested by the previously exhibited water level/settlement relationship, survey records indicate that the pumphouse experienced its sharpest drop of this whole five-month period. Subsequent changes in reservoir water level had no effect on settlement. VEPCO Figure 7E provides a comparison of the reservoir water level and settlement.

²⁴ VEPCO Figure 9 depicts the location of all six drains. If, as applicant has claimed (See p. 200, *infra*), the drains encouraged settlement by lowering the groundwater level, Drain 4 is likely to have had the greatest effect on settlement because of its location directly beneath the pumphouse.

The next 11 months saw no further measured settlement. In late June 1978, a gradual rate of settlement resumed. From June 30, 1978, until June 20, 1979, approximately 0.025 feet of settlement was recorded. Settlement then appeared to pick up in the next two weeks, totaling approximately 0.007 feet. The most recent measurements submitted to us, taken on July 18, 1979, indicated an average settlement of 0.523 feet (a little over six inches) since the pumphouse floor was poured in August 1972, or 0.143 feet since December 1975.²⁵

As is thus seen, the applicant's predictions of the course of pumphouse settlement were far off the mark. Once again, before construction had started in 1972, the applicant had predicted a total settlement of 0.12 feet.²⁶ In late 1975, it forecast that future settlement over the entire lifetime of the facility would not exceed 0.15 feet (and that forecast was carried over into the technical specifications as the allowable limit).²⁷ As it turned out, however, by the time of the hearing in mid-1979, pumphouse settlement had already exceeded 95% of that value and was continuing. In these circumstances, it is hardly surprising that, at the hearing, neither the applicant nor the staff was prepared to continue to rely upon predictions of future settlement. See Tr. 291-92, 341-45.²⁸

4. The mechanisms of the discerned settlement are also not completely understood. To be sure, some of the settlement can be directly correlated with construction activities at the site. But its course over the years has not adhered to the theoretical pattern of rapid initial settlement followed by steady settlement at an ever-decreasing rate. Instead, the pumphouse has experienced a step-like pattern with long periods of relative stability followed by short periods of rapid settlement. In this regard, many of the latter periods do not appear to have been coincident with additions to the structural load.

From time to time, various explanations for this step-like settlement activity have been suggested. One theory had it that heavy rains might be weakening the intermolecular structure of the saprolite. See fn. 18, *supra*; see also App. Test., p. 16. For its part, the applicant now believes that the rapid settlement experienced during the winter of 1974-75 was caused by a delayed reaction to construction activity and not by rainfall (Tr. 47-49). On the other

²⁵ The last measurements we received for *individual* points were taken on June 4, 1979. At that time, the northwest corner had settled 0.719 feet, the southeast corner 0.293 feet, and the northeast and southwest corners 0.517 and 0.505 feet respectively (an average settlement of 0.509 feet). The July 18 figure for average settlement given in the text, was furnished by the applicant in the letter of July 23, 1979, accompanying its Memorandum of Proposed Findings.

²⁶ See pp. 196-197, *supra*.

²⁷ See fn. 15, *supra*, and accompanying text.

²⁸ Settlement measurements of the exposed ends of the service water pipes north of the expansion joints, taken since July, 1977, indicate that the pipes have settled at a greater rate than the pumphouse (App. Test., p. 21). No explanation has been given for this phenomenon. We discuss it further at fn. 41, *infra*.

hand, the staff is still persuaded that heavy rains might have caused the rapid increase in settlement (Staff Test., pp. 23-31). A correlation of heavy rainfalls with settlement figures gives some plausibility to each hypothesis. Heavy rains in December 1974 immediately preceded a large incremental settlement, but equally heavy rains in September of the same year failed to alter the rate of settlement. Additionally, several rains in 1975 apparently had no effect on settlement whatsoever. See Veeco Figures 7C and 7D.

Because of its belief that heavy rains might have been responsible for the rapid settlement which took place at the end of 1974, the staff instructed the applicant to install six horizontal drains in the saprolite near the pumphouse.²⁹ The purpose of these drains was to forestall increases in groundwater level by keeping the level below the elevation of the drains. This in turn would prevent saturation of the soil above the drains by removing excess water. But lowering groundwater also tends to promote settlement by removing the buoyancy effect of the water (App. Supp. Test., p. 6). Mr. MacIver testified that, rather than serving to retard settlement, Drain 4 caused the settlement observed during the summer of 1977 by lowering the groundwater level underneath the pumphouse (Tr. 167-69). Staff witness Lyman W. Heller agreed that Drain 4 was installed below groundwater level and probably caused the incremental settlement (Tr. 362). The staff, however, still believes that the installation of the drains may limit settlement in the future by controlling groundwater (Staff Test., pp. 30-31).

Although the effectiveness of this dewatering attempt has been much debated by the applicant and staff, it is relevant in this proceeding only to the extent it adds to our comprehension of the mechanics of settlement. The applicant has made certain assertions that might be construed as implying that it is somehow entitled to an increase in allowable settlement because staff-ordered dewatering may have contributed to the problem. We categorically reject any such suggestion. Our concern here is with the safe operation of the plant and not with the allocation of blame for past settlement.

B. Pipe Stresses and Pump Tilting Induced by Settlement

Although our focus to this point has been on the settlement of the pumphouse itself, that settlement is a matter of concern only insofar as it, in turn, has affected the integrity of the service water system pipes which run between the pumphouse and the facility components which are cooled by that system.³⁰ For this reason, much of the evidentiary hearing addressed the

²⁹ As already noted, pp. 198-199, *supra*, one of the drains was installed in October of 1976, the remainder in the summer of 1977. See Veeco Figure 9 for the exact locations of the drains.

³⁰ Some questions were also raised relating, *inter alia*, to the effect of tilting of the pumphouse on operation of the pumps housed within that building. They are considered in more detail at pp. 205-207, *infra*.

problem of determining the level of settlement which would place unacceptable stresses on the SWS piping—which, being affixed to the pumphouse, necessarily is also experiencing settlement. The staff and applicant used different methods to determine stress limits. Although those parties came to similar conclusions, we will analyze each method individually.

1. Before turning to the pipe stress analyses, some mention should be made of the configuration of the service water pipe system. The service water pipes penetrate the north wall of the pumphouse (in which they are embedded) and continue for several feet beyond that wall before turning down through a 30-degree elbow at the top of the dike to enter the ground. The pipes extend downward for about 65 feet, at which point 47-degree elbows (at the bottom of the dike) angle them to the northwest. Proceeding approximately 63 feet in this direction, the pipes encounter 7-degree elbows which bring them into a 260-foot level run toward the main plant. App. Text., p. 57; see also Veeco Figure 26.

The first pipe stress analysis performed by the applicant in 1975 indicated that the level of pumphouse settlement then being experienced was inducing excessive stresses in the buried portion of the pipes (App. Test., pp. 12-15). The applicant's computations indicated three areas of high stress, located at: (1) the entrance to the pumphouse wall, (2) the elbow at the top of the dike and (3) the elbow at the bottom of the dike (FSAR, Amendment 49, p. S3.72-3). In order to relieve the unacceptable stressing, the applicant cut the pipes at the elbow at the top of the dike and installed flexible expansion joints (App. Test., p. 15)³¹ In addition to eliminating the stresses at the point of installation, this relieved the stresses at the other two points by allowing relatively free motion of the pipes on both sides of the expansion joint (FSAR, Amendment 49, p. S3.72-3).

The four expansion joints (one for each of the two supply and two return lines) are located in a concrete covered enclosure just north of the pumphouse. See Veeco Figures 6, 8. Each joint consists of three corrugated bellows with connecting pipes. See Veeco Figure 15. The bellows allow the joints to accommodate different directions of pipe motion, including compression, extension, lateral offset and angular offset (Tr. 93).

Both because they accommodate displacements on each of their ends (thereby minimizing the stresses which would otherwise be transmitted across the joint), and because they were installed at a point where settlement of the pumphouse exerted maximum stress on the pipes, the joints are the limiting components of the SWS insofar as settlement is concerned (*i.e.*, the joints theoretically would be the first part of the system to experience settlement-induced failure) (App. Test., p. 24; Tr. 175-76). The joints have not eliminated

³¹ There was some confusion as to the exact time of installation of these expansion joints, which was finally identified at the hearing as being between August and October of 1976 (Tr. 89).

all of the settlement-induced stresses in the pipes,³² although the applicant's calculations indicate that "the worst-stressed area in this piping is not anywhere near the [stress] limit of the piping itself, but that in fact the most limiting component is the expansion joint itself and not the pipe" (Tr. 175).

2. We turn now to the stress analyses performed by the staff and the applicant. The purpose of the staff evaluation was to obtain assurance that the stresses in the SWS piping do not exceed the allowable values set by Section III of the ASME Boiler and Pressure Vessel Code and that expansion joint movements do not exceed their design values (Staff Test., pp. 35-36). The staff used its analyses in formulating the revised technical specifications which were issued on June 28, 1979. See pp. 212-213, *infra*.

With regard to the capabilities of the expansion joints³³ the staff relied upon information from the manufacturer which indicated that the joints are designed to accommodate 0.25 feet of lateral movement (*i.e.*, vertical or horizontal) of one end with respect to the other (Staff Test., p. 37). Such differential movement is measured by comparing (1) markers on the exposed ends of the pipes that are buried in the dike fill north of the expansion joint enclosure and (2) markers on the northeast and northwest corners of the pumphouse (*ibid.*; see also Vepco Figure 6).³⁴ The markers on the exposed ends of the pipe were not in place before July 1977. To determine the settlement across the joints prior to that time, the staff assumed that the exposed ends of the pipes settled the same amount as the top of the dike. The staff further assumed that the joints were installed in December 1975. Staff Test., pp. 36-37.

Between December 1975 and July 1977, the top of the dike settled 0.079 feet and the northwest and northeast corners of the pumphouse settled 0.089 and 0.046 feet respectively. Thus, the differential movement (or settlement)³⁵ across the joints for this period was between 0.010 feet (the absolute of 0.079-0.089) and 0.033 feet (0.079-0.046). The staff adopted a figure of 0.03 feet to represent the estimated differential settlement before July 1977,³⁶ and established an allowable limit of further differential settlement after July 1977

³² Applicant's witnesses indicated that portions of the pipes are still settling and bending (Tr. 175-76).

³³ In its prefiled testimony, the staff referred to expansion joints as "flexible couplings."

³⁴ The markers used to measure pipe settlement on the south side of the joints are located at the corners of the pumphouse. Because the corners of the pumphouse are settling at different rates, and the pipes exit the pumphouse between the northeast and northwest corners (albeit closer to the northeast corner—see Vepco Figure 6), the staff's estimate of pipe settlement on the south side of the joints is based on an interpolation of settlement at the two corners.

³⁵ The only movements with which we are concerned at this juncture stem from settlement.

³⁶ This figure is a conservative one. As mentioned previously, the expansion joints were actually installed sometime after August 1976. Had the staff used settlement figures based on August 1976 instead of December 1975, it would have arrived at a differential settlement figure across the joints of approximately 0.017 feet. See Staff Test., pp. 36-37, Table A.

of 0.22 feet (0.25 feet design limit of the joints minus 0.03 feet experienced differential settlement yields 0.22 feet allowable further differential). *Ibid.*

The staff also evaluated the stresses in the buried pipes. Using a simplified analytical model, it concluded that the pipes could withstand 1.00 feet of absolute settlement (*id.*, pp. 38-39). An existing settlement of 0.77 feet as of August 3, 1978, was derived from various monitoring records (*id.*, p. 40). This estimate, which assumed that the pipes became embedded in the dike in August 1972 and settled thereafter at the same rate as the dike, was the basis for the staff's imposition of an allowable limit of 0.22 feet of *absolute* settlement after August 3, 1978 (*id.*, p. 41).³⁷ In reality, the pipes were not embedded in the dike until August of 1973. The staff believes that, in light of its misapprehension, the allowable settlement could be increased to 0.37 feet³⁸ without exceeding code limits for pipe stresses. Nonetheless, the staff did not increase the allowable limit in the technical specifications to 0.37 feet; it merely pointed out in its testimony that the 0.22 feet limit contained an added degree of conservatism. *Ibid.*

For their part, the applicant's stress analyses utilized a computer code called NUPIPE (Tr. 100-01; App. Test., p. 55). That computer code is used to model the portion of the SWS piping that extends from the pumphouse to a point 63 feet into the 260-foot level run towards the plant. This portion, approximately 200 feet in length, includes all the piping that is affected by pumphouse and dike settlement. NUPIPE takes into account pipe flexibility, forces resulting from pipe motions resisted by soil friction, and (in the applicant's recent analyses) the presence of the expansion joints. It also utilizes a relative settlement distribution profile constructed by the applicant to account for settlement of the buried pipes. App. Test., pp. 55-59.³⁹

NUPIPE was employed to determine the necessity of the installation of the expansion joints. It was also used to determine the technical specification settlement limits for piping connected to many Class I structures. The initial technical specification for pumphouse settlement, however, was based on the expected amount of future settlement and not on an analysis of pipe stress limits. App. Text., pp. 13-16.⁴⁰

³⁷ The stress limits would seem to have allowed an additional settlement of 0.23 rather than 0.22 feet. Presumably, the staff chose the lower figure to ensure a degree of conservatism.

³⁸ The dike settled at least 0.15 feet between August 1972 and August 1973 (*id.*, p. 41).

³⁹ Additional details on the NUPIPE code and its application in this case can be found in documents relied on and referred to by the staff in its safety evaluation of the applicant's request to revise the settlement technical specifications. This evaluation was attached to a letter from staff counsel to this Board dated January 9, 1979. Other documents pertinent to the applicant's analyses include: the proposed technical specification revision (contained in a letter from Mr. Stallings (VEPCO) to Mr. Case (NRC) dated June 13, 1978) and the applicant's response to the staff's request for more information on its stress analysis (contained in a letter from Mr. Brown (VEPCO) to Mr. Denton (NRC) dated August 2, 1978).

⁴⁰ The technical specifications are discussed in greater detail at pp. 211-214, *infra*.

A later NUPIPE stress analysis was performed in 1978 after the average settlement of the pumphouse had exceeded 75% of its allowable limit. The results of this analysis were reported to the staff on May 31, 1978. According to the analysis, the expansion joints could safely accommodate an average pumphouse settlement of 0.33 feet from December 1975 (as opposed to the technical specification limit of 0.15 feet from that date). *Id.*, pp. 18-19; see also Tr. 96-103. The computations also indicated that pumphouse settlement of 0.33 feet since December 1975 would not result in pipe stresses exceeding the ASME code allowable values. See applicant's "Special Report - Settlement of Service Water Pump House North Anna Power Station-Unit No. 1," dated May 31, 1978, p. 10.⁴¹ The applicant, therefore, requested that the technical specification be revised to increase the allowable settlement limit for the pumphouse to 0.33 feet from December 1975.

3. Because the expansion joints are the limiting components of the SWS (see 202, *supra*), the applicant presented detailed testimony concerning the operational capabilities of the joints. We were told that, under settlement-induced compression to 100 percent of the proposed technical specification limit of 0.33 feet, an expansion joint could undergo 39,000 cycles before failure might be expected to occur (App. Test., p. 26).⁴² Further, according to the applicant, the bellows of that joint would not be compressed solid (*i.e.*, there would still be room left for further compression) until settlement greater than 0.66 feet had occurred. When the bellows are compressed solid, the joints can still absorb more than 2,500 cycles (a number far greater than the 1,000

⁴¹ For the purposes of this analysis, the exposed ends of the pipes were assumed to settle at the same rate as the pumphouse. As mentioned earlier (see fn. 28, *supra*), the exposed ends, in fact, have experienced a greater settlement during the past two years. Peak stresses in the pipes, however, are not strongly sensitive to the actual amount of settlement (stresses in the pipes are due to a variety of sources). App. Test., pp. 59-60. To assure that such stresses will remain below code allowable values, the staff has placed a limit on the amount of pipe settlement that will be allowed. That limit (0.22 feet from August 1978) is based on the staff's own independent stress analysis and is much greater than the value of, roughly, 0.04 feet (over the same period) that had been recorded just before the hearing. See pp. 202-203, *supra*; see also Vepco Figures 25A, 25B. The applicant's analysis also failed to take into account the effect of more rapid pipe settlement on displacement across the joints. The joints have been designed to take up to three inches off lateral displacement (Staff Test., pp. 9; Tr. 320-21, 330; see also p. 202, *supra*). A witness for the applicant told us that, at an average pumphouse settlement of 0.33 feet (measured from December 1975), the displacement across the joints would only be about 0.5 inches (Tr. 330-31). Although the displacement across the joints may be larger than anticipated by the applicant should the pipes continue to settle faster than the pumphouse, that displacement is restricted to an acceptable value by the differential settlement limit imposed by the staff. See pp. 202-203, *supra*.

⁴² Cyclic loads, as well as settlement-induced loads, affect the integrity of the bellows. The manufacturer of the joints defines a cycle as one expansion and contraction of the bellows assembly (Tr. 239). The major component of such cyclic loads at North Anna is the thermal change induced from starting up or shutting down the plant (Tr. 176-77, 217-18, 239). The system is expected to experience 1,000 cycles during the lifetime of the plant (App. Test., pp. 26, 29; Tr. 218).

cycles expected during the plant lifetime). *Id.*, pp. 28-29; Tr. 221-22. To induce a failure directly, (*i.e.*, without regard to cycling), a settlement of about six times that observed between December 1975 and April 1979 (approximately 0.75 feet) would be required (App. Test., p. 30).

Tests performed by the manufacturer indicated that any expansion joint failures resulting from settlement would most likely be in the form of pinhole leaks (*id.*, pp. 29-30; Tr. 113-14, 177-81, 221-22).⁴³ Leaks of that character can eventually develop into complete breaks, but water would continue to flow through the pipes (albeit at a lesser rate) while the break propagated. This is in contrast to a guillotine type of failure, which is usually assumed for convenience in analyses involving the effect of breaks in fluid systems.⁴⁴ Such a failure entails a complete severance of a pipe together with a displacement of the severed ends, thus allowing an unimpeded flow of liquid from both ends of the break. Guillotine failures are more likely to occur in high pressure systems such as the primary cooling system (which operates at a pressure of about 2235 pounds per square inch, FSAR, p. 5.1-13) than in lower pressure systems such as the SWS (which operates at only 250 pounds per square inch, FSAR, p. 9.2.1-27). It is thus very unlikely that a settlement-induced failure in the service water system would result in a guillotine break.⁴⁵

4. In its testimony, the staff expressed some concern that pumphouse settlement might bring about a misalignment of the pumps from tilting of the floor of the structure (Staff Test., pp. 43-44).⁴⁶ As we noted earlier, the pumphouse has settled with a noticeable tilt towards the northeast. See fn. 20, *supra*. Being affixed to the floor of the pumphouse, and having their rotating shafts oriented vertically, the pumps shift out of vertical alignment as the floor tilts. According to the staff, the applicant is required to shim the pumps as needed to keep them within the limits on vertical misalignment recommended by the manufacturer (Staff Settlement SER, p. 6). Measurements are taken of pump performance parameters (*e.g.*, differential pressure, flow rate and vibration amplitude); should those measurements exceed the prescribed tolerance limits, corrective action is mandated (*id.*, p. 7). The timing of, and

⁴³ The applicant produced a witness who specifically addressed the subject of expansion joint testing and the nature of expansion joint failures (Tr. 234-49, 281-83).

⁴⁴ The applicant assumed guillotine failures in the analysis it made regarding the effect of postulated failures in the SWS. See App. Test., pp. 31-35.

⁴⁵ Factors other than pressure also militate against a guillotine break. In particular, the pipes are buried over much of their length and expansion joint displacement will be minimized (in the event of a break) by tie rods. See fn. 60, *infra*.

⁴⁶ See also the staff's "Safety Evaluation of Virginia Electric and Power Company's (VEPCO's) Request to Revise Technical Specifications of Section 3/4.7.12, 'Settlement of Class I Structures' of Operating License NPF-4-North Anna Power Station-Unit 1," pp. 6-7, attached to a letter from staff counsel to this Board dated January 9, 1979. This document is hereinafter referred to as the "Staff Settlement SER."

procedure for, the measurement taking, together with the values for the tolerance limits, are specified in Article IWP 3000 of Section XI of the ASME Code (*ibid.*). The applicant is required by Commission regulations to adhere to these code requirements. See 10 CFR 50.55a(g).

In the course of this monitoring, one SWS pump for Unit 2 and both of the screen wash pumps⁴⁷ were found to be outside the manufacturer's allowable "out of alignment" limits (neither of the two SWS pumps for Unit 1 had likewise tilted beyond its allowable limit). The manufacturer and the applicant both believe that the pumps can remain operational until they exceed their alignment limits by a substantial margin (Tr. 26-27, 189).⁴⁸ Nonetheless, shimming of the pumps is required if they tilt more than 0.011 inches per foot, and means of resolving the problem are currently being investigated.⁴⁹ At the time of the hearing, the two service water pumps for Unit 1 were reported to have tilted 0.008 and 0.005 inches per foot, still within the 0.011 inches per foot limit (Tr. 190).

5. The staff identified three other potential problems associated with settlement of the pumphouse: (1) reservoir leakage, (2) cracking of the pumphouse floor, and (3) the effect on service water spray piping connections (Staff Settlement SER, pp. 8-11). Because none of them relates directly to a potential immediate threat to the functioning of the SWS, they were not extensively discussed at the hearing. We take note of them here, however, for the sake of completeness.

The staff was concerned (presumably) that leakage from the reservoir would contribute to pumphouse settlement by weakening the underlying soil. The staff resolved this concern by relying on the fact that groundwater flow is monitored. Thus, any leakage through the reservoir liner would be detected, because it would contribute to groundwater flow. See Technical Specification 3/4.7.13.⁵⁰ A measurement of three times the average annual groundwater flow requires further evaluation and reporting. Respecting pumphouse floor

⁴⁷ The screen wash pumps are used to cleanse the screen which filters water drawn from the reservoir (FSAR, pp. 9.2.1-14, 16).

⁴⁸ Although the limit is currently set at 0.29 inches of total allowable displacement (corresponding to 0.011 inches per foot for a 26-foot long pump), the manufacturer indicated that the pumps can still function with a total displacement of 0.5 inches (Staff Test., p. 43).

⁴⁹ North Anna Station Manager, W.R. Cartwright stated that the applicant had encountered some difficulties in shimming the pumps, but still considered shimming possible (Tr. 26-27).

⁵⁰ The applicant argued that the design of the reservoir, together with precautionary measures it had already taken, would prevent leakage (App. Supp. Test., pp. 13-16).

cracking,⁵¹ it is now required that the out-of-plane distortion of the pumphouse foundation (determined by measurements of settlement markers SM-7, 8, 9, and 10) not exceed 0.06 feet. Finally, the staff's concern that settlement of the pumphouse might result in excess stresses in the spray piping was addressed by limiting the differential settlement between SM-8 (the southeast corner of the pumphouse) and markers H-569 and H-584 (pipe support hangers) to 0.175 feet (measured from June 1975 when the hangers were installed).

C. Relationship of Pumphouse Settlement to the Public Health and Safety

The staff and applicant based their conclusions that settlement of the pumphouse would not adversely affect the public health and safety on the following premises: (1) a settlement-induced break in the service water system is highly unlikely; (2) any break that might occur would develop slowly enough to allow time for corrective action; and (3) the system contains sufficient backup equipment to accommodate any such break.

A break is believed to be unlikely because the level of settlement is not expected to exceed the limits established by the revised technical specifications.⁵² Moreover, so the theory goes, even if settlement should reach these limits, stresses in the pipes and expansion joints would not yet be great enough to cause a break. See pp. 204-205, *supra*. At this point, new expansion joints could be installed to relieve then-existing stresses.⁵³

Nonetheless, both the applicant and staff produced evidence dealing with the effects of a failure in the service water system. Before discussing this evidence, some additional details of the service water pipe configuration should be provided. As previously noted (pp. 192-193, 202, *supra*), two redundant expansion joints are connected to the supply pipe lines, and two to the return lines. See Vepco Figure 12. The service water pipes drop seventy feet in elevation once they have left the expansion joints. See Vepco Figure 22. Thereafter, the pipes are joined near the main plant by the auxiliary service water pipes. See FSAR, Amendment 24, Figures S9.18-2 through S9.18-9. The auxiliary system thus uses none of the piping threatened by settlement of the pumphouse.

1. With these details in mind, we now consider settlement-induced postulated failures in the service water system. The applicant analyzed a

⁵¹ The record does not reveal the reasons for the staff's concerns in this regard.

⁵² While most settlement predictions were shown at the hearing to be unreliable, settlement generally diminishes with the passage of time (see pp. 195-196, *supra*).

⁵³ Just as in 1976, "physical system modifications to regain the original flexibility of the expansion joints . . . could be accomplished by cutting and rewelding the pipe section of the expansion joint or the adjacent service water pipe" (App. Test., p. 27). See also Tr. 178.

failure of an expansion joint in a return header,⁵⁴ a failure of such a joint in a supply header, and a simultaneous failure of all four joints. Each of these failures was assumed to occur after the plant had been placed in a shutdown condition.⁵⁵ In all of these postulated cases, plant operators would have ample time to realign the system to use the auxiliary pumps located at the lake or to switch (in the case of a single failure) to the redundant header at the pumphouse.⁵⁶

In the event of an expansion joint failure in a return header, there would be no immediate effect on the cooling capacity of the SWS since the break would occur "downstream" of the point at which heat is removed (App. Test., p. 31). The reservoir has the capacity to supply service water for forty hours under these conditions (unless makeup water is supplied to the reservoir, in which case the system could remain in operation indefinitely). A switch can be made to the auxiliary service water system in less than 15 minutes,⁵⁷ well within the forty-hour time period before the reservoir would be depleted. *Id.*, pp. 31-32; Tr. 117.

Should an expansion joint in a supply header fail, the consequences of the resultant loss of service water coolant would be encountered relatively quickly.⁵⁸ There would then be two alternatives: the redundant supply header could be put into use or the failed header could be capped and the auxiliary system used.⁵⁹ App. Test., p. 32; see also Vepco Figure 18. Flow could be reestablished in fifteen minutes using either alternative.

⁵⁴ A header is a section of piping that provides a common conduit (path) for flow of fluids originating from different sources or leading to different points of use. For our purposes, a header should be understood to include that part of the service water piping between the pumps and the expansion joints.

⁵⁵ This assumption was based on the belief that the expansion joints would not fail until stresses in them exceeded (or at least approached) the design limits. The technical specifications require the plant to be shut down if the settlement limits are exceeded; even at the revised settlement limit, the expansion joints would have reached only 40 percent of their elastic limits. Tr. 115, 180; see also pp. 204-205, *supra*.

⁵⁶ The staff reviewed and concurred in this aspect of the applicant's testimony (Staff Test., pp. 9-11).

⁵⁷ Switching to the auxiliary system requires the use of motor-controlled valves to realign the system piping and startup of the auxiliary service water pumps at the circulating water intake on Lake Anna. The switching is done from the control room and takes no more than 15 minutes. App. Test., p. 33; Tr. 24.

⁵⁸ Although service water would be lost immediately, Mr. Cartwright estimated that the plant (while shut down) would not experience any adverse effects following a total loss of service water for at least thirty minutes (Tr. 184-86).

⁵⁹ The record does not clearly indicate the actual procedure the applicant would follow or the time necessary to cap a header. Nor does it indicate how a switch would be made to the redundant header. Examination of various piping diagrams reveals, however, that many options exist for making various valve alignments in the SWS. See FSAR, Figures 9.2.1.2-1 through 9.2.1.2-3. The simplest procedure would probably be to turn off the pump on the failed header and to make

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Given a failure of all four expansion joints, a switch would have to be made to the Lake Anna-based auxiliary service water system. As mentioned previously, it would take no more than fifteen minutes to switch to that system, which, once operating, is capable of performing all the functions performed by the reservoir-based service water system (see p. 193, *supra*).

Although it might be at least 24 hours before a failed header could be capped (see fn. 59, *supra*), the auxiliary system can operate effectively before such capping is accomplished. This is so because the expansion joints are located seventy feet above Lake Anna, while the components cooled by the service water system are located just slightly above the level of the lake. A small portion of the auxiliary system's flow might rise seventy feet and be lost through the break, but the great majority of the flow would still be directed to the plant. App. Test., pp. 33-35.

The applicant's prepared testimony dealt only with failure of an expansion joint after the plant was placed in a shutdown condition. At the hearing, we asked if an analysis had been made of a sudden guillotine break in an expansion joint while the plant was a full power. Mr. Cartwright did not believe this had been done (Tr. 284-85). But he had earlier testified that, if the service water pumps failed, the auxiliary pumps could then provide sufficient service water to shut the plant down in conformity with the technical specifications (Tr. 30-31). Another witness for the applicant pointed out that the loss of one of the four service water pipe lines while the plant is operating at full power is one of the contingencies take into account in designing the system (Tr. 285). A staff witness later testified that the staff had reviewed, and found acceptable, the consequences of such a loss (Tr. 377, 453-54). If the service water system is designed to that the plant can safely withstand a failure equivalent to a sudden loss of one of the four pipe lines, then the failure of one of the expansion joints would likewise not produce untoward consequences.

Counsel for intervenor Arnold questioned the applicant's witnesses regarding the consequence of a failure of all four expansion joints during operation. While such a failure was considered by him to be incredible, Mr. Cartwright indicated that, even if it occurred, a switch to the auxiliary pumps would still provide a means for safely shutting down the plant (Tr. 116-17).

2. Another subject that was probed extensively concerned the ability of the operators to detect a break in the expansion joints so that appropriate corrective actions could be taken in timely fashion. A leak in the service water

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certain that both pumps are operating at full capacity on the redundant header and that both valves are open. Two pumps are lined up to each header with only one pump normally operating (see Vepco Figure 13; FSAR, Amendment 25, p. S9.17-1). In any event, there is testimony that a header could be either repaired or capped within 24 hours (App. Test., p. 32). In addition, the auxiliary system can be used before the failed portion of the header is capped; (see Vepco Figures 18-21).

system would have no significant effect (*i.e.*, adequate cooling would still be provided) until the leak rate approached 3,000 gallons per minute (gpm) (Tr. 226; App. Test., pp. 30-31). A leak rate of this magnitude would be detectable by the monitoring (in the control room) of changes in service water temperature and flow (App. Test., p. 31; Tr. 183). If the leak continued long enough, it could also be detected by a decrease in the level of the reservoir, which is likewise monitored in the control room (Tr. 181-82).

The control room instrumentation readouts of temperature, flow, and pump pressure would probably not indicate leaks at rates below 3,000 gpm (Tr. 226-30). Rates considerably less than that amount would, however, be visible on the ground outside the pumphouse (Tr. 229, 249). Mr. Cartwright noted that a plant procedure requires inspection of the pumphouse twice a shift (every 4 hours) and, to reach the pumphouse, the operator must pass near the small enclosure housing the expansion joints (Tr. 248-49). He stated that a leak of about 1,000 gpm would cause the enclosure to overflow and would be visually detectable, even during a heavy rain (Tr. 249).⁶⁰

3. Because operator action is required to mitigate the consequences of a failure in the service water system, plant procedures prescribe the steps to be taken in the event of such a failure. The operators at North Anna are all trained in those procedures (Tr. 186-87, 285-86).

D. Technical Specifications

Technical specifications are made a part of the operating license for every nuclear facility. Commission regulations divide the items to be covered by technical specifications into five categories. 10 CFR 50.36(c). Category 1 refers to, *inter alia*, safety limits⁶¹; when a safety limit for a nuclear reactor is exceeded, the reactor must be shut down. Category 2 refers to limiting conditions for operation. These are defined as “the lowest functional capability or performance levels of equipment required for safe operation of the facility.” 10 CFR 50.36(c)(2). When such conditions are not met, the licensee must either shut down the reactor or take certain remedial actions prescribed in the technical specification. The settlement limits imposed on the North Anna facility fall within this category.

Categories 3, 4, and 5 refer, respectively, to surveillance requirements, design features, and administrative controls. Section 50.36 is silent on the subject of licensee failure to meet the conditions imposed upon items falling in

⁶⁰ Even a guillotine-type failure might result in a leak rate of less than 3,000 gpm because the expansion joints are attached to tie rods that would prevent their complete separation (Tr. 298). Pinhole leaks necessarily would be accompanied by smaller leak rates.

⁶¹ Safety limits for nuclear reactors are those which are found necessary to protect the integrity of certain of the physical barriers which guard against the uncontrolled release of radioactivity. 10 CFR 50.36(c)(1)(i)(A).

these categories. But the violation of any condition imposed by a technical specification is also a violation of a license issued pursuant to Section 103 of the Atomic Energy Act of 1954 (42 U.S.C. 2133). Depending on the seriousness of the violation, it thus could subject the licensee to the range of sanctions provided in Section 186 and 234 of the Act (42 U.S.C. 2236, 2282).

With this brief background, we turn now to the technical specifications regarding settlement at North Anna.

1. In October 1977, the applicant transmitted to the staff its proposed technical specifications for "Settlement of Class I Structures" (Technical Specification 3/4.7.12).⁶² They (1) set forth allowable settlement values for certain safety-related piping and structures; (2) specified monitoring requirements; (3) called for certain actions by the applicant if settlement exceeded 75 percent of the allowable limits; and (4) required that the plant be shut down if settlement reached 100 percent of the allowable limits.

The proposed technical specifications were adopted by the staff and issued on November 25, 1977. They placed an allowable limit on the average settlement of the pumphouse of 0.15 feet as measured from December 1975. See pp. 193-194, *supra*.⁶³

It must be noted that the original pumphouse settlement limit was based on a prediction of the future settlement that that structure was expected to experience over its 40-year life, rather than upon an analysis of expected pipe or expansion joint stress limits (App. Test., pp. 15-16).⁶⁴ It was known at that time, however, that the pumphouse could settle 0.25 feet without inducing limiting stresses in these components (FSAR Amendment 49, pp. S3.72-1 through S3.72-5).⁶⁵

On May 31, 1978, the applicant submitted a report to the staff providing its evaluation of "field conditions and . . . the consequences of additional settlement," as required by Technical Specification 3/4.7.12 when settlement reached 75 percent of the technical specification limit.⁶⁶ The results of that

⁶² Technical specifications are joint products of the staff and applicant; the applicant initially furnishes proposed specifications which are then reviewed by the staff. The Commission is not bound by the scope of the proposed specifications, but may include any additional conditions it deems appropriate. See 10 CFR 50.36.

⁶³ The technical specifications also established a differential settlement limit of 0.25 feet between settlement point number 7 (near the northwest corner of the pumphouse) and the points on the north side of the expansion joints (settlement points 15, 16, 17, and 18).

⁶⁴ The applicant's prediction of future settlement upon which the limit was based was submitted to the staff in December 1975 as part of Appendix E to the FSAR for North Anna Units 1 and 2. It was admitted into evidence in this proceeding as Applicant's Exhibit AV-1. See Tr. 17-19.

⁶⁵ Although the limit of 0.15 feet was based on a prediction of future settlement, the applicant (at the time the expansion joints were installed) assumed a settlement of 0.25 feet for use in its NUPIPE evaluation of the stress capabilities of the pipes and expansion joints. The analysis indicated that both the pipes and the joints could safely tolerate a settlement of 0.25 feet. FSAR Amendment 49, pp. S3.72-3 and S3.72-4.

⁶⁶ Measurements in March of 1978 had indicated an average pumphouse settlement greater
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evaluation indicated that pipe stresses would remain within their operating design limits even if further settlement occurred. The applicant's analysis further indicated that settlement of up to 0.33 feet (from December 1975) would still not cause the pipes or expansion joints to exceed permissible design limits. Accordingly, on June 13, 1978, the applicant submitted a proposed change to the technical specifications incorporating this higher value.⁶⁷

2. After requesting and obtaining additional information on this subject, the staff provided its safety evaluation of the request on January 9, 1979.⁶⁸ It essentially agreed with the applicant's basic conclusions; however, it altered the proposal in some respects. The staff's version, which eventually went into effect subject to our final review,⁶⁹ did not impose an absolute limit on pumphouse settlement. Instead, the staff established four distinct limits:⁷⁰

- (a) For the expansion joints—a revised value for the differential settlement limit between either SM-7 or SM-10 and any of the four points SM-15, 16, 17, or 18: *0.22 feet from July 1977;*
- (b) For the service water piping—the total settlement of any of the four points SM-15, 16, 17, or 18 on the north side of the expansion joints: *0.22 feet from August 3, 1978;*
- (c) For the pumphouse floor—a new out-of-plane distortion limit between any of the four points SM-7, 8, 9, and 10 in the pumphouse: *0.06 feet;*
- (d) For the spray piping—a new differential limit between SM-8 and either H-569 or H-584 on the pipe hangers in the reservoir: *0.17 feet from May 1976.*

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than 0.1125 feet (which is 75 percent of the allowable limit of 0.15 feet). A "licensee event report" regarding these measurements was submitted to NRC by the licensee in April, followed by the detailed special report in May referred to above. See pp. I-4 and I-5 of NRC's Inspection and Enforcement Report No. 50-338/78-44 attached to the staff's testimony.

⁶⁷ Letter from Mr. Stallings (VEPCO) to Mr. Case (NRC), dated June 13, 1978, transmitting the applicant's request for "Amendment to Operating License North Anna Power Station Unit No. 1 Proposed Technical Specification Change No. 12."

⁶⁸ Letter from staff counsel to this Board (and all parties), dated January 9, 1979, transmitting the staff's "Safety Evaluation of Virginia Electric and Power Company's (VEPCO's) Request to Revise Technical Specifications of Section 3/4.7.12 'Settlement of Class I Structures' of Operating License NPF-4-North Anna Power Station-Unit 1."

⁶⁹ On June 21, 1979—after the evidentiary hearing had been concluded—we issued an unpublished memorandum notifying the Director of the Office of Nuclear Reactor Regulation that, subject to our further review, we would not foreclose him from increasing the allowable settlement limits if he considered the increase to be warranted. Shortly thereafter, the staff put those revisions into effect. See letter from Mr. Parr (NRC) to Mr. Proffitt (VEPCO), dated June 28, 1979, transmitting "Issuance of Amendment No. 12 to Facility Operating License NPF-4-North Anna Power Station, Unit No. 1."

⁷⁰ For locations of the various settlement points identified in the following paragraphs, see VEPCO Figures 2 and 6.

3. The applicant has now accepted the staff's revised settlement limits. See "Veeco's Memorandum of Proposed Findings," p. 9. On the other hand, intervenor Arnold opposes them. See "Intervenor Arnold's Memorandum of Proposed Findings Regarding Service Water Pumphouse Settlement," pp. 2-3. Her position can be summed up as follows: The initial technical specifications were designed to protect the public health and safety. This goal was to be accomplished through the establishment of settlement limits. Settlement has now (almost) reached the allowable limits. It follows, she maintains, that either the plant should shut down or added safety precautions should be taken to minimize the impact of settlement. Instead, the settlement limits are being raised, unaccompanied by any additional safety measures. As a consequence, a greater risk to the public health and safety is being created.

At first glance, the logic of this position appears unassailable. It fails, however, on its initial assumption. The original settlement limits for North Anna were not determined by a careful analysis to ascertain the level of settlement which might threaten the public health and safety. They were, instead, based upon predictions of future settlement. See pp. 203, 211, *supra*. This is not to say that safety considerations were not a factor in the establishment of the original limit. At that time, the staff analyzed the applicant's proposed limit, determined that it would not threaten the continued integrity of the pipes, and therefore approved it.

On the basis of the pipe stress and expansion joint analyses more recently performed (see pp. 202-205, *supra*), we are satisfied that the revised limits challenged by Mrs. Arnold similarly pose no safety problem. There is thus no reason to overturn the staff's settlement allowances.

Nonetheless, we feel constrained to register our strong disapproval of the manner in which the applicant and staff went about the development of the original pumphouse settlement limit. As we have just pointed out, 0.15 feet was established for that limit on the basis of the applicant's prediction that the further settlement of the pumphouse would not exceed that amount over the facility's lifetime. To be sure, the applicant's analysis, endorsed by the staff, reflected that this limit was sufficiently conservative (else, presumably, it would not have been adopted notwithstanding the prediction). But the analysis showed something more: that, in fact, 0.15 feet was an unnecessarily conservative estimate. More particularly, it appeared that a further settlement of 0.25 feet would involve no danger of the pipes exceeding their design capabilities. See fn. 65, *supra*.

Had the applicant's prediction proved accurate, it would have made no difference that that prediction—rather than an appraisal of what was a reasonable outer limit of permissible further settlement—had been used in fixing the technical specification value of 0.15 feet. But the vice of that approach becomes readily apparent given what turned out to be the

significant inaccuracy of the forecast. With the further settlement approaching the 0.15 limit within a matter of a few years, the applicant found itself required to seek a revision of that limit. Although we have found the revision devised by the staff is adequate to prevent a threat to the public health and safety, the fact remains that, by setting an unduly conservative limit in the first instance, the staff opened itself to the understandable (if unjustified here) charge that technical specification restrictions will be altered anytime the licensee is unable to satisfy them.

4. Apart from the matter of allowable settlement limits, the evidence addressed both (1) the frequency of settlement monitoring and (2) how rapidly the monitoring results must be reported back to the applicant.⁷¹

According to the original technical specifications for North Anna, the settlement of all Category I structures was to be monitored every six months. As part of the revised specifications, the staff increased the monitoring frequency for settlement markers SM-7, 8, 9, 10, 15, 16, 17, 18, H-569, and H-584 to once every thirty-one days. See Technical Specification 4.7.12.1. The staff believes that this monitoring frequency, which is to be observed for the first five years of plant operation, will provide adequate warning if settlement limits are approached (Staff Test., pp. 42-43).⁷² At the end of five years, the applicant is to make an engineering study in order to determine whether there is a need to continue monitoring on a monthly basis (*ibid.*).

Although (at the time of the evidentiary hearing) the applicant was monitoring settlement monthly, Mr. Cartwright stated this was being done because pumphouse settlement had reached ninety percent of its allowable limit and the applicant wished to make certain that limit was not exceeded (Tr. 204-05). Mr. Cartwright also expressed the opinion that:

From a good common sense engineering point of view, a frequency of once per month is excessive, once we can establish that the rate of settlement is sufficiently slow so that there would not be an opportunity for a significant amount of further settlement to occur between readings. Upon our explanation or indication of cessation of the recent further settlement of the four service water lines, an adequate monitoring program would see the reduction of that frequency perhaps to a quarterly basis and eventually back to the original semi-annual basis, and this would be adequate from the standpoint of verifying compliance with the technical specifications.

Tr. 206.

⁷¹ Settlement monitoring is presently being done by Moore, Hardee & Carrouth Associates. They, in turn, submit the results to the applicant (Tr. 80-81, 122-25).

⁷² Groundwater levels and drain flow rates are also monitored monthly. Another reason the staff is interested in monthly settlement monitoring is that it could provide the opportunity to establish a correlation (if one in fact exists) between groundwater conditions and settlement. Tr. 339.

Thus, while Mr. Cartwright believes monitoring once a month might be excessive, he conceded that the applicant does not understand the recent rapid settlement of the four service water lines.⁷³ In any event, the applicant must abide by the present monitoring requirements unless changes in those requirements are approved.

Although, as they currently stand, the technical specifications require that settlement surveys be taken monthly, they do not stipulate how soon the applicant must acquire the survey results. Nor do they establish a time period within which the applicant must plot and interpret the results. These matters are covered instead in the applicant's written internal procedures, which provide the operators of the facility with day-to-day guidance on normal operations, maintenance, and surveillance. Specifically, these procedures require that (1) monitoring results be supplied by the surveyor to the applicant within seven days of the survey (Tr. 122-25, 413-14) and (2) the entire process be completed (*i.e.*, the results be computed and interpreted by the applicant) within thirty-one days of the actual survey (Tr. 412-13).

Intervenor Arnold requested that the seven-day requirement be made a part of the technical specifications. See "Intervenor Arnold's Memorandum of Proposed Findings Regarding Service Water Pumphouse Settlement," p. 17. Both the applicant and staff opposed this request.⁷⁴

In support of her request, Mrs. Arnold called our attention to the applicant's past record insofar as reporting was concerned. In particular, she alleged: (1) Stone and Webster (and perhaps the applicant) should have been aware that pumphouse settlement might have exceeded 75 percent of its allowable limit even before the original technical specification went into effect (Arnold Proposed Findings, pp. 7-8);⁷⁵ (2) in 1977, the applicant was aware that settlement was occurring more rapidly than expected and yet allowed the monitoring frequency to be lessened (*id.*, pp. 8-9);⁷⁶ (3) the applicant had been slow in the past in receiving results from its surveyors (*id.*, p. 10); and (4) the applicant imprudently failed to place survey markers on the pipes north of the expansion joints until two years after the installation of the joints (*id.*, p. 11).

⁷³ These lines have recently settled somewhat faster than the pumphouse itself. See fn. 28, *supra*.

⁷⁴ See "VEPCO's Reply to the Proposed Findings of Intervenor Arnold and the Commonwealth of Virginia," pp. 14-15; "NRC Staff Reply to Intervenor Arnold and Commonwealth of Virginia Memoranda of Proposed Findings Regarding Service Water Pumphouse Settlement," p. 7.

⁷⁵ Although Stone and Webster was no longer performing official surveys for the applicant in 1977 (this function was then in the hands of Moore, Hardee & Carrouth), it had taken a survey in 1977 which indicated that 75% mark had been exceeded. These results were not reported to appropriate personnel until more than five months after the survey was taken (Tr. 159-62, 165).

⁷⁶ Although monitoring at this time was required only every six months, Moore, Hardee & Carrouth was monitoring "on demand" and had actually been taking surveys more frequently than twice a year. The frequency of these surveys decreased after the summer of 1977 (Tr. 156-70).

This "lack of diligence," it was said, justifies the establishment of technical specifications to replace the reliance on applicant's internal procedures to assure timely reporting of survey results (*id.*, p. 12).

The applicant conceded at the hearing that, prior to the institution of its seven-day reporting procedure, its track record in completing surveys had not been a good one. It sometimes took as long as four months for monitoring results to be transmitted from the surveyor to the applicant (Tr. 123-24, 128-30). We were told, however, that those results have been reported back in as little as two or three days since the seven-day procedure was adopted in early 1979 (Tr. 125).⁷⁷ While the applicant intends to see to it that its procedures are followed, it perceives no reason to incorporate them into a technical specification. See "VEPCO Memorandum of Proposed Findings," pp. 24-27.

We encountered two difficulties in evaluating the intervenor's position. To begin with, she mentioned only the seven-day reporting requirement. Although the record is sparse on the point, we infer from the thirty-one day procedure that the applicant must make some computations after it receives results from the surveyor. If this is indeed the case, it would seem that this final compilation deadline should be a greater object of concern than the seven-day reporting deadline. We have thus treated Mrs. Arnold's request as directed to both procedures.

Beyond that, we were confronted with the apparent inability of any witness at the hearing to delineate the practical distinctions between violations of internal reporting procedures and of technical specifications. See Tr. 414-16. As we see it, for present purposes little (if any) distinction exists.

Surveillance requirements constitute Category 3 of the items to be included in technical specifications. See 10 CFR 50.36(c). Thus, if the internal reporting procedures were adopted as formal technical specifications, they would fall into this category. But even remaining as internal procedures, they will have virtually the same impact. This is so because Technical Specification 6.8.1 for North Anna dictates that:

Written procedures shall be established, implemented, and maintained covering the activities referenced below:

c. Surveillance and test activities of safety related equipment

It therefore follows that the failure to "maintain" *i.e.*, observe) internal surveillance-related procedures is, of itself, a violation of technical specification requirements, in this case, of a Category 5 requirement.⁷⁸

⁷⁷ The record does not indicate when the thirty-one day procedure was established.

⁷⁸ Category 5 of the technical specification items includes "provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner." 10 CFR 50.36(c)(5).

As it turns out, as a practical matter the difference between Category 3 and Category 5 technical specifications is not substantial for our purposes. A violation of a Category 5 technical specification subjects the licensee to the same range of potential penalties as does a violation of a Category 3 specification. And in neither instance is a licensee required to shut down its reactor automatically upon realizing that it has failed to observe the technical specification in question; only violations of Category 1 and 2 specifications require this result. See pp. 210-211, *supra*. Nor is there reason to elevate the procedures in question to the status of Category 1 or 2. For, in our opinion, a failure to observe these procedures (whether or not they are directly expressed as technical specifications) does not perforce warrant reactor shutdown. The failure to complete a survey procedure within thirty-one days (or to receive survey results within seven days), unlike the exceeding of a settlement limit (which is a Category 2 technical specification) does not indicate *per se* a potential safety problem. Such situations are routinely (and properly so) handled by the staff on a case-by-case basis.⁷⁹

For our purposes, there would appear to be only one possibly significant distinction between internal procedures and technical specifications. According to Technical Specification 6.8.2, procedures established under Technical Specification 6.8.1 may be changed by the facility's station manager after the change has been reviewed by the Station Nuclear Safety and Operating Committee (a committee composed of engineering and operating personnel at North Anna—see Technical Specification 6.5.1). This is consistent with 10 CFR 50.59(a)(1), which states that a licensee may make changes in procedures described in the safety analysis report (which include surveillance procedures of safety-related equipment) without Commission approval unless the proposed changes involve “change[s] in the technical specifications incorporated in the license or an unreviewed safety question.” The licensee must, however, notify the Commission of any such changes. See 10 CFR 50.59(b). Technical specifications, on the other hand, may not be altered without prior Commission approval. See 10 CFR 50.59, 50.90.

But that consideration does not aid intervenor's position here. We have held 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.” *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). Applying that standard, we there refused to convert certain commitments which the applicant had made into technical

⁷⁹ We need not, and do not, consider here the question of the Commission's authority to impose sanctions against a licensee in the event of willful or repeated violations of technical specifications or other regulatory requirements.

specifications. In this instance, no different result is warranted. To repeat, unless and until they are amended, the applicant is obliged to comply with its established internal procedures to the same extent as if those procedures were incorporated in the technical specifications.

Needless to say, the staff should feel duty-bound to monitor that compliance and we have been given no cause to believe it will not do so. In that regard, there have been three reports issued by the Commission's Office of Inspection and Enforcement within the last two years dealing with extensive inspections covering settlement of the pumphouse and service water pipes. See Staff Test., Appendix A. Given this concrete indication that the staff inspectors are alert to the settlement phenomenon at North Anna, we fully expect that they will fulfill their responsibilities in this area in the future.⁸⁰ Further, should the applicant later decide to amend the internal surveillance reporting procedures here involved, that fact will come to the staff's attention early enough to permit an evaluation of the justification for the amendment before it might have safety implications. To ensure that this is so, we are ordering the applicant to notify the staff of any changes to these procedures, made pursuant to Technical Specification 6.8.2, within 10 days of the Station Manager's final approval of such changes.

5. Finally, two related points warrant our attention. In their discussion of the technical specifications at the hearing, all the parties assumed that the motions of the buried pipes and expansion joints would continue to be determined from calculations based on settlement surveys. The Board asked witnesses for both the applicant (Tr. 231-32, 286-88) and the staff (Tr. 444-49) whether it would be possible, and if so, whether it would not be more desirable to determine the motion of the expansion joints through direct measurement of the joints themselves.⁸¹ Although witnesses for the applicant (Tr. 232) and the staff (Tr. 445) seemed to indicate that direct measurement would be possible, they maintained that reliance on surveys would be adequate.

Unfortunately, both parties misconstrued the thrust of our questions. We were attempting to ascertain whether (on the assumption of its feasibility) direct measurement might be preferable in that it would offer greater accuracy while eliminating the wait for survey results. Because the expansion joints are the limiting components of the service water system (see p. 201, *supra*), timely and accurate monitoring of the joints would seem to be highly desirable; direct measurements could conceivably provide more precise information as to the amounts the joints have moved in each of the directions in which they are capable of moving.⁸² The effect of cyclic events upon the joints could perhaps

⁸⁰ See also Tr. 272-74.

⁸¹ Although the record is silent on this point, it would seem that there is no direct way to measure the buried pipes.

⁸² The joints are capable of accommodating many different directions of motion. See p. 201, *supra*.

be documented. Finally, if a problem in the joints developed, in many cases direct measurements would provide immediate notification; there would be no time lag awaiting a surveyor's report.

While for these reasons we believe that direct monitoring of the expansion joints has advantages over surveying, the evidence of record establishes that surveying provides an adequate means of assuring that these joints remain within their design capabilities. This being the case, we would not be justified in ordering direct monitoring, regardless of its feasibility. Nonetheless, if a more accurate monitoring method could be employed,⁸³ we strongly urge the staff and applicant to consider its adoption.

In that same vein, we believe the applicant would be well-advised to adopt other measures to enhance early detection of any expansion joint leaks—whether settlement-induced or otherwise—that might eventuate. To be sure, we have found that the regime being employed is adequate to provide a reasonable assurance of safety against settlement-induced problems. But in relying upon analytical predictions of the effect of settlement upon the expansion joints, it largely overlooks the practical expedient of checking for small leaks in these sensitive components of the system.

In this connection, the testimony made it clear that any damage to those joints would likely show up first in the form of small cracks ("pinhole leaks") in the bellows, which cracks would eventually propagate circumferentially. Yet it appears that no effort will be undertaken to monitor the joints for these small leaks. True enough, small leaks initially have no safety impact. For until any leaks become quite large (at which point their effects are detectable by control room instruments), the service water system's ability to deliver sufficient cooling water would not be impeded. But there are significant advantages—both in terms of upgrading safety and in retaining operating flexibility—inherent in detecting a small leak before it becomes a major one.

In theory, direct visual observation of the expansion joints would be the surest way to detect small leaks. But this may not be feasible because the joints have been constructed with a protective covering (Tr. 232). In any event, it would be unwise to require the applicant's employees to make repeated trips down the manhole into the expansion joint enclosure⁸⁴ when there is an easier way to accomplish the same objective. On the latter score it should take very little effort and involve negligible expense for the applicant to install a device in the enclosure to detect rising water. If such a device were made to activate a signal outside the enclosure, the presence of a leak would be readily

⁸³ There is nothing in the record which indicated how (or even, for certain, whether) direct monitoring could be accomplished. See Tr. 232, 445.

⁸⁴ Apart from the possible diversion of the employees from other and more important duties, there would be an increased risk of inadvertent damage to the joints.

apprehended by those who—under present procedures—are already required to pass directly by there on inspection tours every four hours.⁸⁵

In light of our finding that the other measures being undertaken are adequate to provide a reasonable assurance of safety, we are not conditioning the plant's operating license to require that this additional precaution be observed. But the extra measure of safety it would achieve, at minimal cost, leads us to record here our expectation that the applicant will soon install and put such a device to use unless, within thirty days, it furnishes us a statement of reasons why it believes it ought not do so.

III. ULTIMATE FINDINGS

On the basis of the disclosures of record summarized above, we make the following findings:

A. Settlement

With respect to the settlement of the various components of the service water system at North Anna:

- (1) There has been much greater pumphouse-related settlement than had been anticipated. See pp. 197-199, *supra*. The reasons for this are unclear.
- (2) The record does not permit any conclusions regarding the efficacy of the staff-ordered dewatering system. Although the installation of Drain 4 apparently was responsible for one increment of settlement, it is unknown whether installation of the drains will prevent future settlement through control of the groundwater level. Additionally, there is insufficient evidence to allow any conclusion as to whether heavy rains may have caused settlement in the past or might cause settlement in the future. See pp. 199-200, *supra*.
- (3) Settlement has followed a step-like pattern (only in part correlated with construction activity), rather than a pattern of slow, steadily diminishing movement. See pp. 197-199, 200, *supra*.
- (4) While its rate has generally slowed down in the past two years, settlement has not stopped. It is of some concern that more settlement was recorded between August 1978 and July 1979 than was recorded between August 1977 and August 1978, and that the increment of settlement recorded in June 1979, although small, was the greatest of any month since July 1977. See pp. 199-200, *supra*.

⁸⁵ See p. 210, *supra*.

Based upon the above findings, we cannot conclude that settlement will cease in the near future, nor is it certain that settlement will never reach a level requiring further modification of the service water system.

B. Pipe Stresses and Pump Tilting

With respect to settlement-induced pipe stresses and pump tilting:

- (1) Stresses in the service water pipes will not exceed ASME code allowable values and expansion joint movements will not exceed their design values at the settlement limits set forth in the revised technical specifications. See pp. 202-205, *supra*.
- (2) The expansion joints are the limiting component of the service water system insofar as settlement is concerned. See p. 202, *supra*.
- (3) The expansion joints are capable of absorbing much greater settlement than that allowed by the revised technical specifications. See pp. 204-205, *supra*.
- (4) Expansion joint failures would likely begin as pinhole leaks rather than as instantaneous guillotine breaks. See pp. 205-206, *supra*.
- (5) The concerns regarding pumphouse tilting, reservoir leakage, cracking of the pumphouse floor and stresses in spray piping have been adequately resolved. See pp. 205-207, *supra*.

C. Public Health and Safety

Although not a matter of certainty, it seems likely that settlement at North Anna will not reach the level necessary to threaten the integrity of the service water piping. In any event, even were that contingency to materialize, the public health and safety would not be endangered for the reasons that:

- (1) A leak of less than 3,000 gallons per minute (gpm) would have little effect on the service water system's functional performance. Leaks greater than 1,000 gpm should be detectable visually. In any event, leaks greater than 3,000 gpm would touch off alarms in the control room. See p. 210, *supra*.⁸⁶
- (2) Once a leak is detected, the plant operators have ample time to switch to the fully redundant auxiliary system or to the other operational header (if available). See pp. 207-209, *supra*.
- (3) Although no settlement-related failures are likely to occur before the plant is brought to a shutdown condition (see fn. 55, *supra*), the facility has been designed to withstand the loss of one service water line during

⁸⁶ In this connection, see the discussion regarding a possible method of detecting smaller leaks at pp. 219-220, *supra*.

operation. See pp. 219-220, *supra*.

- (4) Operators are trained in plant procedures which prescribe actions to take in the event service water is lost. See p. 210, *supra*.

D. Technical Specifications

The revised technical specifications provide an adequate assurance that future settlement of the service water pumphouse for North Anna Units 1 and 2 will not endanger the public health and safety. This is because:

- (1) The revised technical specification settlement limits should ensure that appropriate actions will be taken before settlement-induced failures in the service water system occur. See p. 209, *supra*.
- (2) The monitoring program required by the revised technical specifications, together with the applicant's internal procedures regarding surveillance reporting requirements, will enable the applicant and staff to become aware of any settlement-related problem well before the technical specification limits are reached. See pp. 214-218, *supra*.

Based upon the foregoing, we conclude that there is reasonable assurance that the public health and safety will not be endangered by a settlement-induced failure in the service water system of the North Anna facility. In light of the importance which attaches to the continuing monitoring of the settlement of that system, the applicant is to provide written notice to the Director of the Office of Nuclear Reactor Regulation within ten days of the Station Manager's final approval of any changes in its internal procedures (made pursuant to Technical Specification 6.8.2) which relate to the reporting of the results of such monitoring.

On the basis of this opinion, our jurisdiction over the pumphouse settlement issues is hereby *terminated*.⁸⁷ For the reasons set forth at p. 191, *supra*, jurisdiction over the turbine missile issue is *retained* pending further order of the Board.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁸⁷ This termination does not affect the expectation referred to at pp. 219-220, *supra*.

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

**FLORIDA POWER AND
LIGHT COMPANY**

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

February 14, 1980

The Appeal Board dismisses for want of jurisdiction the intervenors' motion for consideration of "Class 9" accidents in this proceeding, filed during a hearing before the Board on another matter. Treating the parties' submissions as a show cause petition and responses, the Appeal Board refers the papers to the Director of Nuclear Reactor Regulation for consideration under 10 CFR 2.206.

RULES OF PRACTICE: AUTHORITY OF APPEAL BOARD

In the absence of a rational and direct link to the limited matters over which it has retained jurisdiction, an appeal board is without authority to consider new or reopened issues at the appellate stage of the proceeding.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

If new evidence arises after an issue has been fully litigated, a person seeking relief on the matter may petition the Director of Nuclear Reactor Regulation pursuant to 10 CFR 2.206 for a hearing on the relief sought.

**Messrs. Harold F. Rels, Washington, D. C., and
Norman A. Coll, Miami, Florida, for the applicant.**
**Messrs. Terrence J. Anderson and Martin Harold
Hodder, Miami, Florida, for the intervenors.**
**Mr. William D. Paton for the Nuclear Regulatory
Commission staff.**

MEMORANDUM AND ORDER

On December 12, 1979, the intervenors once again moved for consideration of "Class 9" accidents¹ in this proceeding. Their request was premised on the Commission's recent decision in *Offshore Power*,² which they construe as modifying a previous generic prohibition against considering the consequences of Class 9 events in individual licensing proceedings. The motion must fail.

1. The Licensing Board authorized issuance of a permit to construct St. Lucie Unit 2 in 1977, an action that we approved later that year.³ The Commission's election not to review our decision made it the agency's final action⁴ and it has now been upheld on judicial review.⁵

There remain pending in this case, however, two limited matters for our resolution. These are (1) the environmental consequences of radon emissions during the mining and milling of uranium to fuel the plant and (2) the stability of the Applicant's electrical grid. The Commission instructed us to hear the former;⁶ we expressly retained jurisdiction to consider the latter when we otherwise affirmed the decision below.⁷ Intervenors filed the motion now before us in open hearing while we were taking evidence on the second question.

The Applicant and the Staff remind us of intervenors' previous unsuccessful attempt to inject the "Class 9" issue into this case and point out that rejection of this contention was expressly upheld on judicial review.⁸ Those

¹ "The Term 'Class 9 accidents' stems from a 1971 AEC proposal to place nuclear power plant accidents in nine categories to take account of such accidents in preparing environmental impact statements. That proposal was put forward for comment in a proposed 'Annex' to the Commission's regulations implementing NEPA. 36 Fed. Reg. 22851-52 (December 1, 1971). The nine categories in that 'Annex' were listed in increasing order of severity. 'Class 9' accidents involve sequences of postulated successive failure more severe than those postulated for the design basis of protective systems and engineered safety features. The Annex concluded that, although the consequences of Class 9 accidents might be severe, the likelihood of such an accident was so small that nuclear power plants need not be designed to mitigate their consequences, and, as a result, discussion of such accidents in applicants' Environmental Reports or in staff's environmental impact statements was not required." *Offshore Power Systems* (Floating Nuclear Plants), CLI-79-9, 10 NRC 257-258 (September 14, 1979) (footnote omitted).

² *Id.*

³ LBP-77-27, 5 NRC 1038, *affirmed*, ALAB-435, 6 NRC 541; but see text accompanying fn. 7, *infra*.

⁴ See 10 CFR 2.785(c).

⁵ *Hodder v. NRC*, 589 F.2d 1115 (D.C. Cir. 1978) (decision without opinion), *certiorari denied*, ___ U.S. ___, 62 L.Ed.2d 36 (1979).

⁶ 43 Fed. Reg. 15613, 15616 (April 14, 1978).

⁷ Order of October 28, 1977, modifying ALAB-435.

⁸ The court of appeals' memorandum order to that effect is unpublished. It is, however, reproduced in the appendix to applicant's brief.

parties add that we have no authority to admit the contention in any event. Pending completion of a rulemaking proceeding contemplating the establishment of a new general policy on this subject, the Commission has reserved to itself the right to decide whether Class 9 accidents may be considered in proceedings involving land-based plants.⁹

Intervenors concede that only the Commission can say whether Class 9 questions are to be taken up. They nevertheless assert that we retain sufficient "jurisdiction" to trigger that determination either by (1) instructing the staff to advise the Commission whether the issue should be considered¹⁰ or (2) "certifying" that question directly to the Commission.¹¹ They ask that we adopt one course or the other and stay completion of these proceedings until the Commission acts.¹²

2. Our action on the intervenors' motion is controlled by *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-513, 8 NRC 694 (1978). In that case as in this one, a licensing board authorized a construction permit after deciding a contention adversely to an intervenor. There as here, we approved the trial board's ruling and a court of appeals ultimately upheld the Commission's affirmance of our decision.¹³ The *Seabrook* intervenors later sought on grounds of supervening developments to resurrect the issue previously interred by the Board. As do intervenors in this case, they argued that we were free to act because the existence of discrete if unrelated issues still open before us meant that the proceeding was not final. We squarely rejected that argument. We held in *Seabrook* that after we had relinquished jurisdiction over a cause except for limited purposes, where the

⁹ *Offshore Power*, *supra* fn. 1, 10 NRC at 781, *accord*, *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 790-792 (December 7, 1979).

¹⁰ A procedure we adopted in *Black Fox*, ALAB-573 (*supra* fn. 9), 10 NRC at 792.

¹¹ See 10 CFR 2.785(d).

¹² The relief sought by intervenors' amended prayer is an order from us:

"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 questions 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.

¹³ LBP-76-26, 3 NRC 857 (1976), *affirmed*, ALAB-422, 6 NRC 33 (1977), *affirmed*, CLI-78-1, 7 NRC 1, *affirmed sub nom. New England Coalition v. NRC*, 582 F.2d 87 (1st Cir. 1978).

appellate process was otherwise completed we could not admit new contentions unrelated to those purposes. There must be an end to litigation sometime.

Save for the added factor that these intervenors have had a petition for certiorari denied as well, the case at bar is on all fours with *Seabrook*.¹⁴ It therefore heralds the result we must reach. In the absence of a rational and direct link to the limited matters over which we retain jurisdiction, we are without authority to consider new or reopened issues at this stage of the proceeding. *Accord, Virginia Electric and Power Company* (North Anna Station, Units 1 and 2), ALAB-551, 9 NRC 704, 708-09 (1979). We perceive no such relationship between the pending radon and grid stability issues and the environmental consequences of Class 9 accidents. We therefore may not accede to intervenors' request to take up that issue now.

This does not leave intervenors remediless. The Staff acknowledges in its brief (p. 8) that a Commission regulation, 10 CFR 2.206, "permits a petition to be filed with the Director of Nuclear Reactor Regulation who has discretionary authority to grant the relief sought subject to Commission review," *See, e.g., Public Service Company of Indiana* (Marble Hill Station, Units 1 and 2), DD-79-10, 10 NRC 129, 134 (1979). We must leave intervenors to pursue that path.

*Motion dismissed for want of jurisdiction; treating the submissions as a show cause petition and responses, the papers are referred to the Director of Nuclear Reactor Regulation for this consideration under 10 CFR 2.206.*¹⁵

It is so ORDERED.¹⁶

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹⁴ And is distinguishable from *Black Fox* (on which intervenors rely), where the Licensing Board proceeding was only half completed. ALAB-573, *supra* fn. 9, 10 NRC 775.

¹⁵ The Director would make the recommendation to the Commission on whether to hear Class 9 events even were we to direct "the staff" to do so. We have no reason to believe that he will act either arbitrarily or tardily; we intimate no views on the appropriate course for him to take.

¹⁶ The outcome of this matter to one side, we wish to acknowledge the receipt of particularly helpful and well-reasoned briefs from all parties.

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 Nos. 50-275 OL

**PACIFIC GAS AND
ELECTRIC COMPANY**

50-323 OL

**(Diablo Canyon Nuclear
Power Plant,
Units 1 and 2)**

February 15, 1980

On intervenor's appeal from the Licensing Board's ruling that the Diablo Canyon facility's security plan complied with all applicable NRC regulations, (LBP-79-26, 10 NRC 453, September 27, 1979), the Appeal Board vacates the Licensing Board's finding as unsupported by the record, orders the issue reconsidered *de novo* at an evidentiary hearing on the matter before itself; and allows intervenor to participate as a party.

RULES OF PRACTICE: FINDINGS OF FACT

A finding without evidence is arbitrary and baseless.

Mr. Bruce Norton, Phoenix, Arizona, argued the cause and, with **Messrs. Malcom H. Furbush** and **Phillip A. Crane, Jr.**, San Francisco, California, and **Arthur C. Gehr**, Phoenix, Arizona, filed a brief for applicant Pacific Gas and Electric Company, appellee.

Messrs. Paul C. Valentine, Palo Alto, California, **W. Andrew Baldwin** and **Yale I. Jones**, San Francisco, California, argued the cause and filed a brief for intervenor San Luis Obispo Mothers for Peace, appellant.

Mr. James R. Tourtellotte argued the cause and **Mr. Marc R. Staenberg** filed a brief for the Nuclear Regulatory Commission staff.

DECISION

1. Among the contentions that intervenor San Luis Obispo Mothers for Peace has been pressing in this operating license proceeding are challenges to the adequacy of the Pacific Gas and Electric Company (PG&E) physical security plan for protecting the Diablo Canyon nuclear power facility from industrial sabotage.¹ A combination of circumstances (including the accidental death of intervenor's proffered expert witness) led to several Licensing Board rulings culminating in the Board's holding that intervenor had "voluntarily defaulted" on this issue. The Board therefore precluded intervenor from going to hearing on its security plan contentions.²

Nevertheless, at the urging of both the Applicant and the Staff the Board below inspected the security features of the nuclear plant and took evidence *in camera* about their adequacy—albeit in the absence of the intervenor. On the basis of that inspection and on the evidence presented to it at the closed hearing, the Licensing Board made an unequivocal finding "that the PG&E security plan complies with all applicable NRC regulations."³

On this appeal from that ruling, intervenor generally asserts that the Licensing Board erred by (1) finding intervenor's expert witness unqualified to examine the Diablo Canyon security plan and to testify about its adequacy; (2) holding intervenor had withdrawn from the proceeding by "voluntary default"; (3) inspecting the Diablo Canyon facility's security features in the company of the applicant and the staff's representatives but not intervenor's; and (4) barring intervenor's substitute counsel from the *in camera* evidentiary hearing on the adequacy of the security plan.

We need not, however, resolve any of these questions because of a circumstance no party foresaw. While considering this appeal, we were unable to determine precisely what documents or other material the Licensing Board relied upon when making its security plan finding. Accordingly, on February 6, 1980, we requested that Board to identify all such materials. The Board responded on February 11th with a memorandum stating that "[t]he transcript of the *in camera* hearing, which contains the prepared testimony of

¹ The requirements for physical security plans for nuclear power plants are detailed in 10 CFR 73.55 (1979 Rev.).

² LBP-79-26, 10 NRC 453, 507 (September 27, 1979).

³ *Id.* at 507.

The Licensing Board's decision also considered whether the facility is adequately designed to withstand earthquakes. As explained in the Appeal Panel Chairman's January 4, 1980, memorandum (unpublished), intervenor was represented on the security plan and earthquake issues by different counsel with offices in different cities. The matters were tried separately and respective counsel filed exceptions and briefs independently. For convenience (and in the absence of any objection) we have treated the matters as two separate appeals; earthquake contentions are to be taken up by another appeal board with two technical members.

the witnesses, is the only 'document' considered by the Board. The Board also visually inspected various features of the security system during the site visit." What is not manifest from the Licensing Board's response is, first, that neither the *in camera* hearing transcript nor any other part of the record contains the Diablo Canyon physical security plan and, second, that the Board never looked at it.⁴ For the reasons which follow, we believe that in these circumstances the Board's finding of regulatory compliance cannot stand.

2. The evidence adduced at the closed hearing was quite limited. The applicant offered two witnesses whose testimony amounted to no more than the expression of their "opinion" that the security plan met the Commission's requirements. The basis for this conclusion was not questioned by the Board. Staff witnesses also testified, mainly to explain the staff's methodology for evaluating the Diablo Canyon security plan and to list briefly the plan's salient features. Lastly, the staff's Security Plan Evaluation Report, which was only slightly more expansive than the staff testimony, was placed into the record as if read.

Reliance on such secondary sources is no substitute for examining the plan's actual provisions. Our own review of that document confirms this.⁵ There are instances where the plan's conformity with applicable Commission regulations is not self-evident—and some where it is even doubtful—even when considered in the light of the evidence adduced at the closed hearing.⁶ It may well be that these apparent discrepancies can easily be explained on pertinent inquiry, but that was the purpose of the *in camera* hearing session. We do not believe it possible for the Board to have found that the security plan conforms fully to all regulatory requirements without having at least read that plan. The Board's security finding is, therefore, legally impermissible.

To be sure, were the Licensing Board correct that intervenor had defaulted—a question we do not decide—there arguably may have been no need for the Board to pass on the security plan contentions. A hearing is not mandatory in an operating license proceeding and a board need decide only contested issues.⁷ But a board is not barred from looking into other concerns

⁴ By way of further check, the Chairman and one member of this Board independently inquired of Counsel to the Licensing Board Panel specifically whether the Board had looked at the Diablo Canyon security plan itself. Counsel responded that he had checked with the Board members and confirmed that the Board had not done so.

⁵ Upon examining the *in camera* record, we noted the absence of the security plan and proceeded to obtain a copy from its staff custodian on the mistaken assumption that the Licensing Board had returned it to him for safekeeping. As mentioned, the Licensing Board never had the plan at all.

⁶ The regulatory requirements of section 73.55 coupled with the complexities of the plan are such that a brief hearing even when supplemented by an hour's walking tour of the plant, are insufficient to dispense with actual examination of the plan.

⁷ *Cincinnati Gas and Electric Company* (Zimmer Station), ALAB-305, 3 NRC 8, 9 (1976);

(Continued on next page)

where it finds a serious safety issue that merits further exploration.⁸ The adequacy of a security plan can certainly be such a matter.⁹ Moreover, not only the intervenor but the applicant and the staff both urged that the Board review the Diablo Canyon security plan.¹⁰ Having undertaken to perform that task—and here we think it had little choice but to do so—the Board was bound to inquire diligently into the sufficiency of the plan’s provisions. We do not understand the staff or the applicant, in asking for that review, to have been suggesting anything else.¹¹ No conceivable good is served by making empty findings in the absence of essential evidence. Thus the unequivocal finding that the security plan “complies with all applicable NRC regulations”—where the Licensing Board never saw the plan—is so much waste ink. Of course circumstances may arise where a Board might determine that a thorough inquiry was not necessary. But in that case its minimum obligation would be to acknowledge the fact and to explain it. Here the Licensing Board did neither.

Moreover, it is a statutory requirement that the adjudicatory decisions of this Commission stand or fall on the basis of the record on which they rest.¹² The Administrative Procedure Act (to which NRC proceedings are specifically subject¹³) mandates in pertinent part that “[t]he transcript of testimony and exhibits, together with all papers and requests filed in the proceeding, constitutes the exclusive record for decision . . .” 5 U.S.C. 556(e). Given the duty to decide in accordance with the facts provided, “[a] finding without evidence is arbitrary and baseless,” *ICC v. Louisville & N. R. Co.*, 227 U.S. 88,

(Continued from previous page)

Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 226 fn. 10 (1974).

⁸ *Consolidated Edison Company of N. Y.* (Indian Point Unit 3), CLI-74-28, 8 AEC 7 (1974); 10 CFR 2.760a and 2.104(c).

⁹ *Pacific Gas and Electric Co.* (Diablo Canyon Plant, Units 1 and 2), CLI-77-23, 6 NRC 455, 456 (1977).

¹⁰ 10 NRC at 507.

¹¹ Surprisingly, neither party offered the security plan into evidence or asked that official notice be taken of it. “The staff has the obligation to lay all relevant materials before the Board to enable it adequately to dispose of the issues before it.” *Consolidated Edison Company of N. Y.* (Indian Point Station, Units 1, 2, and 3), CLI-77-02, 5 NRC 13, 15 (1977). But given the Board’s determination to evaluate the security plan, the staff’s failure to ask formally that it be noticed does not excuse the Board’s failure to look at it or, alternatively, to state why it did not find it necessary to review the actual plan.

¹² A licensing proceeding is an adjudication within the meaning of the APA. *Porter County Chapter v. AEC*, 533 F.2d 1011, 1019 (7th Cir.), *certiorari denied*, 429 U.S. 945 (1976); *Citizens for a Safe Environment v. AEC*, 489 F.2d 1018, 1021 (3rd Cir. 1974); *Siegel v. AEC*, 400 F.2d 778, 785 (D.C. Cir. 1968).

¹³ 42 U.S.C. 2239(b); see also 5 U.S.C. 559

91 (1913)—a principle that has constitutional underpinnings.¹⁴ Accordingly, the Board's security plan finding must be set aside.

3. Our own concerns about the Diablo Canyon security plan are sufficiently numerous that the question of its adequacy merits consideration *de novo*. In the circumstances presented and in the interests of reasonable expedition, we deem it the wiser course to conduct that hearing ourselves. We are bolstered in this view by matters stressed at oral argument—particularly the application of the general propositions laid down earlier in this proceeding in ALAB-410, 5 NRC 1398 (1977), to the concrete circumstances of the case. ALAB-410 was in many ways a matter of first impression. The diverse readings it has received from the parties before us suggest that it may be in need of refinement—a task more suitable to ourselves as its author than to the Board below as its interpreter.

Because we intend to explore fully the adequacy of the security plan in any event, we see little to be gained by resolving the series of questions raised by intervenor's appeal.¹⁵ The situation in which they arose is truly unique. We think it unlikely that a board will be faced soon again with the farrago of inconsistent positions, substitute counsel, and a dying witness that recurred here. We believe that we may be aided in developing the record if the intervenor is allowed to participate as a party in the forthcoming hearings; in the exercise of our discretion we will let it do so. The terms of its participation will, of course, be governed by ALAB-410.

In light of the manifest need to avoid unnecessary disclosure of the security plan, we shall decide precisely how we shall proceed after a closed prehearing conference where we will consider the parties' suggestions. An order calling for such suggestions and calendaring such a conference will follow shortly. It is appropriate now, however, to apprise all parties that we are determined to move ahead swiftly; that requests for extensions of time or postponements will be looked upon with disfavor; and that any party intending to present witnesses should arrange for their services immediately.

Part IV of the partial initial decision of September 27, 1979 is *vacated*.

It is so ORDERED.

¹⁴ As the Court explained (227 U.S. at 91): "if the government's contention is correct, it would mean that the Commission had a power possessed by no other officer, administrative body, or tribunal under our government. It would mean that, where rights depended upon facts, the Commission could disregard all rules of evidence, and capriciously make findings by administrative fiat. Such authority, however beneficently exercised in one case, could be injuriously exerted in another, is inconsistent with rational justice, and comes under the Constitution's condemnation of all arbitrary exercise of power."

¹⁵ Even were intervenor to prevail, it would be entitled to no more relief than we now accord.

FOR THE APPEAL BOARD

**C. Jean Bishop
Secretary to the Appeal Board**

Additional comment of Dr. Johnson:

My view of intervenor participation in security plan hearings has not changed from that expressed in conjunction with Dr. Quarles in our concurrence in ALAB-410. We said there that "had the regulations and precedents favoring it [intervenor participation] not been so clearly drawn, we would have found that nuclear power plant site security plans should not be disclosed in the hearing process." 5 NRC at 1407.

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 Nos. 50-400

**CAROLINA POWER AND
LIGHT COMPANY**

50-401

50-402

50-403

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

February 20, 1980

The Appeal Board denies the applicant's motion to modify the instructions given to the staff in ALAB-577, 11 NRC 18, to take certain action when the facility comes under consideration for an operating license.

**Messrs. George F. Trowbridge and John H. O'Neill,
Jr., Washington, D. C., for the applicant, Carolina Power
and Light Company.**

MEMORANDUM AND ORDER

In ALAB-577, 11 NRC 18 (January 29, 1980), ruling upon the appeal of the NRC staff, we struck down a condition which had been imposed by the Licensing Board upon the construction permits for the Shearon Harris facility.¹ In its stead, we instructed the staff to take certain action. The applicant, which was not a party to the appeal,² now moves us to amend our instructions. We deny the motion.

A. In order to put the applicant's motion in proper perspective, we start with a summary of the action taken by us in ALAB-577. The Licensing Board condition there in issue would have required the staff, upon the filing of an application for operating licenses for the facility, to trigger an evidentiary

¹ LBP-79-19, 10 NRC 37, 98 (1979).

² See p. 235, *infra*.

hearing for the purpose of exploring further the applicant's capability to manage plant operation. See 11 NRC 23. Agreeing with the staff, we determined that the Board below had exceeded its jurisdiction. *Id.* at 30.

More particularly, upon analysis of the licensing scheme established by the Atomic Energy Act and implemented in the Commission's Rules of Practice, we concluded that construction permit licensing boards have not been clothed with explicit or implicit authority to order a hearing at the operating license stage. Rather, an operating license hearing can be initiated in only two ways—neither of which involves the construction permit board. First, the Commission itself may make a specific finding, pursuant to Section 2.104(a) of the Rules of Practice, 10 CFR 2.104(a), that a hearing “is required in the public interest.” (In that regard, we found the contemplation of Section 2.104(a) to be that such a finding will be made only after the operating license application has been filed and will be based upon the content of that application together with any other current available information.) Second, any interested person may seek a hearing by filing an intervention petition in response to the mandatory notice of opportunity for hearing which is published after the operating license application has been docketed; if the petition is granted, a licensing board will be convened to hear those matters which the petitioner has put into controversy. 11 NRC at 25-30.

Although, for these reasons, we were constrained to remove the condition from the construction permits, we could not allow the matter to rest at that. The concerns that had led the Licensing Board to impose the condition remained undisturbed, notwithstanding that its chosen remedy had been held invalid. On the basis of the evidentiary record before it, that Board had found—and justifiably so—that the management of the applicant's now-operating plants over a period of several years had left much to be desired. To be sure, the applicant had insisted that it had taken effective action to cure the deficiencies and the staff had expressed the belief that there had been considerable improvement in the applicant's operations. Nonetheless, the Board was unprepared—also with good reason—to say that all doubt had been removed regarding the applicant's capability to manage the Shearon Harris facility properly once it were brought on line.

Confronted with these circumstances, we set about the task of fashioning an alternate remedy. We desired that remedy first to insure that the spotlight would be focused on the management capability question when the facility came under consideration for an operating license. More importantly, the remedy had to give effect to our ruling that it is for the Commission itself—and not an adjudicatory board—to decide whether, in “the public interest,” a hearing should be held on that question even if one were not requested by an interested person.

As it turned out, our task proved to be a simple one. We devised a substitute for the Licensing Board's condition which, at one and the same

time, (1) not merely acknowledged, but facilitated the exercise of, the Commission's singular authority to order an operating license hearing in the public interest; and (2) imposed no new substantive obligation upon the staff (or indeed anyone else). Specifically, we directed the staff

to insure that no notice of opportunity for hearing under 10 CFR 2.105 is issued in connection with any application which may be filed for operating licenses for the Shearon Harris facility *unless and until*:

(1) The staff has conducted, on the basis of the content of the operating license application and supporting documentation (together with any other pertinent information then at its disposal), a preliminary evaluation of the applicant's capability to manage the operation of the facility in conformity with all regulatory requirements which have or may be imposed in the interest of the protection of the public health and safety; and

(2) The findings and conclusions reached upon that evaluation have been (a) made publicly available in written form; and (b) brought specifically to the attention of the Commission with an accompanying reference to both the Licensing Board's supplemental initial decision and our decision today. It is further directed that, pursuant to 10 CFR 2.105(b)(2), the notice of opportunity for hearing (if one is issued) set forth the manner in which a copy of that analysis may be obtained or examined.

11 NRC at 36.

We need not rehearse in detail here the reasons why this direction meets our several objectives; those reasons are amply developed in ALAB-577. See 11 NRC at 31-35. For present purposes, it is enough to stress anew that, if the staff conducts its preliminary evaluation of the applicant's managerial capability at the very inception of the operating license review process (rather than much later as would otherwise be the case), the Commission will be able to resort to the product of that evaluation in deciding whether to order a hearing on its own initiative. And that the Commission may find the staff's analysis to be helpful scarcely requires elaboration. Indeed, it is difficult to see how the Commission might reach an informed conclusion respecting the public interest necessity for a hearing on the management capability issue without having the benefit of the staff's expert judgment.

B. We are told by the applicant that, notwithstanding its agreement "in principle" with the staff's challenge to the Licensing Board's condition, it elected not to contest the condition itself because it anticipated that a hearing at the operating license stage would be held in any event. Motion, p. 2, fn. 4. But, although not questioning our authority to issue the substitute directive, the applicant nonetheless finds it to be troublesome. Specifically, it objects to the issuance of the notice of opportunity for hearing on the operating license application being deferred until after the staff's preliminary evaluation on the

management capability matter has been completed. Because, in its view, "this requirement may unnecessarily delay other unrelated activities necessary to obtaining" an operating license, the applicant proposes that we modify our instructions to the staff:

such that the notice of opportunity for hearing would be published as soon as practicable after the OL application is docketed as required by 2.105(a)(4). However, to accomplish the Appeal Board's objective, the notice of opportunity for hearing would state additionally (1) that the Staff had been instructed to perform an evaluation of Applicant's management capability; (2) that a notice will be published in the *Federal Register* upon completion of the Staff's evaluation; (3) that the notice will set forth the manner in which a copy of the Staff's evaluation may be obtained or examined; (4) that the public will then have an additional thirty days in which to petition to intervene and request a hearing in the Harris OL proceeding on the sole issue of Applicant's management capability and technical qualifications; and (5) that any petitioner already admitted as a party to the Harris OL proceeding, and who has not already established a contention on management capability, will then have thirty days in which to petition to expand his contentions to include a contention on Applicant's management capability or technical qualifications.

Motion, pp. 3-4 (footnote omitted).

As the applicant sees it, this modification "will minimize the risk of delay in obtaining an "operating license without interfering with the objectives we sought to achieve in ALAB-577. In this connection, it emphasizes that the proviso would still enable the Commission and interested members of the public to abide the event of the publication of the staff's findings and conclusions before deciding whether to order or petition for a hearing on the management capability issue. Motion, p. 6.³

1. Our initial difficulty with the proposed modification relates to the premise underlying the assertion that it is needed. It may well be, as the applicant insists, that there are good reasons why any adjudicatory proceeding on its operating license application for the Shearon Harris facility should be concluded before June 1983—when Unit 1 is now scheduled for initial core fuel loading. Motion, pp. 4-5. What is less clear, however, is that our direction to the staff might interfere with the achievement of that goal.

According to the applicant, it recently informed the staff that it intends to file the operating license application, including the Final Safety Analysis

³ In ALAB-577, we noted the desirability of having the fruits of the staff's early preliminary evaluation available not merely to the Commission but, as well, to the public for its use in determining whether to seek a hearing (should the Commission not order one). See 11 NRC at 33, 34.

Report, in June of this year.⁴ If it does so, the staff justifiably could be expected, in the exercise of appropriate diligence, to comply with our present instructions in time to enable its issuance of the notice of opportunity for hearing by early Fall at the latest.

In this connection, as we expressly stated in ALAB-577, what is being required of the staff prior to issuance of that notice is but a *preliminary* evaluation based upon (1) the content of the operating license application and supporting documentation; and (2) any other pertinent information then at its disposal. See p. 235, *supra*. If the applicant properly discharges its own responsibilities in the matter,⁵ the application and supporting documentation should provide the staff with all the information needed to make rapidly a tentative assessment of the sufficiency of what the applicant has done (and plans to do) to insure the requisite managerial and administrative controls to assure safe Shearon Harris operation. See 11 NRC at 34.⁶ Moreover, as also alluded to in ALAB-577, the staff will have immediately at hand the reports of the resident NRC inspectors assigned to the applicant's Brunswick facility. *Ibid*. These reports undoubtedly will allow an equally expeditious appraisal of the extent to which the applicant has overcome the management problems at that facility which gave rise to the Licensing Board's (and our) concerns. In short, they will give the staff an insight into whether the applicant's management expectations for Shearon Harris are matched by its recent performance at Brunswick.

2. The foregoing considerations to one side, the applicant's proposed modification suffers from at least one serious infirmity—an infirmity which, ironically, might bring about the very delay which the applicant wishes to avoid. If required to evaluate the applicant's management capability as a condition precedent to its issuance of the notice of opportunity for hearing, the staff will have a strong incentive to embark upon that task expeditiously. No equivalent incentive would exist, however, were the staff now to be given the green light to issue the notice promptly upon the docketing of the operating license application. True enough, the staff might nonetheless turn to the management capability matter with alacrity. But, then again, it might choose instead to assign it a relatively low priority. If the latter proved to be

⁴ This representation is confirmed in the January 16, 1980 memorandum of NRC staff member Olan D. Parr, summarizing the discussion at a meeting between the staff and the applicant held on January 10, 1980 on the subject of the tendering of the application. A copy of that memorandum was appended to the applicant's motion.

⁵ If it does not, it will have little cause for complaint about potential delay.

⁶ Even were there no requirement of an early preliminary staff evaluation, the applicant nonetheless would be well-advised to take considerable pains to establish that, the prior operating history at its other plants notwithstanding, the Shearon Harris facility will be satisfactorily managed.

the case, the consequence could be that the opportunity provided by the applicant's proposal for the filing of new intervention petitions or expanded contentions (addressed to the management capability issue) would not arise until an adjudicatory proceeding convened to hear other issues was well underway.

The mere possibility of a lengthy deferral of staff—and thus Commission and public—consideration of the management capability issue is cause enough not to adopt the applicant's proposal. As earlier noted (p. 234, *supra*), we think that, given the applicant's prior operating history, it is essential that particular attention be accorded that issue in connection with the licensing of Shearon Harris operation. This is best accomplished by having it singled out for early staff examination—followed by a prompt report to the Commission and the public alike. If these measures are undertaken prior to—rather than conceivably long after—any adjudicatory proceeding is initiated, the danger that the issue might become sidetracked along the way is substantially diminished.

The applicant's motion for modification of ALAB-577 is *denied*.

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
Michael C. Farrar**

In the Matter of

Docket No. 50-466

**HOUSTON LIGHTING AND
POWER COMPANY**

**(Allens Creek Nuclear
Generating Station,
Unit 1)**

February 22, 1980

The Appeal Board affirms the Licensing Board's denial of an untimely petition for leave to intervene in this construction permit proceeding.

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS

Untimely intervention petitions must be evaluated by a balancing of the five factors specified in 10 CFR 2.714(a)(1).

RULES OF PRACTICE: UNTIMELY INTERVENTION PETITIONS

Newly acquired standing is not sufficient of itself to justify permitting belated intervention. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1-4), ALAB-526, 9 NRC 122, 124 (1979).

RULES OF PRACTICE: APPELLATE REVIEW

By taking an appeal from a licensing board's denial of an intervention petition, a petitioner does not acquire the right to supplement the factual content of the petition ruled on by the licensing board. New assertions of fact which could have been, but were not, either included in the petition or otherwise presented to the board below, are not entitled to consideration by the reviewing board in deciding the appeal.

RULES OF PRACTICE: STANDING TO INTERVENE

An interest which is purely economic in character does not confer standing to intervene under the Atomic Energy Act; nor is threatened economic harm sufficient to invoke the National Environmental Policy Act unless that harm "will or may be occasioned by the impact that the Federal action under consideration would or might have upon the environment." *Tennessee Valley Authority* (Watts Bar Nuclear Plant, Units 1 and 2), ALAB-413, 5 NRC 1418, 1420-21 (1977).

RULES OF PRACTICE: STANDING TO INTERVENE

Status as a ratepayer does not confer standing to intervene in Commission licensing proceedings. *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 614 (1976).

Messrs. Jack R. Newman, Robert H. Culp and David B. Raskin, Washington, D.C., and **Messrs. J. Gregory Copeland, C. Thomas Biddle, Jr., and Charles G. Thrash, Jr.**, Houston, Texas, for the applicant, Houston Lighting and Power Company.

Mr. Robert Alexander, Houston, Texas, appellant *pro se*.

Mr. Stephen M. Sohinki for the Nuclear Regulatory Commission staff.

DECISION

1. We are here confronted with another appeal taken under 10 CFR 2.714a from the denial of a petition for leave to intervene in this construction permit proceeding involving the Allens Creek facility. See ALAB-574, 11 NRC 7, (January 10, 1980). The appellant now before us is Robert Alexander. His intervention petition, in the form of a one-page letter, was filed on October 18, 1979. Whether the applicable filing deadline is deemed to have been October 11, 1978 or, instead, July 18, 1979,¹ the petition was untimely.

¹ The October 1978 deadline was established in an amended "Notice of Intervention Procedures," published on September 11, 1978. See 43 *Fed. Reg.* 40328. On June 18, 1979, the Licensing Board published a supplementary notice addressed to persons who had failed earlier to seek intervention because of certain restrictions in the 1978 notice. Any such person was given until July 18, 1979 to file a petition. See 44 *Fed. Reg.* 35062, discussed in ALAB-574, *supra*, 11 NRC at 7. As will be seen, Mr. Alexander's inaction prior to October 1979 was *not* due to the restrictions in the 1978 notice. Thus, he likely is not entitled to the benefit of the provisions of the supplementary June 1979 notice.

Mr. Alexander explicitly conceded as much. In summary fashion, however, his petition addressed each of the five specific factors which, by virtue of 10 CFR 2.714(a), are to be considered by a licensing board in deciding whether to accept a late petition.² More particularly, he asserted that:

- (1) My participation alone will safeguard my interests. I do not trust my interests with other parties.
- (2) I am a law-abiding teacher with the Houston Independent School District. I am expert at expressing myself on paper and orally. My participation will further enhance these proceedings due to my familiarity with the Davis-Bessie [sic] nuclear plant in Northwest Ohio. (Only as late as September have I taken up residence in Houston.)
- (3) I feel that without my participation, some (or not all) of my interests will be fully and accurately [sic] represented by the existing parties. I have a responsibility to my wife and future children to provide a safe environment for them.
- (4) I assure you that my participation will not broaden the basic issue. I will ask for no delays in the proceedings.

In an order entered on November 20, 1979, the Licensing Board held that these averments were not enough to warrant acceptance of the late petition. With respect to Mr. Alexander's representation that he had just become a resident of Houston, the Board pointed to our ruling a year ago that "newly acquired standing [is not] sufficient of itself to justify permitting belated intervention." *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1-4), ALAB-526, 9 NRC 122, 124 (1979). For this reason, the Board viewed the question to be "whether the four other factors set forth in Section 2.714(a) weigh sufficiently in petitioner's favor to overcome the absence of a satisfactory excuse for the lateness." Order, p. 2. But it found itself "unable to assess these other factors because the petitioner has not particularized his interests in this proceeding." *Ibid*. Beyond that, it regarded Mr. Alexander's assertion that he is an articulate teacher possessing familiarity with the Davis-Besse plant as, at least absent further detail, constituting an inadequate demonstration that he is equipped to make a

² Those 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.

valuable contribution to the development of a sound record on either safety or environmental issues. *Ibid.*

2. Before us, Mr. Alexander does not purport to contest the Licensing Board's conclusion that the papers filed with it were inadequate. Rather, in the seeming belief that, by taking an appeal, he now enjoys the right to cure the "deficiencies of his initial filing and further clarify his need to intervene in these proceedings," Mr. Alexander has undertaken to supplement the factual content of his intervention petition. That belief is, of course, entirely mistaken. The Licensing Board's ruling on his intervention petition was necessarily based on the record before it. Consequently, we would scarcely be justified in overturning the ruling on the strength of new assertions of fact which could have been, but were not, either included in the petition or otherwise presented to the Board below.³

That consideration to one side, however, it is evident that the new assertions do not assist Mr. Alexander's cause. This is so whether our focus is upon what was said in his December 14, 1979 brief⁴ or, rather, upon the quite different representations found in a reply brief filed (with our leave⁵) on February 10, 1980.

a. In his December brief, Mr. Alexander told us that he resides approximately 26 miles from the Allens Creek site and that his "main interest in these proceedings is manifested by his plans for future investment of nearly \$120,000 in [Houston] real estate by 1983"—an investment which, he claims, might be diminished in value over the course of time because of the nearby presence of a nuclear plant. But the mere possibility that he may at some future date acquire real estate in the Houston area provides too conjectural a reed upon which to base a tardy intervention endeavor.⁶ Moreover, it is now settled that an interest which is purely economic in character does not confer standing to intervene under the Atomic Energy Act; nor is threatened economic harm sufficient to invoke the National Environmental Policy Act unless (as is not alleged here) that harm "will or may be occasioned by the impact that the Federal action under consideration would or might have upon the environment." *Tennessee Valley Authority (Watts Bar Nuclear Plant, Units 1 and 2)*, ALAB-413, 5 NRC 1418, 1420-21 (1977).

The situation is not altered by Mr. Alexander's further averment in his

³ See, in this connection, ALAB-574, *supra*, 11 NRC at 11, fn. 9.

⁴ The representations in that brief were repeated verbatim in a supplemental brief filed on January 3, 1980.

⁵ But see fn. 9, *infra*.

⁶ In this connection, it would appear that Mr. Alexander can adequately protect himself from economic injury by either (1) not purchasing property in the vicinity of the facility or (2) negotiating with prospective sellers on the basis of his hypothesis regarding the effect that the facility will have on property values. In short, he is not in the same position as one whose property was acquired before the proposal to build the Allens Creek facility first surfaced.

brief that “[h]e dealt intimately with the impact the Davis-Besse (Ohio) plant had upon the environment and particularly the economic conditions with regard to real estate values in that area surrounding the plant.” Without far more specification than that, it is not possible to form any judgment upon the warrant for his insistence that “[t]his knowledgeable ability can surely aid these proceedings.” Among other things, there has been no explanation forthcoming as to why any information he may have acquired respecting the economic impact of the Davis-Besse facility upon its surrounding area would be of relevance to the appraisal of another facility to be located in an entirely different section of the United States. In this connection, a number of owners of property in the Houston area have already been admitted to the proceeding as intervenors.⁷ Mr. Alexander assigns no good reason for assuming that those individuals are less well-informed than is he regarding the socio-economic effects that the plant might have upon that area. We are left equally in the dark as to why those intervenors cannot adequately represent any cognizable interest which he may have in the preservation of local property values. (Mr. Alexander is, of course, free to offer his assistance to them.)⁸

b. For its part, Mr. Alexander’s recently-filed “reply” brief⁹ is devoid of any reference to his investment plans or to anything else which was stated in his earlier brief by way of a particularization of his claimed interest in the proceeding. Rather, in a sharp change of direction, the petitioner now identifies his principal interest as being the protection of the physical and mental “well-being of himself and his family.” He opines that, if the Allens

⁷ We understand that the intervention petitions of some 20 organizations and individuals have been granted and that still others await Licensing Board action. It is reasonable to suppose that a large majority of these petitioners have already or will eventually put forth at least one acceptable contention in the supplement to their petition required by 10 CFR 2.714(b). Accordingly, there are likely to be many more intervenor participants here than there have been in most other proceedings.

⁸ We have not overlooked Mr. Alexander’s additional new allegations in the December brief that the facility “will irreparably violate the natural aesthetics of the area” and give rise to “inordinate and unconstitutional electric rate hikes.” Suffice it to say that no basis is given for the first of these claims, let alone a particularization as to how (living at a distance of 26 miles from the site) he would be adversely affected by the aesthetic impact of the facility. Insofar as the second claim is concerned, the Commission has squarely held that status as a ratepayer does not confer standing to intervene in its licensing proceedings. *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 614 (1976). In any event, the record contains nothing to suggest that Mr. Alexander would be able to contribute significantly to the development of a sound record on either of these matters.

⁹ In actuality, the brief does not consist of a reply to the briefs of the applicant and the staff. Rather, it can be fairly regarded only as a second supplemental brief (see fn. 4, *supra*). On January 8, 1980, we explicitly denied Mr. Alexander’s motion to file such a brief (although in the same order we granted him leave to respond to the briefs of his adversaries). That we have chosen to consider the content of what Mr. Alexander has just put before us should not be taken as tacit approval of his essentially unauthorized filing.

Creek facility is built, he and the other members of his family will live under a "constant shadow of uncertainty" respecting the safety of plant operation. And, he insists, only his "participation in this proceeding can insure that those doubts are thoroughly espoused."

The obvious difficulty with this markedly different approach is that Mr. Alexander has offered nothing beyond his bare assertion which might lead us to believe that he would be able to make a significant contribution to the development of an evidentiary record on one or more safety issues. Nor has he endeavored to explain—as he must do to support his inexcusably late petition—why his concerns regarding safe plant operation differ in any material respect from those of the numerous other residents of the area who have already been admitted to the proceeding as intervenors. Needless to say, there is no reason why it should be presumed that those individuals are any less interested in—and thus are any less inclined to raise—the questions which Mr. Alexander maintains he alone might be expected to pursue.

In sum, even accepting at face value everything that Mr. Alexander has sought to inject into the record for the first time on the appeal, we are constrained to conclude that his demonstration on the five factors listed in Section 2.714(a) falls far short of what would be required to overturn the denial of his untimely petition.¹⁰ Accordingly, the Licensing Board's November 20, 1979 order must be, and hereby is, *affirmed*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹⁰ While it may be that Mr. Alexander's participation would not broaden the issues or occasion delay, that factor is not dispositive. *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 798 (1977). In this instance, it cannot overcome the extreme weakness of the showing made on the other factors.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

John F. Wolf, Chairman
Dr. Linda W. Little
Dr. Forrest J. Remick

In the Matter of

Docket Nos. 50-295
50-304

COMMONWEALTH
EDISON COMPANY

(FOL Nos. DPR-39 & DPR-48)
(Proposed Amendment
to Permit Storage
Pool Modification)

(Zion Station,
Units 1 and 2)

February 14, 1980

The Licensing Board authorizes the issuance of an appropriate operating license amendment with certain conditions, authorizing the replacement of spent fuel storage racks at the facility.

TECHNICAL ISSUES DISCUSSED: Expansion and operation of spent fuel pool; corrosion and materials surveillance program.

Appearances

Michael I. Miller, Esq., Philip Steptoe, Esq., and Alan P. Bielawski, Esq., Chicago, Ill., for the Commonwealth Edison Company, Applicant
Susan N. Sekuler, Esq., and Anne K. Markey, Esq., Assistant Attorneys General, Chicago, Ill., Intervenor
Richard J. Goddard, Esq., and Steven C. Goldberg, Esq., Washington, D.C., for the Nuclear Regulatory Commission Staff.

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INITIAL DECISION

I PRELIMINARY STATEMENT

1. The Commonwealth Edison Company (Applicant) has applied to the Nuclear Regulatory Commission for permission to install new storage racks in the spent fuel pool at the Zion, Illinois, Nuclear Generating Station. The proposed new storage racks in the spent fuel pool would increase the pool's storage capacity from 868 to 2112 fuel assemblies.

2. On April 13, 1978, the Applicant formally requested the issuance of a license amendment. Notice of the proposed amendment was published in the Federal Register on July 18, 1978, 43 *Federal Register* 30938. The State of Illinois (Intervenor) filed a timely petition for leave to intervene in these proceedings and requested a public hearing on the application be held.

3. A Special Prehearing Conference was held on November 20 and 21, 1978, at Waukegan, Illinois for the purposes of ruling on Intervenor's standing to intervene as a party in the proceedings and determining whether certain of Intervenor's contentions met the legal requirements of the Nuclear Regulatory Commission's Rules of Practice. Limited appearance statements were taken at that time.

4. On January 19, 1979, the Board admitted the State of Illinois as an intervening party and ruled upon the admissibility of certain of Intervenor's contentions.¹

¹ Order Following Prehearing Conference dated January 19, 1979.

5. Subsequently, Motions for Summary Disposition were filed by Applicant and the Nuclear Regulatory Commission Staff (Staff). Certain of Intervenor's contentions were summarily dismissed on the grounds that no genuine issues of material fact existed as to those contentions.²

6. An evidentiary hearing was held in Zion, Illinois from June 11 through June 15, 1979 and from June 20 through June 22, 1979, at which time evidence was presented by the parties with respect to the remaining controverted contentions and Board questions. During these hearings all interested members of the public who wished to make limited appearance statements were heard.

7. Shortly after the submission of Proposed Findings of Fact and Conclusions of Law by the parties, the Board was apprised by a Board Notification entitled "Pipe Cracks in Stagnant Borated Water Systems at PWRs" dated August 14, 1979, and IE Bulletin 79-17 that the use of type 304 stainless steel raised possible problems under the conditions found in the Zion spent fuel pool. This information caused the Board to reopen the record on its own volition to receive evidence regarding the safety of the proposed fuel storage racks to be used in the Zion spent fuel pool. Affidavits by experts were submitted by the parties. That evidence was considered in arriving at this Initial Decision.³

II FINDINGS OF FACT

A. Environmental Impact Appraisal

1. Adequacy

Contention 2(a) states:

The State of Illinois contends that approval of the proposed license amendment would be a major action of the Commission significantly affecting the quality of the human environment in Illinois. The National Environmental Policy Act of 1969, as amended, requires the Commission to submit an environmental impact statement with respect to the proposed license amendment.

The Staff performed an environmental evaluation of the proposed modification pursuant to the National Environmental Policy Act of 1969, as amended (NEPA). The Environmental Impact Appraisal (EIA) was issued March 29, 1979.⁴ The EIA describes and evaluates the Zion facility, its need

² Order dated May 1, 1979; Order dated June 4, 1979.

³ Board's Memorandum and Order dated September 14, 1979.

⁴ Staff Ex. 1B.

for increased spent fuel storage capacity, environmental impacts of the proposed modification, environmental impact of postulated accidents, alternatives for spent fuel storage, and cost-benefit balance of the proposed modification as compared to alternatives. Under the heading, "Basis and Conclusion for Not Preparing an Environmental Impact Statement",⁵ the EIA states:

We have reviewed this proposed facility modification relative to the requirement set forth in 10 CFR Part 51 and the Council on Environmental Quality's Guidelines, 40 CFR 1500.6, and have applied, balanced, and weighed the five factors specified by the Nuclear Regulatory Commission in 40 *Federal Register* 42801. 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. Therefore, the Commission [sic] has found that an Environmental Impact Statement need not be prepared and that, pursuant to 10 CFR 51.5(c), the issuance of a negative declaration to this effect is appropriate.

The conclusions set forth in the EIA were supported by Staff's and Applicant's witnesses:

- (1) The proposed modification will not require any additional commitments of land, since it will alter only the spent fuel storage racks in the existing spent fuel pool.⁶
- (2) There will be no significant change in plant water consumption or use as a result of the proposed modification.⁷
- (3) The potential offsite radiological environmental impact associated with expansion of the spent fuel storage capacity will be environmentally insignificant⁸ either to the atmosphere⁹ or to receiving waters.¹⁰
- (4) The additional solid radioactive waste resulting from the proposed modification would result from increased loading on the pool purification system¹¹ and from disposal of the present spent fuel pool racks.¹² The present filtration demineralization system is capable of

⁵ *Id.* at § 10.0.

⁶ *Id.* at § 5.1; Testimony of Tom R. Tramm (Tramm) at p. 3 following Tr. 564.

⁷ Staff Ex. 1B, § 5.2; Tramm at pp. 4-5.

⁸ Staff Ex. 1B, § 5.3.1.

⁹ *Id.*, § 5.3.2; Tr. 885, 1060, 1065.

¹⁰ Staff Ex. 1B, § 5.3.4.

¹¹ *Id.*, § 5.3.3; Tr. 592, 776.

¹² Staff Ex. 1B, § 5.3.3; Tramm at p. 5.

handling the increased loading.¹³ The total amount of waste shipped from the plant will be increased by about 2 percent (as averaged over the lifetime of the plants) and will have no significant environmental impact.¹⁴

- (5) The proposed modification will not result in any significant increase in radiation doses received in onsite occupational exposure;¹⁵ it should add less than 1 percent to the total annual occupational radiation exposure burden at the facility.¹⁶
- (6) There will be no change in the chemical or biocidal effluents from the plant as a result of the proposed modification.¹⁷
- (7) The proposed modification will not result in any significant increase in the plant thermal discharge, since the increased thermal discharge would be less than 0.04 percent of the estimated total thermal discharge to Lake Michigan.¹⁸
- (8) No environmental impact on the community is expected to result from the fuel rack conversion itself or from subsequent operation of the pool with increased amounts of spent fuel.¹⁹

The Staff and Applicant testified in regard to Contention 2(a). The Intervenor did not present any direct testimony regarding this contention.

2. Proper Issuance

Intervenor raised questions relating to the timing of the decision to issue an EIA rather than an Environmental Impact Statement (EIS)²⁰ and to the similarity of the EIA for Zion to those for other spent fuel pool modifications,²¹ such as Salem.²² Consequently, Intervenor questioned the adequacy, independence, and site-specificity of the assessment of the environmental impacts of the proposed modification.²³ The Board requested that the Staff substantiate that the EIA was performed after specific examination of plant design and in consideration of conditions unique to Zion Station, including its location and possible impact on the environment and the human health of the surrounding area.²⁴ Staff's response was that the full

¹³ Staff Ex. 1B, § 5.3.3.

¹⁴ *Id.*

¹⁵ Staff Ex. 1B, § 5.3.5; Testimony of George J. Pliml (Pliml) at p. 5 following Tr. 677.

¹⁶ Staff Ex. 1B, § 5.3.5.

¹⁷ *Id.*, § 5.3.8; Tramm at p. 6.

¹⁸ Staff Ex. 1B, § 5.3.8; Tramm at p. 4.

¹⁹ Staff Ex. 1B, § 5.3.9; Tramm at p. 6.

²⁰ Tr. 612-614.

²¹ Tr. 629-641.

²² *Public Service Company of New Jersey*, Docket No. 50-272.

²³ Tr. 623, 629.

²⁴ Tr. 576-577.

range of potential site-specific environmental impacts for the construction and continued operation of Zion was considered in the Staff's Final Environmental Statement (FES), issued December 1972, and that in the environmental review pertaining to the proposed modification, the Staff evaluated whether the modification would result in potential for *increasing* impacts previously evaluated in the FES.²⁵ The Staff explained similarities in language of the EIA's for Zion and Salem by noting that the Staff's witness was project manager responsible for both rerackings,²⁶ and that relevant portions of both documents discuss generic issues applicable to all fuel pool modifications regardless of location.²⁷

The Board notes that the timing of the decision that an EIS was not necessary and the marked similarity of the EIA at hand to the EIA's for similar facilities raised serious doubts as to the credibility of the EIA for the Zion facility. Resolution of these doubts required extensive questioning of the Staff witness by Intervenor and by the Board.

However, based on examination of the EIA itself in conjunction with evidence presented by Staff's and Applicant's witnesses at the evidentiary hearing, the Board finds that the proposed modification will not significantly increase the environmental impact of the Zion facility. Accordingly, the proposed action is not a major action of the Commission significantly affecting the quality of the human environment. Thus, no environmental impact statement is required, and the EIA satisfies the requirements set forth in 10 CFR 51.5 and 10 CFR 51.7.

B. Nuclear Regulatory Commission's "Notice of Intent"

Intervenor's Contention 2(b) states:

Approval of the amendment request would be contrary to the NRC policy position on spent fuel storage which prohibits non-emergency licensing of any existing storage facility prior to the adoption of an official long term policy regarding the permanent storage of spent fuel. See "Intent to Prepare Generic Environmental Impact Statement of Handling and Storage of Spent Light Water Power Reactor Fuel", 40 Fed. Reg. 42801, September 16, 1975.

- (1) There is no emergency need to rerack as the existing storage pool contains more space than is necessary to accommodate full core discharge.
- (2) The existing pool is able to accommodate normal refueling

²⁵ Tr. 609-610.

²⁶ Tr. 611, 629-641.

²⁷ Tr. 637.

discharges until 1981; therefore, failure to grant the application at this time poses no threat of imminent shutdown of the facility.

Contention 2(b) cites the Nuclear Regulatory Commission's, "Notice of Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel" (hereinafter "Notice of Intent"). At the time of the evidentiary hearing, the generic environmental impact statement (GEIS) had only been issued in draft form.²⁸

In its Notice of Intent, the Commission specifically noted that in the interim period, *i.e.*, prior to issuance of the GEIS, a licensing action intended to ameliorate a possible shortage of spent fuel storage capacity could proceed, provided it was accompanied by an EIA (10 CFR § 51.5(c)) or EIS (10 CFR § 51.5(a)) tailored to the facts of the case. In each such licensing action, it is incumbent on the Board to apply, weigh, and balance five factors, *i.e.*: (1) the likelihood 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) the likelihood that taking any particular licensing action of this type during the time frame under consideration would not 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) the likelihood 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) the likelihood 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) the likelihood that deferral or severe restriction on licensing actions of this type would result in substantial harm to the public interest.

The EIA examined each of the five factors. With respect to the first factor, Staff, Applicant, and Intervenor agree that the proposed licensing action has independent utility in that it will allow Zion Station to continue operating beyond 1983, when lack of spent fuel storage space would otherwise force the Station to shut down until the proposed federal storage facility for spent fuel is in operation.²⁹ Upon cross-examination, Staff's witness estimated the availability of some type of federal storage facility by 1986,³⁰ but noted that

²⁸ NUREG-0404, March 1978. The final generic environmental impact statement has now been issued. NUREG-0575, "Final Generic Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel", August 1979. Even though the GEIS has been issued, the Board is proceeding on the basis that Commission policy stated in the Notice of Intent is applicable until modified by the Commission.

²⁹ Staff Ex. 1B, § 8.4.1; Intervenor's Proposed Findings in regard to Applicant Proposed Finding 38.

³⁰ Tr. 690, 692.

while the Administration has proposed legislation to authorize the government to contract for or to build such facilities, such legislation has not yet been approved.³¹ In further support of the utility of the proposed action, the proposed modification will provide the Applicant with flexibility, even if an offsite facility becomes available in that it will allow accommodation of a full core should it be desirable for operational reasons to offload,³² and it will allow more efficient scheduling of spent fuel shipments to the spent fuel repository, since after opening of the repository it will require some time for complete transfer of spent fuel from the various reactors in the country.³³

In regard to the second factor, the proposed action will not constitute a significant commitment of material resources (such as steel, aluminum, boron, and carbide).³⁴ It will not foreclose similar licensing actions at other nuclear power plants, nor will it commit in any manner the NRC to again authorize additional expansion of storage capacity at Zion in 1992, at which time the proposed storage racks will be full if no spent fuel is shipped offsite in the interim.³⁵

Based on evidence from the Staff³⁶ which was not challenged by the Intervenor, there is no indication of any cumulative environmental impacts which have been overlooked in addressing the potential environmental impacts associated with this specific licensing action.

With regard to the fourth factor, the Staff witnesses indicate that they have responded to all technical issues concerning health, safety, and the environment which arose during their review of the proposed license amendment, and that these issues are addressed in the EIA and the Safety Evaluation.³⁷ The Intervenor stated that the technical issues have not been resolved and as examples pointed to the various technical contentions at issue in the hearing. Further, the Board on its own motion asked the parties to address certain technical issues which were not explicitly dealt with in the Staff's EIA and Safety Evaluation. In addition, the Board subsequently reopened the record to receive evidence regarding the safety of the proposed fuel storage racks to be used in the spent fuel pool.³⁸

The Board interprets the question raised by the fourth factor to be whether there are technical issues in this individual licensing proceeding which remain unresolved. The Board finds that there are no technical issues which have

³¹ Tr. 693.

³² Tr. 691.

³³ Tr. 694-695.

³⁴ Staff Ex. 1B, § 8.3.2; Tramm at p. 7.

³⁵ Staff Ex. 1B, § 8.4.2.

³⁶ *Id.*, § 8.4.3.

³⁷ Staff Ex. 1A and 1B.

³⁸ Board Memorandum and Order, September 14, 1979.

arisen during the review of this license amendment application which have not been resolved within the context of this proceeding.

In regard to the fifth factor, deferral or severe restriction of this licensing action would result in substantial harm to the public interest. Without such action, evidence indicates that the Zion Station will lose full core discharge capability in 1981, followed by certain shutdown in 1983. After 1981, there would be a possibility of shutdown at any time due to lack of space in the spent fuel pool to accommodate offload of a full core.³⁹ Shutdown would harm the public interest in that Applicant's ability to meet electrical energy needs could be adversely affected, or the energy needs might have to be met by plants which have greater environmental impact or which are less economical to operate.⁴⁰

In regard to urgency to implement the proposed modification, Applicant testified that while there is no emergency need to install absorber racks at Zion by fall 1979 (the next scheduled refueling outage),⁴¹ replacement of the spent fuel racks should proceed as soon as possible to minimize occupational exposure, since the less spent fuel in the pool at the time of reracking, the less time and labor will be required to effect the change. However, any additional occupational exposure incurred by delaying reracking until after fall 1979 would still be well within limits set forth in 10 CFR Part 20.⁴² The Board finds, accordingly, that while deferral of the spent fuel pool modification will not cause occupational exposure to exceed limits, it will be in the public interest to keep exposure to a minimum by reracking as soon as feasible consistent with implementation of adequate quality assurance programs and reracking procedures.

C. Need or Continued Operation of Zion Station

Contention 2(c) states:

Should it be necessary to shut down the Zion facility, pending the development of an alternate, away from reactor facility, the Applicant has not shown that the community currently being served by Zion would be adversely affected economically or by experiencing loss of electricity.

- (1) The Applicant has not explored the possibility of meeting current demand by increased use of under-utilized fossil-fueled plants serving the Edison system.

³⁹ Staff Ex. 2B, § 2.0; Testimony of Gary G. Zech (Zech) on Contention 2(b) at p. 2 following Tr. 607.

⁴⁰ Staff Ex. 1B, § 8.4.5; Zech at pp. 2-3; Pliml at p. 6.

⁴¹ Pliml at p. 6.

⁴² Pliml at p. 6.

- (2) The Applicant has not considered curtailing the output from Zion in conjunction with a conservation program and coordinated rate structure which would reduce the demand for electricity in the area served by Zion.

Applicant and Staff submitted testimony in regard to Contention 2(c).⁴³ Shutdown of Zion units in the early 1980's could adversely affect Applicant's ability to meet electrical energy needs and could force operation of other plants which are less economical to operate, with resulting increased costs which would be borne by customers. Applicant estimated an average cost of \$441,000⁴⁴ per day with both Zion units out of operation⁴⁵ or \$178,000 per day with one unit out of operation.⁴⁶ Staff's witness estimated an average cost of \$240,000 per day with both units out of operation.⁴⁷ Staff also estimated replacement energy costs of \$3.6 million per month if Zion were operated at half load, a measure assumed to reduce generation of spent fuel by a factor of two and thus extend available storage capacity of the spent fuel pool to late 1986.⁴⁸ Differences in Staff's and Applicant's estimates of costs were attributed to differences in assumptions related to two factors, *i.e.*, source of replacement power and capacity factor. Staff assumed a much greater reliance on cheaper high-sulfur coal burning units⁴⁹ although Staff's witness admitted that use of high-sulfur coal might not be permitted due to environmental considerations.⁵⁰ In regard to capacity factor, Staff's estimate of 58 percent was based on nuclear power plants in general, rather than on actual capacity factors (67 percent) experienced at Zion Station in the past two years. Because of the conservative assumptions used by the Staff, Staff's witness noted that actual replacement costs would exceed his estimate.⁵¹

Applicant's calculations are based on comparison of cost of fuel used in generating electricity at Zion Station with equivalent fuel-related costs for other nuclear, coal, and oil-fired generating units (primarily within the Commonwealth Edison System) which would be required to replace Zion's output.⁵²

⁴³ Testimony of Roland Kraatz (Kraatz) following Tr. 815; Testimony of Argil L. Toalston (Toalston) following Tr. 846.

⁴⁴ Expressed in constant 1978 dollars; does not assume any inflation rate or escalation rate in replacement power costs. Tr. 836-837.

⁴⁵ Kraatz at p. 2.

⁴⁶ At the hearings Kraatz testified that this cost would be \$262,000 per day (Tr. 832); however, by affidavit dated July 9, 1979, he stated that his testimony was in error and supplied the lower estimate given above.

⁴⁷ Toalston at p. 2.

⁴⁸ Staff Ex. 1B, § 7.6; Tr. 843, 847-848.

⁴⁹ Tr. 849, 871.

⁵⁰ Tr. 864-865.

⁵¹ Tr. 850.

⁵² Kraatz, Attachment A.

Applicant also estimated that the portion of Zion's output which would be replaced by oil-fired generating units would require burning approximately 850,000 gallons of oil per day (300 million gallons per year).⁵³

Applicant's witness further noted adverse effects on reliability of electric supply should the Zion units become unavailable in the early 1980's in that the estimated peak load reserve levels during the period 1982 to 1985 would be, during most years, substantially lower than the already somewhat low reserve criterion of 14 percent:

1982	2.3%
1983	10.1%
1984	17.1%
1985	12.1% ^{54 55}

In regard to effect of energy conservation practices on need for power, Applicant encourages energy conservation through customer information programs and through time-of-day rates for large industrial customers, and an experimental time-of-day rate program is underway for residential customers.⁵⁶ However, such measures have only a small effect on operation of the Station since it is operated in a baseload manner.⁵⁷

On cross-examination, Applicant's witness admitted that Applicant has never sent out energy conservation information with customers' electric bills,⁵⁸ and he authenticated a condensed summary of Applicant's rates which indicates that the rates charged to commercial, industrial, governmental, and school customers reflect a "declining block rate structure", *i.e.*, the greater the amount of electricity such customers use, the lower the cost per kilowatt hour they pay.⁵⁹ With regard to energy conservation, Staff witness testified that, since a nuclear unit serves the base load rather than peak load portion of the load cycle, a reduction in energy demand would not affect demand upon a nuclear unit. If conservation measures tend to shift the peak load from the peak to the base, the existing nuclear unit becomes even more important. At the same time, if base load is reduced, additional energy generation will likewise be delayed or reduced so that the result is effectively the same.⁶⁰

The Board finds that the proposed action, in itself, will not significantly

⁵³ Kraatz, p. 4; Tr. 815, 837.

⁵⁴ Tr. 812; Kraatz, Attachment B.

⁵⁵ Based on projection of increased peak load demand at an annual rate of 4-1/2 percent. Tr. 820, 838.

⁵⁶ Kraatz at p. 4.

⁵⁷ Kraatz at pp. 4-5.

⁵⁸ Tr. 822.

⁵⁹ Intervenor's Ex. 4; Tr. 826-829, 830-831.

⁶⁰ Tr. 862-863.

affect the human or other environment,⁶¹ and therefore, no consideration of alternatives is required.⁶² However, were such consideration required, the Board finds the preponderance of the evidence to substantiate need for continued operation of the Zion Station unit at least through the 1980's in view of the uncertainty in construction schedules for other generating units in the Commonwealth Edison System.⁶³

D. Accidents

1. Drop of Heavy Objects.

Contention 2(f) states:

There has been insufficient development of credible accident scenarios. For example:

- (1) there is insufficient documentation to establish the methods by which the Applicant will positively prevent the movement of heavy objects, such as shipping casks or empty fuel racks, over the pool during modification; thus, accidental droppings of such heavy objects, which could lead to unacceptable damage to spent fuel or the pool liner and consequent release of radionuclides, has not been precluded.
- (2) there is insufficient information regarding the methods by which accidental damage to stored spent fuel assemblies will be prevented during the installation of the new poisoned spent fuel storage racks.

In order to prevent damage to spent fuel assemblies stored in the pool, procedures will be utilized such that neither the old racks being removed nor the new absorber racks which are being placed in the pool will be carried over the spent fuel.⁶⁴

The rack replacement operations will be supervised by fuel handling foremen, who have a limited senior reactor operator's license.⁶⁵ At least one of the fuel handling foremen will be present at all times. They will direct the activities of the fuel handlers, who will receive refresher training before each semi-annual refueling outage. In addition, prior to the proposed rack replacement, they will review the procedures, the lifting rig, and the

⁶¹ See Conclusions of Law, *infra*, paragraph

⁶² *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979).

⁶³ Kraatz at p. 3.

⁶⁴ Testimony of John P. Leider, Jr., (Leider) at pp. 3-4 following Tr. 758; NRC Staff Testimony on Contention 2(f)(2) at pp. 1-2 following Tr. 1960.

⁶⁵ Tr. 1888.

techniques to be used, and they will conduct a test lift using the main crane and the lifting frame attached to a new rack.⁶⁶

Assurance that racks will not be lifted over stored spent fuel during the proposed rack replacement operation will be provided during much of the rack movement by crane interlocks which prevent loads moving over the pool. During those portions of the rack replacement which must involve movement over the pool with the interlocks bypassed, written procedures will be in effect to prevent movement of the racks over the stored spent fuel. The interlock is bypassed through use of a key which is in the possession of the senior licensed fuel handling foreman. Administrative controls will be required during portions of the rack replacement which involve movement of the racks over the pool because of the difficulty of devising mechanical interlocks to restrict crane movement when a number of directional coordinates are involved. The administrative controls on rack movement will be set forth in written procedures and enforced by the crane operator, under the direct supervision of a licensed fuel handling foreman. The written procedures for rack installation are being developed at Zion Station and have not yet been finalized.⁶⁷

A spent fuel shipping cask will not be carried over the pool during the proposed rack replacement operation. Such casks will not be involved in the proposed modification. Furthermore, there are no casks in the plant, and there are no plans to bring casks into the plant.⁶⁸ By letter dated April 8, 1976 the Applicant made a commitment to notify the NRC in advance should it become necessary to handle heavy loads in the vicinity of the spent fuel storage pool.⁶⁹ In addition, the Staff intends to issue a technical specification which will not allow the handling of any loads of greater weight than a single fuel assembly plus the spent fuel handling tool over stored spent fuel. The technical specification will not allow the movement of a shipping cask or an empty fuel rack over the stored spent fuel during the proposed rack replacement. This technical specification will be included in any licensing amendment issued to permit the proposed rack replacement.⁷⁰

The consequences of hypothetical drop accidents related to the proposed rack replacement were considered. These include the drop of a rack onto the pool floor, the drop of a fuel assembly onto a storage rack during the transfer of the stored fuel from the old racks to the new racks, and the drop of one fuel assembly being transferred onto another stored fuel assembly.

⁶⁶ Leider at p. 3.

⁶⁷ Tr. 1890-1891, 1896-1897, 1913.

⁶⁸ Leider at p. 2; Tr. 1903.

⁶⁹ Tr. 1980-1981.

⁷⁰ Staff Ex. 1A (SER), §2.3; Tr. 1963, 1965, 1971.

The drop of a rack onto the pool floor will not result in major damage to the pool structure allowing gross leakage.⁷¹ Although this drop accident was not specifically analyzed, during the original plant design and safety review it was determined that the drop of a much heavier shipping cask into the pool would not result in through-the-slab cracking and gross leakage.⁷² It is credible that such a drop could tear the stainless steel pool liner.⁷³ Beneath the liner a network of channels is embedded in the surface of the concrete pool structure which would collect the water draining through such a tear. The water collected in this manner is piped through six 1-1/2" pipes through the concrete walls of the pool to a collection tank for processing as liquid radwaste and recycle in the plant. It is anticipated that pool water would not escape through the concrete structure of the pool to the outside environment. At the maximum drainage rate through these pipes a minimum of 23 hours would be available either to repair the liner or to add makeup water. Temporary measures can be taken to reduce the leak rate.⁷⁴ Damage to the liner which might result from the drop of a fuel cask would be within the makeup capability of the various water sources that exist at the plant and would envelope the damage which might result from the drop of a rack.⁷⁵

The consequences of a drop of a single fuel assembly onto one of the new storage racks was analyzed.⁷⁶ The assembly was hypothesized to drop from a height of 24 inches, which is the maximum height at which such an assembly can be transported over stored fuel.⁷⁷ The criterion used was that no structural part of the rack which is required to maintain K-effective less than 0.95 should be stressed beyond the elastic limit. The part of the rack which could be damaged will not contain neutron absorber material. Therefore, no increase in K-effective should occur as a result of this accident.⁷⁸ The deformation at the top of the fuel rack resulting from such an accident could temporarily hinder the withdrawal of a fuel assembly stored in the tube at the time. However, the tubes are made of light material, which could be straightened so that the assembly could be removed.⁷⁹

⁷¹ Testimony of Tom R. Tramm (Tramm) at pp. 9-10 following Tr. 564; Tr. 1920-1981; Testimony of Gary G. Zech (Zech) on Contention 2(f)(1) at p. 2 following Tr. 1958.

⁷² Tr. 1966-1967.

⁷³ Tr. 1903, 1970.

⁷⁴ Tramm at pp. 10-11; Tr. 1911-1912.

⁷⁵ Tr. 1980-1981; The sources of makeup water at the Zion Station are discussed infra, in response to Board Question 4, pp. 84-86.

⁷⁶ Testimony of Quazi Anwar Hossain (Hossain) following Tr. 1700; Applicant's Ex. 4 (Licensing Report), §§3.4, 3.5, and 3.4.4.

⁷⁷ Hossain, Attachment B.

⁷⁸ Tr. 1713-1717.

⁷⁹ Tr. 1717-1718.

The consequences of a fuel assembly dropping directly on top of another fuel assembly from a height of 2-1/2 feet were also analyzed. No damage to any of the fuel rods in either assembly should occur as a result of such a drop.⁸⁰

During the review at the operating license stage, the design basis fuel handling accident considered was the drop of a spent fuel assembly onto the spent fuel pool floor and the breaking of all the fuel rods in the assembly. The analysis of the postulated accident is documented in Section 14.2.1 of the Zion Final Safety Analysis Report (FSAR), where it is indicated that the plant's safety and clean-up systems are adequate to keep the consequences of this occurrence to within 10 CFR Part 100 limits.⁸¹

The additional handling required to shift stored fuel assemblies from the old racks to the new racks will increase the probability of a fuel assembly drop.⁸² The reracking will necessitate about 400 extra fuel moves, which would add less than 1 percent to the total number of fuel moves anticipated during the plant's lifetime. The consequences of a fuel assembly drop will not be increased by the proposed reracking.⁸³ Further, the consequences would be less than the consequences of dropping a fuel assembly freshly removed from the reactor during refueling, which was the assumption used for the design basis fuel handling accident.⁸⁴

There are four loads lighter than a fuel assembly which are handled over stored fuel. These are the spent fuel handling tool, the burnable poison tool, the rod cluster control changing fixture; and the thimble plug. Although lighter than a single fuel assembly, these four loads could develop greater kinetic energy because of greater potential drop heights. Accordingly, the Staff intends to issue a technical specification change which will require that none of these loads be transported at a height greater than two feet over the storage racks.⁸⁵

The Board finds that the Applicant and the Staff have provided sufficient information with respect to the methods, procedures, and technical specifications which will be utilized to prevent accidental damage to stored spent fuel assemblies or the spent fuel pool liner during the installation of new spent fuel storage racks. Therefore, the Board finds that the risks associated with accidental damage to the stored spent fuel or to the pool or its liner during the proposed modification are such that the modifications can be conducted without jeopardizing public health or safety.

⁸⁰ Tr. 1964-1965, 1982-1983.

⁸¹ Tramm at pp. 25-27; Hossain at p. 3; NRC Staff Testimony on Contention 2(f)(2) by John J. Zudans (Zudans) at p. 3 following Tr. 1960; SER §2.3.

⁸² Tramm at p. 27; Zudans at p. 3.

⁸³ Leider at p. 8; Tramm at p. 27.

⁸⁴ Zudans at p. 3.

⁸⁵ SER, § 2.3.

2. Pool Boiling.

Contention 2(g) states:

The Applicant's discussion of spent fuel boiling is inadequate in that (1) there is no consideration given to the possibility that the pool might boil, and (2) there is no discussion of possible damage to fuel cladding or of the consequent release of radionuclides under such conditions; therefore, there is no assurance that public health and safety will not be endangered.

In addition, the heat removal capacity of the spent fuel pool cooling system has not been shown to be adequate to support the expanded pool capacity.

The Zion Station spent fuel pool cooling system has two cooling trains, each of which consists of a pump, a heat exchanger, piping, and associated valves and instrumentation. The spent fuel pool cooling system is itself cooled by the Zion Station component cooling system, which includes five pumps, three heat exchangers and associated piping and valves. The component cooling system transfers the heat load from the spent fuel pool and other station heat sources (primarily the residual heat removal systems, which cool the reactor cores after shutdown) to the service water system, which discharges the heat into Lake Michigan.⁸⁶ The details of these cooling systems are set forth in Sections 9.3, 9.4, and 9.5 of the FSAR and the accompanying FSAR charts.⁸⁷

The Applicant analyzed the spent fuel pool cooling system and concluded that either of the two spent fuel pool cooling system trains is sufficient by itself to prevent the SFP water from boiling, even with 2112 spent fuel assemblies stored in the pool, which is the maximum capacity covered by the application.⁸⁸ This conclusion is based on thermohydraulic analyses in which a proprietary computer code named POOLHT was used to calculate bulk fuel pool water temperature as a function of heat input from spent fuel, heat rejection through the pool cooling systems, pool water mass and time.⁸⁹ This showed that for the worst case considered the maximum temperature reached is 180°F.⁹⁰

The worst case assumptions were that an entire core of spent fuel (193 assemblies from one unit) is discharged ten days following the completion of a normal one-third core refueling discharge from the other unit. This was

⁸⁶ Tramm at pp. 12-13.

⁸⁷ Applicant's Exs. 3 and 7.

⁸⁸ Tramm at p. 12.

⁸⁹ Tramm, Appendices F and G; Licensing Report, §3.6.

⁹⁰ Tramm at p. 18, and Figure 3-22 of Appendix G.

assumed to occur at a time when only one heat exchanger was operating.⁹¹ In its Order dated May 1, 1979, the Board inquired whether the fuel pool will reach boiling temperature under such circumstances where the full core discharge from one Zion unit follows the core refueling discharge from the other Zion unit by ten days or less. The Applicant's witness testified that considering an existing Zion technical specification requiring that fuel transfers not begin until 100 hours following reactor shutdown, it is not likely that a full core discharge could be accomplished in less than ten days following completion of a refueling discharge. However, the Applicant is willing to accept a technical specification restricting fuel movements during core unloading through the imposition of a ten day minimum time for completion of full core discharge.⁹² Both Staff and Applicant indicated that there is no safety reason which would compel the Applicant to move fuel more quickly from the reactor into the spent fuel pool. However, there may be an economic penalty associated with such a delay.⁹³

A calculation of natural circulation flow rates within the pool was performed also to determine thermal loads on the proposed absorber racks and the potential for localized boiling. The maximum increase in water temperature as a result of natural circulation flow up through a fuel assembly in a storage tube was found to be 32.4°F.⁹⁴ These calculations employ a proprietary code named CIRCUS in which the peak power spent fuel assembly is assumed to be stored in the middle of the pool in an east-west row of average power spent fuel assemblies. Water flow in this row of fuel assemblies is assumed to follow a path from the top of the pool, down the side of the pool (in the 9-inch gaps between the proposed new absorber racks and the east and west sides of the pool), through the 7-inch high flow area underneath the racks, through the 5-inch hole in the bottom of the fuel storage tubes, and up through the stored spent fuel assemblies to the top of the pool. This model gives an upper bound for increase in water temperature within the storage tubes, because it ignores flow from the north and south sides of the pool and flow between the racks. Further, the major resistance to flow of cooling water occurs within the stored fuel assemblies themselves. For purposes of the calculations this resistance was maximized by assuming that the fuel assemblies are stored with control rods present. This is not usually done at Zion except in the case of a full core discharge.⁹⁵

⁹¹ Tramm at p. 18.

⁹² Tramm at p. 19.

⁹³ Tramm at pp. 17-19; Tr. 1508-1510; Tr. 1674-1676.

⁹⁴ License Report at p. 3-51; Tr. 1753-1754.

⁹⁵ Licensing Report at p. 3-51; Tr. 1475, 1748-1750, 1754-1757, 1771, 1931.

The performance of the spent fuel pool cooling system is related to the other heat loads which are transferred by the component cooling system in that such performance is a function of the temperature of the component cooling system water. Postulated plant upset conditions such as a loss of coolant accident ("LOCA") could increase the temperatures in the component cooling system and therefore possibly cause a temporary reduction in spent fuel pool cooling.⁹⁶ Neither POOLHT nor CIRCUS is modeled to calculate the temperature of the component cooling system during a LOCA. Instead the Applicant made allowance for such conditions in its calculations in its choice of the component cooling water temperature.⁹⁷

The assumption was made that the temperature of the component cooling system water at the inlet to the spent fuel pool heat exchangers was 80° F. On cross-examination, Applicant's witness admitted that the corresponding temperature in the FSAR is 95° F. The witness defended this choice by observing that the 95° F temperature assumed in the FSAR is derived from a water temperature in Lake Michigan of 80° F which is conservatively high. The use of 80° F component cooling water assumed a lakewater temperature of 70° F. The records of lakewater temperature in the Zion Final Environmental Statement, Appendix D, indicate that this lower temperature is conservative, in that the maximum recorded average monthly lakewater temperature at Waukegan is 63° F in August. In contrast, refuelings normally take place in the spring and fall of the year when lakewater temperatures are less. If a value of 90° F for the component cooling water temperature had been used, the pool temperatures would have been about 15° F higher.⁹⁸

Using its own analytical methods, the Staff performed calculations of spent fuel pool cooling capacity. Their calculations involved a hypothetical situation similar to the worst case assumed by the Applicant in which a full core with a full inventory of fission products is offloaded, filling the last of the 2112 spaces in the pool ten days after the thirtieth refueling. The maximum possible heat load in the spent fuel pool under such circumstances is calculated to be 51×10^6 Btu/hr. If one of the spent fuel pool cooling trains is not operative, the outlet water temperature would rise to about 170° F. Based on these calculations the Staff concluded that the present cooling capacity for the Zion spent fuel pool is adequate for the proposed modification.⁹⁹

Intervenor's testimony indicated that boiling could occur in the spent fuel pool under two circumstances. The first circumstance would be if there were no cooling of the water in the spent fuel pool. According to the witness this

⁹⁶ Tramm at p. 29; Tr. 1460-1461.

⁹⁷ Tr. 1464, 1466.

⁹⁸ Tr. 1454-1455, 1459-1460; 1496-1500.

⁹⁹ NRC Staff Testimony on Contention 2(g) by Richard M. Lobel, Jack N. Donohew and Edward Lantz (Lobel, Donohew and Lantz) at pp. 7-9 following Tr. 1632.

could occur if the component cooling system became overloaded under reactor accident conditions. The second way boiling could occur would be under heat load conditions similar to those analyzed by the Applicant and the Staff, in which a full core discharge follows completion of a normal refueling discharge by ten days or less and only one spent fuel heat exchanger is operative. In this case it was predicted localized boiling could take place.¹⁰⁰

The accident conditions referred to in Intervenor's testimony involved a scenario in which it becomes necessary to cool down both Zion reactors simultaneously using the residual heat removal system. Under such circumstances, he calculated that the total heat load on the component cooling system, taking into account the maximum heat load produced by the spent fuel pool during the 33rd refueling discharge, would exceed the design heat transfer capability of the component cooling system heat exchangers given in the FSAR.¹⁰¹ However on cross-examination the witness admitted that he had overestimated the total heat load on the component cooling system. Further, that in using the design heat transfer capability given in the FSAR he had underestimated the maximum heat removal capability of the component cooling system, which could be much greater.¹⁰² The witness could not hypothesize any circumstances under which the Applicant would not be able to maintain cooling on one reactor unit through the steam and power conversion system. Therefore he indicated that the heat load from at least one reactor unit would not have to be put on the component cooling system under such circumstances.¹⁰³ ¹⁰⁴ The witness also conceded that even if the

¹⁰⁰ Direct Testimony of Marvin Resnikoff (Resnikoff) at pp. 1, 4-10 following Tr. 1528.

¹⁰¹ Resnikoff at pp. 6-8.

¹⁰² Tr. 1543-44, 1546-47, 1575-76.

¹⁰³ Tr. 1539-41.

¹⁰⁴ The witness observed that this answer requires an assumption that given a design basis LOCA at one unit at Zion, personnel could operate the second unit. The Board takes notice of General Design Criteria numbers 5 and 19 of 10 CFR Part 50 Appendix A which state:

Criterion 5—Sharing of structures, systems, and components. Structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units.

Criterion 19—Control room. A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident.

Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

component cooling system were subjected to the extreme heat loads described in his testimony, this would not cause a malfunction of the component cooling system. He agreed that it would require more than a single failure to cause the component cooling system to cease to function.¹⁰⁵

Intervenor's witness estimated that the bulk SFP water temperature would rise to 142.5° F in the event of a full core discharge following a normal refueling discharge by ten days with one heat exchanger operative. However, he further postulated that the 5-inch hole at the bottom of a storage tube which normally allows entrance of cooling water, could become blocked. Under such circumstances, he predicted that localized boiling could occur.¹⁰⁶ On cross-examination, he explained that the hole at the bottom of a tube could become blocked if for example a shoe fell in the pool. However, even if this occurred he indicated that the resulting localized boiling would not boil off enough water to expose the top of the stored fuel assemblies. He indicated that he would not be concerned about damage to the particular fuel assembly from such localized boiling.¹⁰⁷

In its May 1, 1979 Order denying motions for summary disposition, the Board directed the parties to address whether the Zion spent fuel pool cooling system and the component cooling system meet the single failure criterion as defined in 10 CFR Part 50, Appendix A. The component cooling system does meet the single failure criterion.¹⁰⁸ However, the spent fuel pool cooling system does not meet the criterion. A single failure of the pipe which returns water to the pool from the spent fuel pool cooling system could result in a loss of spent fuel pool cooling ability.¹⁰⁹ The Staff testified that the single failure criterion is not applicable to the spent fuel pool cooling system.¹¹⁰ The Applicant indicated that the Zion spent fuel pool meets the applicable general design criterion in 10 CFR Part 50 Appendix A, which does not incorporate the single failure criterion.^{111 112}

¹⁰⁵ Tr. 1548-1549.

¹⁰⁶ Resnikoff at pp. 9-10; Tr. 1550-1551

¹⁰⁷ Tr. 1552-1554.

¹⁰⁸ Tramm at p. 20, Tr. 1495-1496, 1510-1513, 1676, 1955-1956.

¹⁰⁹ Tr. 1514, 1676.

¹¹⁰ Tr. 1654.

¹¹¹ Tr. 1494-1495.

¹¹² Applicant's witness indicated that the applicable criterion is General Design Criterion 61, "Fuel Storage and Handling and Radioactivity Control," which states:

The fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. These systems shall be designed (1) with a capability to permit appropriate periodic inspection and testing of components important to safety, (2) with suitable shielding for radiation protection, (3) with appropriate containment,

(Continued on next page)

Nevertheless, a single failure of the inlet pipe which returns water from the spent fuel pool cooling system to the pool is a credible event.¹¹³ There is testimony in the record of the consequences of such an event.

Once cooling capability is lost, the Applicant estimates that it would take at least 8.2 hours to boil, assuming the pool were initially at 150° F, which is in excess of the normal pool temperature.¹¹⁴ The Staff's estimate is about 8 hours, starting from 125° F (11° F per hour). Intervenor's witness estimated 6.3 to 12.9 hours starting from 150° F, which is in the same range as the Applicant's and Staff's estimate.¹¹⁵

Applicant's witness testified that before boiling would occur the Applicant would have sufficient time to fix a broken cooling system or to add makeup cooling water which would drive down the temperature of the spent fuel pool.^{116 117} The Staff testified that there would be sufficient time before boiling commenced to establish a flow of makeup water to the pool equal to the maximum possible boiloff rate.¹¹⁸ Intervenor's witness agreed that the question of boiling is negated if a continuing source of readily available makeup water for the Zion spent fuel pool is guaranteed. He also agreed that the sources of makeup water at Zion Station would be adequate, but only if it would be possible to deliver the water to the pool under all circumstances. For this reason, he suggested that the makeup water systems be fully automated so that human intervention is unnecessary.¹¹⁹

The 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.¹²⁰

In its May 1, 1979 Order, the Board asked the parties to address, if boiling occurs, the possible effect on the integrity of the cladding on fuel which has been stored for a long period of time. There currently is no basis to expect that

(Continued from previous page)

confinement, and filtering systems, (4) with a residual heat removal capability having reliability and testability that reflects the importance to safety of decay heat and other residual heat removal, and (5) to prevent significant reduction in fuel storage coolant inventory under accident conditions." Tr. 1495.

¹¹³ Tr. 1514, 1677.

¹¹⁴ Tramm at pp. 20-21.

¹¹⁵ Resnikoff at p. 2.

¹¹⁶ Tramm at pp. 21-23.

¹¹⁷ The sources of makeup water at Zion Station are described in more detail in response to Board Question 4, pp. 84-86.

¹¹⁸ Lobel, Donohew, and Lantz at pp. 8-9.

¹¹⁹ Tr. 1556-60, 1570.

¹²⁰ Tr. 1559-60, 1485-86, 1500-01, 1688-89, 1859-63.

aged fuel will be jeopardized by boiling conditions in the spent fuel pool.¹²¹ Further, leakage of radioactivity from a stored spent fuel assembly during spent fuel pool boiling would not be significantly different from that observed during normal pool operation.¹²² Intervenor submitted no testimony dealing with the effect of boiling on stored spent fuel in conditions where the stored fuel is not exposed to the air.¹²³

If boiling were to occur some non-volatile radioactivity normally present in the pool water could be entrained in water droplets in the air above the pool. These droplets would condense out on surfaces in the fuel building or ventilation ducts or be removed by the building filtration system. After boiling commenced access to the pool area would have to be controlled to maintain exposures as low as reasonably achievable, but people could still enter the pool area.¹²⁴

Conditions of high humidity caused by pool boiling, if continued for very long, could disable the prefilters and HEPA filters in the building filtration system. However, boiling would not need to be allowed to continue for such a length of time. Further, the Applicant could replace the filters even during conditions of high radioactivity within the fuel building. Accordingly, changes to the fuel building filtration system are not required to account for the possibility that the pool might boil.¹²⁵

Boiling in the spent fuel pool would have a negligible effect on the pool liner. Further, a rise in pool temperature to boiling and continued boiling for a period of up to 5 to 7 days would not affect the design behavior or structural integrity of the concrete in the spent fuel pool.¹²⁶

Boiling should have no effect on the neutron absorbing material (Boral) present in the proposed storage racks. Boiling would tend to increase the concentration of boric acid in the pool water, since the water would boil away but the boric acid would remain.¹²⁷ These higher concentrations of boric acid could be continued for a period of at least two weeks before they would have an effect on corrosion of the metals within the storage tubes.¹²⁸

Intervenor's witness discussed an accident which might follow if the water in the spent fuel pool were allowed to boil away, uncovering the stored spent fuel assemblies. According to his calculations, if no makeup water were added, the tops of the spent fuel racks would be uncovered in a period of 2.9 to

¹²¹ Testimony of A. Burtron Johnson, Jr. (Johnson) at p. 10 following Tr. 1057.

¹²² Lobel, Donohew, and Lantz at pp. 4-7.

¹²³ Tr. 1526.

¹²⁴ Lobel, Donohew, and Lantz at p. 6; Tr. 1485-86, 1651-52.

¹²⁵ Tr. 1678-82.

¹²⁶ Tr. 1880-83, 1885.

¹²⁷ Tr. 1664, 1683-84.

¹²⁸ Tr. 1324-27.

5.9 days following initiation of boiling. The witness testified that after being uncovered the spent fuel assemblies would heat up rapidly, and above 920°C an exothermic metal-water reaction would take place producing large amounts of heat and hydrogen gas. He indicated that the hydrogen liberated by this reaction could subsequently explode, which might lead to a major release of radioactivity from the spent fuel building. Because of the large inventory of radioactive materials in the spent fuel pool, he stated that such an accident would be much more severe than a reactor melt-down accident.¹²⁹ In support of his thesis that exposure to air of stored spent fuel could lead to a serious accident, the witness cited a report by Sandia Laboratories,¹³⁰ a copy of which had been served on all parties by the Staff.

Neither the Applicant nor the Staff has performed calculations relating to the possible heat up of spent fuel following exposure to air or the radiological consequences of such an event. Both take the position that such a loss of water accident at Zion Station is not credible.¹³¹

The Board finds that the Intervenor has not presented a sufficiently probable sequence of events by which boiling in the spent fuel pool could lead to a loss of water accident of the kind described in the Sandia Report or in testimony of its witness. Even according to the witness there would be a minimum of three to six days to add water to the pool to prevent this occurrence, and the witness concedes the supplies of makeup water at the Station are adequate for this purpose. Although he has raised a question whether human intervention to add makeup water would be possible under all circumstances, the Applicant and the Staff have testified, without contradiction on this record, that such intervention would always be possible. There is no reasonable basis for the witness's speculation that such an accident might be allowed to occur through neglect. Further, his concern that during a war or other period of social disruption the Applicant might "simply turn off the cooling system and walk away" from the generating station is without basis.^{132 133}

¹²⁹ Resnikoff at pp. 2-4, 11-19.

¹³⁰ NUREG/CR-0649, "Spent Fuel Heatup Following Loss of Water During Storage," A. S. Benjamin, *et al.*, March 1979.

¹³¹ Tr. 1486-1487, 1654-1656.

¹³² Tr. 1561-62.

¹³³ The Board takes notice of 10 CFR Part 50, Section 103, which states, in part:

50.103 *Suspension and operation in war or national emergency.* (a) Whenever Congress declares that a state of war or national emergency exists, the Commission . . . may,

. . . .

(3) Order the operation of any licensed facility.

(4) Order entry into any plant or facility in order to recapture special nuclear material or to operate the facility. . . .

The Board finds that the heat removal capacity of the Zion spent fuel pool cooling system and related cooling systems is adequate to support the expanded pool capacity. The Board finds that the analysis of possible spent fuel pool water boiling is adequate. The Board also finds that if boiling should occur in the spent fuel pool, there should be no damage to fuel cladding and no significant increase in the release of radionuclides. The Board finds that there are sufficient sources of makeup water and adequate access to such sources to ensure that the public health and safety is not endangered by boiling in the spent fuel pool.¹³⁴ The Board finds no basis in the record to require a technical specification which would restrict fuel movement during core unloading by imposing a ten-day minimum time on the completion of full core discharge.

E. Corrosion

Contentions 2(e)(3) and (4) state:

The amendment request and supporting documentation do not adequately discuss monitoring procedures. In the light of the proposed modification and long term storage of nuclear spent fuel the Applicant should clarify the following:

- (3) Methods for detecting the loss of neutron absorber material and/or swelling of stainless steel tubes in storage racks.
- (4) Details of a corrosion test program to monitor performance of materials used in the construction of the racks.

Contention 2(h) states:

The amendment request and supporting documentation have not analyzed the long term (including storage during the operating lifetime of the reactor) electrolytic corrosion effects of using dissimilar alloys for the pool liners, pipes, storage racks, and storage rack bases, such as the galvanic corrosion between unanodized aluminum as is used in Brooks and Perkins storage racks, and the stainless steel pool liner.

Contention 2(i) states:

The Applicant has not discussed whether the proposed modification and

¹³⁴ Although Contention 2(g) and Intervenor's testimony dealt only with loss of water accidents in the spent fuel pool caused by boiling, such accidents could be hypothesized to occur through other means. Accordingly, the Board on its own motion directed the Applicant and the Staff to summarize the design and/or engineered safeguards at the Zion spent fuel pool which decrease the likelihood of severe pool drainage accidents. The Board's findings with respect to these safeguards are found on page 86 below.

long-term storage may cause the following effects on the stored fuel: accelerated corrosion, micro-structural changes, alterations in mechanical properties, stress corrosion, cracking, intergranular corrosion, and hydrogen absorption and precipitation by the zirconium alloys.

Contention 2(j) states:

The amendment request and supporting documentation do not give sufficient data to fully assess the durability and performance of the Boral-stainless steel tubes which form the spent fuel storage racks:

- (1) there is inadequate analysis of the corrosion rate of the tubes.
- (2) there is no calculation of the effect of water chemistry on the Boral within the stainless steel.
- (3) there is no mention of the possible swelling of Boral within the stainless steel tubes, a condition which could affect, among other things, removal of fuel assemblies from the racks.

Contention 2(k) states:

The amendment request and supporting documentation do not consider possible degeneration of the Boral density due either to generic defects or to mechanical failure which would diminish the effectiveness of Boral as neutron absorber, thus leading to criticality in the spent fuel pool.

The proposed storage racks consist of a welded array of rectangular stainless steel tubes into which the spent fuel assemblies will be inserted. Within each stainless steel tube are four neutron-absorbing Boral sheets, one on each side. On each side of each tube, near the top, is a 1/4-inch vent hole which penetrates the inside stainless steel wall and which will allow spent fuel pool water to enter the tube and come in contact with the Boral material.¹³⁵ Boral is a product manufactured by Brooks and Perkins, Inc. which consists of boron carbide (B_4C) particles embedded in a matrix of commercially pure (1100) aluminum formed into a plate and clad with 1100 aluminum on both sides.¹³⁶

The materials exposed to water in the spent fuel pool are stainless steel in the pool liner, in the spent fuel assemblies and in the storage racks; Zircaloy and Inconel in the spent fuel assemblies; and Boral in the storage racks. Of these dissimilar materials, the stainless steel, Inconel, and Zircaloy have nearly identical electrolytic potential and therefore can be coupled without significant electrolytic or galvanic effects. There is a major difference in

¹³⁵ Applicant's Proprietary Ex. 6.

¹³⁶ Testimony of J. E. Draley (Draley) at p. 3 following Tr. 1290; Tr. 1261-1263.

electric potential between aluminum and stainless steel and therefore galvanic corrosion will occur between the aluminum cladding in the Boral and the stainless steel tubes which encapsulate the Boral. However, the stainless steel pool liner will not be affected by interaction with the Boral.¹³⁷ There appears to be no basis to expect that the Boral contained in the stainless steel tubes will contribute to degradation of the fuel assembly materials or the pool liner. This is true whether or not the racks are vented, because under the conditions and conductivities in the Zion spent fuel pool, galvanic corrosion requires direct contact.¹³⁸

Some galvanic corrosion between the Boral sheets and the stainless steel tubes within which they are enclosed will take place. Because stainless steel is electrochemically more noble than the aluminum and Boral sheets, such galvanic corrosion will not affect the stainless steel tubes, nor does it threaten the structural integrity of the racks.¹³⁹ Some pitting of the edges of the Boral plate and perhaps the 1100 aluminum cladding which forms the outside layer of the Boral where the electrical contact with the stainless steel tube is good can be expected. In neither of these two locations is the attack expected to be great enough to lead to serious loss of the neutron absorbing boron in the Boral or to cause corrosion product swelling of the Boral which would interfere with free movement of the spent fuel stored in the racks. The reason for this is that the corrosion will be self-limiting due to the formation of an insulating oxide film over the growing pit.¹⁴⁰

During an *in camera* session, Intervenor raised questions about several proprietary reports describing galvanic corrosion experiments conducted by Brooks and Perkins, Inc., the manufacturer of Boral, and by Battelle-Columbus Laboratories for Brooks and Perkins.¹⁴¹ These reports were provided by the Applicant to Intervenor during discovery. The Brooks and Perkins report contains a conclusion that maintaining a significant oxygen concentration in the water surrounding the Boral could lead to unacceptable corrosion behavior. Presumably on the basis of this research the Applicant changed its rack design so that the vent holes through the stainless steel tubes are located only at the top of the tubes, rather than at the top and the bottom. This limits the access of fresh oxygen-bearing pool water to the inside of the tubes. Applicant's witness testified that he did not agree with the Brooks and Perkins report that maintaining oxygen saturation would lead to results that would be unacceptable. However, he had no objection to the closing of the

¹³⁷ NRC Staff Testimony on Contentions 2(e)(3), 2(e)(4), 2(h), 2(i), 2(g), and 2(k) by Frank M. Almeter and Edward Lantz (Almeter and Lantz) at pp. 3-9 following Tr. 1141.

¹³⁸ Johnson at p. 6; Draley at p. 9; Tr. 1099, 1118, 1129-30.

¹³⁹ Draley at pp. 5-7; Almeter and Lantz at pp. 6-9; Johnson at p. 6.

¹⁴⁰ Draley at pp. 5-6; Tr. 1142-1144.

¹⁴¹ Intervenor's *In Camera* Exs. 1 and 2.

vents at the bottom of the tubes. The Battelle-Columbus report reflects experiments in which a high rate of galvanic attack of Boral in a concentrated boric acid solution was observed. The Applicant's witness testified that this experiment did not influence his testimony very strongly because the boric acid solution involved in the experiment was quite a bit more aggressive than the conditions in the Zion spent fuel pool. Therefore, the results in the Battelle-Columbus report do not apply to the Zion spent fuel pool.¹⁴²

Anodizing the aluminum cladding of the Boral probably would not reduce the amount of corrosion over the 40-year lifetime of the racks. The use of unanodized, rather than anodized, aluminum would lead to accelerated corrosion of the Boral during the first five days after the racks are first immersed in the pool water until a protective aluminum oxide layer is built up. At that point the accelerated corrosion will be over, and thereafter, there will be no significant corrosion.¹⁴³

Significant amounts of neutron-absorbing boron will not be lost from the Boral by corrosion. This is because the boron carbide(B_4C) particles are inert to the pool water environment and galvanic corrosion and remain embedded in any aluminum corrosion product. The amount of this corrosion product which flakes away will be very small.¹⁴⁴

There has been no evidence of pool-stored commercial water reactor fuel degradation to date from visual inspections, radiation monitoring of spent fuel pools, and detailed examinations of selected fuel rods. Unfortunately, visual inspections and radiation monitoring detect only advanced stages of cladding degradation. However, theoretical assessments conducted by an Applicant witness and by others have failed to identify a mechanism which is regarded as a substantial threat to fuel cladding integrity in pool storage. The witness testified that there is sufficient basis at this time to proceed with long term storage of spent fuel. However, he noted that surveillance should continue to be provided for the spent fuel over whatever time period the spent fuel will be stored.¹⁴⁵

Accelerated corrosion, micro-structural changes, alterations in mechanical properties, stress corrosion cracking, intergranular corrosion, and zirconium hydriding are not expected to occur to the extent that they would affect the fuel during storage up to 40 years. The corrosion rate of type 304 stainless steel, the type used in the fuel storage tubes, is expected to be negligible.¹⁴⁶

Swelling of unvented storage rack tubes, not involving the swelling of

¹⁴² Tr. *In Camera* 1342-1343, 1345-1349.

¹⁴³ Tr. 1202-1203, 1239-1240, 1250, 1319.

¹⁴⁴ Draley at pp. 7-9; Almeter and Lantz at pp. 7-8; Tr. 1250-52, 1358.

¹⁴⁵ Johnson at p. 10 and at pp. 167 and 171 of Attachment B; Tr. 1072-77, 1113-15, 1117.

¹⁴⁶ Draley at pp. 2-3, 10; Almeter and Lantz at pp. 8-12.

Boral, occurred at Monticello last year. This swelling is believed to have been caused by the accumulation of entrapped gas between the Boral and the stainless steel tube. The gas was a mixture of the air originally in the tube and hydrogen which may have been produced as a corrosion product when water leaked into the unvented Monticello tubes. This kind of swelling should not occur at Zion due to the use of vented racks which will allow gas to escape.¹⁴⁷

There are two processes which could lead to swelling of the Boral within the stainless steel tubes. First, if the Boral is porous, water could permeate into the core material. It would then be possible for the water to react with the aluminum at some internal place to produce hydrogen gas in quantities sufficient to expand the Boral forming an internal blister. This type of swelling should be self-limiting, since expansion of the blister should deform the piece enough to allow release of hydrogen pressure. Some swelling of this type has occurred in tests conducted by Exxon Nuclear Company, but the Boral samples used were not of the type of material used in the Zion racks. The Exxon samples differed in that they contained quantities of finer mesh boron carbide particles and areas of imperfect bonding within the Boral between the aluminum cladding and the B_4C /aluminum matrix. This type of swelling should not occur in the Zion racks where there will be good quality control.¹⁴⁸

The second type of Boral swelling which might occur would be related to local corrosion or pitting which might be induced by galvanic interaction between the aluminum in the Boral and the stainless steel tubes where the two plates are pressed together. The solid corrosion product has a greater volume than that of the metal, and local swelling could result. Using the density of the predominant aluminum corrosion product, Bayerite, the corrosion product could occupy a volume some 3.2 times that of the aluminum from which it is formed. Even if a Boral plate in a Zion storage tube corroded all the way through (cladding and core material), the maximum swelling produced by the corrosion product was calculated to be 0.234 inch, an amount which would not interfere with the movement of fuel within storage tubes.¹⁴⁹

Mechanical failure which might cause the Boral to fragment or break is not likely in view of the record of Boral products and in view of the record of the Boral cladding alloy, 1100 aluminum. Further, if mechanical defects should occur, the stainless steel tubing would keep the Boral largely in position. In addition, the Boral plates are not load-bearing elements of the racks. Only the mechanical strength of the stainless steel is relied on in the design of the racks, and the strength of this material will not significantly deteriorate over the life of the racks. The only other effect which could

¹⁴⁷ Draley at p. 13; Almeter and Lantz at pp. 12-13.

¹⁴⁸ Draley at pp. 11-12; Almeter and Lantz at p. 13; Tr. 1222-26.

¹⁴⁹ Draley at pp. 12-13; Tr. 1316-18.

possibly diminish Boral density in the spent fuel pool is radiation. However, the low levels of neutron flux in the pool will have no significant effect on the Boral in 40 years of full time use.¹⁵⁰

The surveillance program that the Applicant will use to ensure that unexpected damage to the Boral is not occurring will utilize eighteen small vented stainless steel coupons containing Boral specimens which will be stored in the pool. These coupons will be removed periodically, opened, and examined for corrosion damage. In addition, two full-size storage tubes will be exposed in the pool near stored fuel so as to reproduce the radiation condition as well as exposure to the pool water. These tubes will be examined periodically for visual signs of swelling and will be opened and examined for loss of boron if examination of the small coupons indicates a boron-10 content in the enclosed Boral specimen below 0.02gm/cm².

This surveillance program should adequately detect indications of corrosion damage involving possible loss of neutron absorber or swelling or other damage to the tubes in time to take necessary remedial action for the storage tubes in the pool. Corrosion reactions should be sufficiently slow that any damage that occurs will not endanger the safe and effective operation of the pool.¹⁵¹

On cross-examination by Intervenor, Applicant's witness testified that if the boron-10 content in the coupons fell below 0.02gm/cm² and the full length tube specimens also showed some damage, it would be possible, as a general matter, to remove spent fuel from the storage racks and inspect the tubes in the racks. There presently are no plans to monitor the generation of gas or corrosion products within the tubes being used to store fuel. He testified that in view of the Applicant's proposed surveillance program, this is not necessary. Similarly, there are no plans to measure the size of any corrosion products that might flake off within the tubes, or to monitor any accumulation of crud or corrosion products around the vent holes in the tubes. The witness stated that because the density of the corrosion product is greater than that of pool water, there is no force of which he is aware which would make them rise to go to the hole.¹⁵²

In response to further questioning by Intervenor, Applicant's witness reaffirmed that the small coupons and full length tubes used as samples in the surveillance program will simulate the behavior of the tubes in the racks adequately to be safe in the identification of any unexpected swelling or problem that occurs. Further, he testified that it is unnecessary to conduct more frequent examination of these samples than the present plan calls for; however, the present schedule could be changed if the Applicant elected to do

¹⁵⁰ Almeter and Lantz at pp. 15-16; Draley at pp. 13-14.

¹⁵¹ Draley at pp. 8-9 and at Attachment 5; Almeter and Lantz at pp. 2-3.

¹⁵² Draley at pp. 1307-1310; Tr. 1357-1359.

so. The Applicant has made a commitment to institute the surveillance program at the time it places the racks in the pool, although a delay of a few weeks would not be an undue risk of any kind.¹⁵³

Intervenor's witness questioned the Applicant's surveillance program because there are a small number of coupons to be used and because they may not be truly representative of the tubes to be used in the storage racks, due to the difference in size and because they may not necessarily be mounted in the worst-case environment. However, the witness indicated that at the time he prepared his written testimony that he was not aware of the fact that the Applicant's corrosion surveillance plan included the use of full length fuel storage tubes. The witness stated that specific acceptance criteria should be established in advance for judging the results of any tests performed on the samples. Nevertheless, he agreed that by observing corrosion, the Applicant would be a long way toward determining whether or not the ultimate criterion, that is, the neutron absorbing capability of the Boral, is being maintained.¹⁵⁴

Subsequent to the completion of the evidentiary hearing in this matter, the parties were served by the Staff with copies of a Board Notification—Pipe Cracks in Stagnant Borated Water Systems at PWRs. The Board Notification was dated August 14, 1979 and was signed by Darrell G. Eisenhut, Acting Director of the Division of Operating Reactors.

The Board Notification indicated that cracks have occurred in safety related type 304 stainless steel piping systems which contain stagnant borated water. Affected systems included the spent fuel pool cooling piping at another PWR. The cracking is apparently due to stress corrosion cracking caused by residual welding stresses at heat affected zones.

The Staff indicated that the cracking is not directly related to and does not stem from spent fuel pool modifications; substantial leaking from such cracked piping is not likely; necessary repairs can be readily made; and the safety significance of cracks in low pressure spent fuel cooling systems is nil.

However, following the evidentiary hearing, the record of this proceeding indicated that there is stainless steel in the spent fuel pool liner, the spent fuel assemblies, the spent fuel pool cooling system and the proposed fuel storage racks. The stainless steel would be exposed to oxygen-saturated, borated water in the spent fuel pool, if the proposed amendment is issued. Further, the evidentiary record indicated that the mechanical strength of the type 304 stainless steel in the proposed racks would be relied upon by the design of the

¹⁵³ Tr. 1312, 1320-1322.

¹⁵⁴ Testimony of Gregory C. Minor concerning Contentions 2(e), 2(f), 2(h), 2(j) and 4(a) (Minor) at pp. 2-3 following Tr. 1405; Tr. 1417-1728. On *voir dire* examination, Mr. Minor admitted that he is not an expert in the fields of corrosion or metallurgy (Tr. 1378-1379). Accordingly, the Board approved a motion to strike those portions of the written testimony which purported to express an expert opinion on those subjects (Tr. 1402-1403).

racks, and that stagnant water would exist within the vented tubes of the proposed fuel storage racks. The record was not clear as to the type of stainless steel in the liner, in the fuel assemblies or in the spent fuel pool cooling system. Further, the record was not clear as to the extent to which the water in the pool would be stagnant, or essentially stagnant, nor to the extent that the water is oxygenated.

Therefore, the Board directed the parties to provide affidavits as to the extent to which type 304 stainless steel will be present in the pool according to the proposed modification plan. Further, in light of the new information contained in the Board Notification, the affidavits were to address what effects, if any, would occur to the type 304 stainless steel as a result of being immersed in or in contact with the water in the spent fuel storage pool.¹⁵⁵

Following the granting of numerous motions for extensions of time, the affidavits were submitted by late December 1979. In a conference call on January 3, 1980, confirmed by written Order,¹⁵⁶ the Board indicated that there were two issues which the Board found were not addressed by all parties in their affidavits or, if addressed, were not done so in adequate depth. The parties were given until January 24, 1980 to submit additional affidavits.

The Board has considered the additional evidence provided by all the parties. Type 304 stainless steel does exist in the spent fuel pool as follows: in the 3/16" pool liner; in the spent fuel pool cooling system piping, heat exchangers, pumps and valves; in the top and bottom nozzle assemblies of the fuel assemblies; in the rod control cluster assemblies, burnable poison rod assemblies and the control rods; and in the present fuel storage racks. Further, the proposed fuel storage racks would be made of welded type 304 stainless steel sheet, bar and plate.¹⁵⁷

Stagnant water conditions can occur in the two loops of the spent fuel pool cooling system under conditions when a loop is isolated. Because there is no convective flow path within the spent fuel storage tube walls, water inside the stainless steel sheaths is expected to be stagnant. Forced flow from the spent fuel pool cooling system and convective flow from the heat from the spent fuel generally prevent the water in the spent fuel pool from becoming stagnant. However, there could be localized stagnant, or near stagnant, conditions in crevices or in narrow spaces between adjoining fuel tubes.¹⁵⁸ The spent fuel

¹⁵⁵ Memorandum and Order, September 14, 1979.

¹⁵⁶ Memorandum and Order, January 8, 1980.

¹⁵⁷ Affidavit of Tom R. Tramm at pp. 1-2, November 1979.

¹⁵⁸ Affidavit of Tom R. Tramm, November 1979 at pp. 3-5;

Affidavit of Tom R. Tramm, January 24, 1980 at pp. 1-5;

Affidavit of Roger Staehle, January 14, 1980 at p. 1;

Affidavit of Robert Neil Anderson, December 17, 1979 at p. 2;

Affidavit of Robert Anderson, January 23, 1980 at pp. 3-6;

Affidavit of John R. Weeks, December 7, 1979 at p. 2; Supplemental Affidavit of Edward Lantz, January 15, 1980 at pp. 1-3.

pool does contain oxygenated and borated water.¹⁵⁹

Intergranular stress corrosion cracking of stainless steel can occur if three conditions are present. These include an aggressive environment (e.g., stagnant, oxygenated borated water system; presence of contaminants such as chloride or fluoride); a condition of metallurgical sensitization susceptible to stress corrosion cracking; and high residual or imposed stresses. All three conditions must be present before cracking will occur.¹⁶⁰

The evidence indicates that an aggressive environment of stagnant, oxygenated, borated water may be present within the vented stainless steel sheaths of the spent fuel storage tubes, and possibly at other locations between tubes. The Applicant makes a commitment to monitor spent fuel pool water chemistry on a weekly basis for chloride and fluoride and indicates that chloride will be maintained below 1.0 ppm and fluoride will be maintained below 0.2 ppm.¹⁶¹

Visual and liquid penetrant examinations were made on one of the existing fuel storage racks in use in the spent fuel pool for approximately three years. No cracking or other defects were observed.¹⁶² Ultrasonic, dye-penetrant, and visual examinations were performed on the spent fuel pool cooling system. No evidence of stress corrosion cracking was observed.¹⁶³ Electrochemical Potentiokinetic Reactivation (EPR) tests were performed on representative weld locations of the Zion fuel storage racks at the manufacturers plant. These EPR tests for sensitization show that the values obtained for components of the Zion fuel storage racks are well within the range for safe behavior.¹⁶⁴ The carbon content of the type 304 stainless steel in the Zion spent fuel racks is below the level at which intergranular stress corrosion cracking has developed at low temperatures.^{164A}

The imposed loads to which the fuel racks are exposed are low and static and do not involve fatigue cycling or bending stresses associated with non-uniform heat-up and cool-down, as severe as those in a reactor. Pool

¹⁵⁹ Affidavit of Tramm, November 1979 at p. 1; Affidavit of Tramm, January 24, 1980 at p. 1; Affidavit of Anderson, January 23, 1980 at pp. 2-3; Supplemental Affidavit of Weeks, January 10, 1980 at p. 2.

¹⁶⁰ Affidavit of Staehle, November 16, 1979 at pp. 3-4.

Affidavit of Staehle, January 14, 1980 at p. 2.

¹⁶¹ Licensee's Response to Board's Memorandum and Order, November 16, 1979 at p. 2.

¹⁶² Affidavit of Thomas W. Lukens, October 17, 1979 at pp. 1-2.

¹⁶³ Affidavit of Robert Shannon, November 6, 1979 at pp. 1-3.

¹⁶⁴ Affidavit of Willis Lloyd Clarke, Jr., November 2, 1979;

Affidavit of Staehle, November 16, 1979 at pp. 8-9.

^{164A} Affidavit of Staehle, November 16, 1979, at pp. 2, 4-7.

Affidavit of Weeks, December 7, 1979, at pp. 1-3.

Supplemental Affidavit of Weeks, January 10, 1979, at p. 2.

Affidavit of Anderson, December 17, 1979, at p. 2.

Affidavit of Anderson, January 23, 1980, at p. 6.

temperature transients are not large as discussed earlier in this decision. The fuel storage racks are neither a pressure or containment boundary. Therefore, imposed stresses are not anticipated to be significant. Some residual stresses from welding and bending may be present, but should not be severe.^{164B} However, residual stresses from welding and fabrication cannot be ruled out entirely.

The Board finds that the aggressive environment of stagnant, oxygenated, borated water may occur in the Zion spent fuel pool in the presence of type 304 stainless steel. However, it is not expected that this environment will occur in the requisite combination with metallurgical sensitization and high stress in the proposed spent fuel racks.¹⁶⁵ Therefore, the Board finds that intergranular stress corrosion cracking is not likely to occur in the proposed fuel storage racks.¹⁶⁶

The Board questioned whether the Applicant's commitment to conduct a corrosion surveillance program should be formalized as a technical specification in view of the need to maintain the program over a long period of time. The Staff testified that it has no plans to impose a technical specification on this subject, but that it will record the Applicant's commitment to follow this surveillance program in the cover letter which will accompany the issuance of any license amendment issued in this case. Further, the NRC's Office of Inspection and Enforcement does keep track of licensee commitments so listed and can and does enforce them.¹⁶⁷ Following careful consideration of this issue, the Board finds that the corrosion surveillance program need not be made the subject of a technical specification or condition of license. The corrosion surveillance program is a prudent measure to employ, but it has not been shown to have an immediate bearing upon the public health and safety. Support for this position is found in the decision in the *Trojan* case.¹⁶⁸ In

^{164B} Affidavit of Staehle, November 16, 1979, at pp. 11-12.

Affidavit of Alfred Taboada, December 7, 1979, at pp. 1-2.

¹⁶⁵ The Board concentrated on the possible impact of intergranular stress corrosion cracking on the fuel storage racks, because of the possible effect on maintaining fuel subcriticality, if the racks were to fail. Although stagnant, oxygenated, borated water may occur in the spent fuel pool cooling system piping, the Board finds this not to be a major problem. As indicated earlier in this decision, the system is redundant, making repairs possible without interrupting normal cooling. No pipe break can result in draining of the pool. Further, recent ultrasonic, dye-penetrant, and visual examinations of the system revealed no evidence of intergranular stress corrosion cracking.

¹⁶⁶ The Applicant commits itself to supplementing its corrosion surveillance program by suspending ten specimens containing weld geometries and material similar to those in the fuel racks. The ten specimens are to be suspended adjacent to the proposed fuel racks and examined visually and ultrasonically on a yearly basis. Affidavit of Staehle, November 16, 1979 at p. 12; Licensee's Response to Board's Memorandum and Order, November 16, 1979 at p. 2.

¹⁶⁷ Tr. 1972-73, 1983-85.

¹⁶⁸ In the Matter of Portland General Electric Company (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, at 271, 277-278 (1979).

arriving at the instant decision, it is the Board's recommendation, however, that the Applicant should not be relieved of this commitment without careful review by the Staff based on the facts at that time.

The Board finds that the corrosion surveillance program committed to by the Applicant is adequate to detect the loss of neutron absorber material and/or swelling of the storage tubes.

The Board finds that the Applicant and Staff have analyzed the long-term electrolytic corrosion effects of using dissimilar alloys and that the anticipated effects are not expected to be significant.

The Board finds that the Applicant and Staff have analyzed the proposed modifications and long-term storage effects on the stored fuel of accelerated corrosion, micro-structural changes, alterations in mechanical properties, stress corrosion and hydrogen absorption and precipitation by the zirconium alloys. Further, the Board finds that based on these analyses the effects are not expected to be significant.

The Board finds that the Applicant and Staff have adequately analyzed the corrosion rate of the fuel storage tubes, the effect of water chemistry on the Boral and the possible swelling of the stainless steel tubes.

The Board finds that adequate consideration has been given to the possible degeneration of the Boral density on the fuel storage tubes. The Board finds that the corrosion surveillance program to which the Applicant has committed itself, is adequate to detect significant loss or shifting in location of Boral. Therefore, the Board finds that the risk of criticality in the spent fuel pool from this effect is negligible.

F. Quality Assurance

Contention 2(k) states:

The amendment request and supporting documentation do not consider possible degeneration of the Boral density due either to generic defects or to mechanical failure which would diminish the effectiveness of Boral as neutron absorber, thus leading to criticality in the spent fuel pool.

Contention 2(1) states:

The Applicant has not described the procedures it intends to employ to prevent the installation and use of damaged and defective racks.

The quality assurance and quality control procedures of Commonwealth Edison, Brooks and Perkins (fuel storage tube manufacturer) and Leckenby (fuel storage rack fabricator) were described. These are designed to prevent the installation of racks with insufficient Boral density or other defects into

the spent fuel pool.¹⁶⁹

The boron carbide and other materials used by Brooks and Perkins to manufacture the Boral plates are certified by the supplier to meet applicable ASTM¹⁷⁰ standards. The certification documents are traceable to specific lot numbers of the boron carbide and reviewed by Brooks and Perkins quality assurance personnel. As an additional check, a sample of each lot is sent to Isotopic Analysis, Inc. to verify the boron-10 content of the boron carbide powder by means of isotopic analysis. These steps are documented by Brooks and Perkins, and reviewed by Nuclear Services Corporation (NSC). Only upon a finding of adequate compliance with these procedures will NSC authorize use of the boron carbide powder for fabrication. The boron carbide is then used in the fabrication of Boral plates. A sample is taken from each end of the Boral plates and 10 percent of these samples are chemically analyzed for boron-10 loading by Brooks and Perkins.¹⁷¹

The Boral sample is dissolved, the boron carbide filtered out and then dried and weighed. Because the isotopic content of the boron carbide is known through previous isotopic analysis of each batch of boron carbide, the boron-10 loading of the sample can be calculated by measuring the weight of the boron carbide which was separated from the Boral plate. The precision of the test is 0.0003 grams per square centimeter of boron-10.¹⁷²

Brooks and Perkins then forwards the test results to NSC for review, and upon a finding by NSC that these procedures have been adequately complied with, the tubes are released to Leckenby for rack fabrication.¹⁷³

The Applicant has retained NSC to perform independent inspections of Brooks and Perkins' fabrication of the fuel storage tubes. NSC inspectors review Brooks and Perkins documentation on a random basis while on inspection visits. However, all documentation is required to be sent to NSC headquarters for review.¹⁷⁴

In addition to review by Brooks and Perkins and NSC quality assurance personnel, Commonwealth Edison performs independent reviews, inspections and audits of the tube manufacturing process to ensure that there is adequate density of boron-10 in the Boral plates. As of the date of the hearings, there had been three audits of Brooks and Perkins conducted by Commonwealth Edison quality assurance personnel.¹⁷⁵

¹⁶⁹ Testimony of Walter J. Shewski (Shewski) at pp. 1-10 following Tr. 707; Leider at pp. 10-12; NRC Staff Testimony on Contention 2(1) by Joel E. Kohler (Kohler) at pp. 1-4 following Tr. 786; Almeter and Lantz at pp. 13-15.

¹⁷⁰ American Society for Testing and Materials.

¹⁷¹ Shewski at pp. 5-7.

¹⁷² Tr. 1040, 1940-41.

¹⁷³ Shewski at pp. 6-8.

¹⁷⁴ Tr. 718-720.

¹⁷⁵ Tr. 720-723.

During the course of cross-examination, Intervenor introduced two letters pertaining to shipments from Brooks and Perkins to Leckenby of tubes which contained insufficient boron-10 content.¹⁷⁶ Applicant's witness confirmed that five nonconforming tubes had in fact been shipped to Leckenby, and that the boron content of those tubes was 0.0189, 0.0189, 0.0186, 0.0196, and 0.0182 gm/cm². The minimum required boron-10 concentration is specified as 0.0200 gm/cm². This deficiency was not discovered in the April audit of Brooks and Perkins (the nonconforming tubes had been shipped in March), but was discovered in the June audit by the Applicant. None of the defective tubes had been used in the fabrication of the racks, and each tube had been tagged as defective and isolated to insure it would not be used.¹⁷⁷

Intervenor pointed out during its cross-examination of Applicant's witness that the Applicant first ordered the Boral containing tubes for the new Zion racks in July 1978. The original purchase order did not specify that the fabrication of the tubes was "safety-related." Therefore, the Brooks and Perkins quality assurance program was not required to conform to 10 CFR Part 50, Appendix B. The Applicant subsequently determined that this was incorrect judgment on its part and in November 1978 required that the fabrication of the tubes be safety-related. Applicant has not required that the suppliers of the component parts of the tubes have quality assurance programs conforming to 10 CFR Part 50, Appendix B. However, material supplied to Brooks and Perkins has to be certified to meet ASTM requirements. Brooks and Perkins and NSC personnel review the documentation to verify that the materials meet the ASTM requirements prior to their use.¹⁷⁸

Prior to releasing the completed racks for shipment to Zion Station, NSC is required to review and accept Leckenby's quality assurance inspection and review. Upon receipt of the racks at Zion, the Applicant's on-site quality control and quality assurance personnel are required to perform a receipt inspection for shipment damage and other possible defects. Furthermore, quality assurance personnel will be required to review the documentation to assure compliance of the materials and fabrication requirements. Written procedures detailing these inspections were received in evidence as Applicant's Exhibit Number 1.¹⁷⁹

As part of the receipt inspection, a dummy fuel assembly built to exactly the same dimensions and tolerances as the fuel stored at Zion will be lowered into and raised out of each tube in the absorber rack. The Applicant will use a

¹⁷⁶ Intervenor's Exs. 2 and 3.

¹⁷⁷ Tr. 736, 740, 745-748, 755.

¹⁷⁸ Shewski at pp. 5-6; Tr. 737-739.

¹⁷⁹ Shewski at pp. 8-9; Tr. 1939.

20-pound drag criterion for determining the existence of a defect in the physical contours of any tube. Past experience shows that the 20-pound drag is the friction force that the dummy assembly will exhibit in being lifted and lowered into a rack.¹⁸⁰

Under questioning by the Board, Applicant's witness indicated that the effective multiplication factor (K-effective) for the proposed fuel storage configuration would not meet the Staff's criterion that it be less than 0.95 if one Boral plate out of sixteen (every four tubes) were missing. He indicated that this would also be true if only one out of thirty-two Boral plates were missing. The witness concluded that it is very important to know whether there are missing Boral plates in the racks before these racks are installed or utilized.¹⁸¹

After the racks are installed in the pool, but prior to placing spent fuel therein, neutron attenuation tests will be performed by National Nuclear Corporation to confirm that there is a Boral plate in each of the four walls of the individual tubes tested. The tests will not be performed on every tube. However, these tests will be statistically designed to prove within a 95 percent confidence level that the four plates are present in each tube. The test is capable of establishing within 20 percent accuracy the boron-10 loading of each plate with 100 percent confidence.¹⁸²

On cross-examination by Intervenor, Applicant's witness testified that even though the tests will be conducted while the tubes are immersed in a boric acid aqueous solution, this will not mask any deficiency in the Boral. This is because the test will be calibrated to take into account the boric acid concentration in the fuel pool water.¹⁸³ In response to Board questioning the Staff indicated that it will require a commitment on the part of the Applicant to conduct neutron attenuation tests which could assure with a 95 percent confidence level that the Boral plates are present such that a K-effective of 0.95 would not be exceeded.¹⁸⁴

In response to questioning by the Board, Applicant's witness stated that in the unlikely event it is discovered that a Boral plate is missing in any tube, the Applicant's commitment is to physically plug that tube to prevent the inadvertent insertion of a fuel assembly therein. Moreover, the Applicant will require that 100 percent of the remaining tubes be examined by means of neutron attenuation testing.¹⁸⁵

Throughout the receipt, inspection, installation of the racks and subse-

¹⁸⁰ Leider at pp. 11-12; Tr. 762.

¹⁸¹ Tr. 1726-1741.

¹⁸² Shewski at p. 9, Tr. 1942-1947, 2010.

¹⁸³ Tr. 1944, 1950.

¹⁸⁴ Tr. 1984, 1987-1990, 1993-1996.

¹⁸⁵ Tr. 1947-1948, 1950.

quent neutron attenuation testing, the Staff will conduct inspections and reviews to assure that only conforming racks are installed in the pool. The NRC Region III Office of Inspection and Enforcement plans to utilize additional construction inspections during the proposed rack installation. Furthermore, if it is determined that the Applicant is improperly installing or handling the racks, stop-work orders will be issued expeditiously.¹⁸⁶

During the course of cross-examination of the Applicant's witness on criticality, the Board inquired as to how much boron in the Boral could be lost before K-effective would reach a level of 0.95. In response, the witness stated that roughly 75 percent of the boron in each plate could be lost, without reaching 0.95. The witness explained that 0.95 is an arbitrary number specified by the NRC's Standard Review Plan to assure that a criticality event cannot take place. Any value of K-effective less than 1.0 would ensure maintaining sub-criticality. Further, the calculations do not take credit for fuel burn-up, fission product poisoning, borated fuel pool water, or presence of any control rods. However, they assume no plutonium-239 or 241 in the fuel.¹⁸⁷

Of particular concern to the Board is assurance that the boron-10 in the Boral plates will be in place and remain in place within the fuel storage tubes throughout the life of the station or throughout the use of the racks.

The Board finds that the quality assurance and quality control procedures described by the Applicant and Staff will ensure that the Boral will initially contain sufficient boron-10, and that the tubes and racks will be properly manufactured and installed in the pool.

The Applicant has made a commitment to conduct neutron attenuation tests, to examine 100 percent of the tubes if the neutron attenuation tests reveal one missing Boral plate and to physically plug any tube found which has less than the prescribed number of Boral plates, or to take whatever other remedial action prescribed at that time by the Staff. The Board finds that the *in situ* neutron attenuation test is a key aspect of the quality assurance program to verify that the tubes and racks as installed do indeed contain a sufficient number of Boral plates that K-effective will not be greater than 0.95 when the fuel is in place in the tubes.

The Board has already found that the corrosion surveillance program committed to by the Applicant is sufficient to detect significant loss or shifting in location of the Boral.

G. Board Questions

In the Order Following Prehearing Conference dated 19 January 1979, the Board propounded a set of six questions [4(a) through 4(f)] to each of the

¹⁸⁶ Tr. 798-799, 802-804.

¹⁸⁷ Tr. 1726, 1730-1731.

parties, with the request that evidentiary showings on each of the questions be made at the public hearing.

1. Risk of Theft and Sabotage

Board Question 4(a) states:

Will the proposed modifications of the spent fuel pool and/or the operation of the Zion station with increased spent fuel pool storage capacity:

- (1) increase the potential risk of threats to special nuclear material or to Station facilities?
- (2) increase the potential risk of theft of special nuclear material from the Station?
- (3) increase the potential risk of industrial sabotage to the Station or to the special nuclear material?
- (4) decrease the level of physical protection of the facilities or special nuclear material at the Station?

Board Question 4(b) states:

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?¹⁸⁸

During the course of cross-examination of Applicant's witness by Intervenor, a question arose concerning the interpretation of Question 4(a)(3). The Board stated that it had meant the parties to address only the likelihood or probability of industrial sabotage. The Board explained that it had not intended to direct the parties to explore the possible consequences of a successful act of sabotage.¹⁸⁹

The Applicant's Security Plan and Safeguards Contingency Plan were described in detail. Because the Zion security program is already designed to meet the general performance requirements of 10 CFR 73.55, there would be no increased risk to special nuclear material or to the Station as a result of on-site construction activities. Furthermore, because the same degree of protection applies to the Zion spent fuel pool regardless of the number of spent fuel assemblies stored therein, there would be no increased risk as a

¹⁸⁸ The portion of Board Question 4(b) pertaining to the Station Emergency Plan is discussed in the next section of this decision.

¹⁸⁹ Tr. 2023-2024.

result of the operation of the Station with increased spent fuel storage capacity.¹⁹⁰

The Commission's regulations pertaining to security do not require that licensees design their security programs to prevent theft of spent fuel. This is because the nature of spent fuel makes it an unattractive target for theft. However, the features of the Station Security Plan designed to prevent sabotage should be adequate to protect against the risk of theft.¹⁹¹

The modification and/or subsequent operation of Zion Station will not increase the potential risk of industrial sabotage to the Station or special nuclear material. The level of risk which the Applicant must protect against is defined in 10 CFR 73.55(a), and this defined risk is not changed by the proposed modification and/or subsequent operation. The risk defined in 73.55(a) is not dependent upon the number of stored fuel assemblies.¹⁹²

There will be no decrease in the level of physical protection, because the security program is designed to handle construction activities such as the proposed modification, and because the degree of physical protection relating to the spent fuel pool is independent of the number of fuel assemblies stored therein.

It will not be necessary to modify the Security Plan or Safeguards Contingency Plan because of the proposed modification and/or subsequent operation. The proposed modification will not permit the Applicant to store material different from that presently stored in the pool and the level of security protection required is independent of the quantity of irradiated fuel contained in the pool.¹⁹³

All company employees and contractors are subject to physical searches prior to entering a protected area. Each individual entering a protected area is screened by means of metal and explosive detection equipment. In addition, the Applicant's non-site assigned employees and contractors' employees are physically searched on a random basis. Applicant's regular Station employees are not physically searched.¹⁹⁴

The Board inquired as to whether the Applicant or the Staff had considered special nuclear material other than spent fuel (as intended by the Board) in preparing their written testimony. The witnesses responded that they had not previously considered material other than spent fuel, but that the conclusions stated in their prepared testimony were equally applicable to such material.¹⁹⁵

¹⁹⁰ Testimony of Larry B. Bean (Bean) at pp. 1-10 following Tr. 2019; NRC Staff Testimony on Board Questions 4(a) and 4(b) by Dean M. Kunihiro (Kunihiro) at p. 1 following Tr. 2036.

¹⁹¹ Bean at p. 11; Kunihiro at p. 2.

¹⁹² Bean at p. 11; Kunihiro at p. 2.

¹⁹³ Bean at p. 12; Kunihiro at pp. 2-3.

¹⁹⁴ Bean at p. 7; Tr. 2027-28.

¹⁹⁵ Tr. 2028-2030, 2038-2039.

The Board finds, based on the evidence presented, that the proposed modification and subsequent operation of Zion Station with increased spent fuel storage capacity will not increase the potential risk of threats, theft, or industrial sabotage to special nuclear material or to Station facilities. Further, the Board finds that there will not be a decrease in the level of physical protection of the facilities or special nuclear material at the Station and that there is no reason to modify the Safeguard Contingency Plan or Security Plan for the Zion Station. These findings are based, in large measure, upon our belief that the degree and type of physical protection afforded to the Station's protected areas is independent of the amount of spent fuel stored at the Station.

2. Modifications to the Emergency Plan

A portion of Board Question 4(b) pertains to whether it will be necessary to modify the Emergency Plan, as a result of the proposed modification and the proposed operation of the Station with increased spent fuel storage capacity.

A detailed explanation of the Applicant's Generating Station Emergency Plan (GSEP) was provided which included a description of the different emergency response classifications, the corporate emergency response structure and facilities, and a description of the Applicant's training and practice drills. The proposed modification or subsequent operation of the Station will not require a change to the GSEP, since the GSEP is designed to provide an appropriate response to a continuum of possible accidents and is not predicated upon a particular amount of nuclear fuel in use or in storage at the facility, or tied to specific accidents or equipment malfunctions.¹⁹⁶

The Board finds that there is no need to change the Applicant's Emergency Plan due to the proposed modification and subsequent operation of Zion Station with increased spent fuel storage capacity.

3. Changes in Accidents Postulated in Previous Licensing Reviews

Board Questions 4(c), 4(d), 4(e), and 4(f) state:

- (c) What postulated accidents, which might affect the safety of plant operating personnel in the spent fuel storage building or which might result in the release of radiation or radioactive materials from the spent fuel storage building, were specifically analyzed in the FSAR, SER, ER, and FES utilized in the CP and OL licensing

¹⁹⁶ Testimony of Denton Louis Peoples (Peoples) at pp. 1-15 following Tr. 2044; Supplemental testimony of John R. Sears on Board Question 4(b) Emergency Planning (Sears) at p. 3 following Tr. 2053.

reviews of Zion Units 1 and 2?

- (d) Which, if any, of the postulated accidents in (c), above, will be increased in probability, magnitude or consequence (to personnel, to the general public or to the environment) if the proposed spent fuel pool modifications are carried out?
- (e) What provisions have been made or procedures developed to protect the workmen and/or plant personnel from the consequences of such postulated accidents during the period when the proposed spent fuel pool modifications are being performed?
- (f) Which, if any, of the postulated accidents in (c), above, will be increased in probability, magnitude or consequence (to personnel, to the general public or to the environment) as a result of the completion of the proposed spent fuel pool modifications and the proposed subsequent usage of the increased spent fuel storage capacity.

Nine postulated accidents were specifically analyzed in the FSAR, SER, ER, and FES utilized in the CP and OL licensing reviews of Zion Station Units 1 and 2 which might affect the safety of plant operating personnel in the spent fuel storage building or which might result in the release of radiation or radioactive materials from the spent fuel storage building. These are (1) the fuel handling accident; (2) accidents resulting from earthquakes; (3) tornado related accidents; (4) spent fuel cask drop accidents; (5) spent fuel pool cooling system malfunction; (6) malfunctions in other parts of the plant; (7) loss of AC power; (8) leakage of radioactive fluids; and (9) drop of a heavy object onto a fuel rack.¹⁹⁷

The proposed modification will necessitate additional fuel moves. Therefore, the likelihood, and corresponding risk of a fuel drop accident will increase slightly. However, the incremental risk will be minimal since the number of fuel moves necessary to accomplish the modification will add less than one percent to the total number of fuel moves which will be accomplished during the Station's lifetime. The fuel which will be moved during the modification will have decayed at least one month prior to being moved, which will decrease the magnitude or consequences of the postulated fuel handling accident by a factor of ten compared to freshly discharged fuel because of significant radioactive decay of the gaseous fission products contained in the fuel.¹⁹⁸

The Staff has under way a generic review of load handling operations in the vicinity of spent fuel pools to determine the likelihood of a heavy load

¹⁹⁷ Tramm at pp. 25-31; NRC Staff Testimony in Response to Board Questions 4(c), 4(d), and 4(f) by Jack Donohew and John J. Zudans (Donohew and Zudans) at p. 2 following Tr. 1999.

¹⁹⁸ Tramm at p. 27; Donohew and Zudans at p. 3.

impacting fuel in the pool and, if necessary, the radiological consequences of such an event. Until a review of the radiological consequences of a cask drop accident is completed, a shipping cask will not be permitted near the pool.¹⁹⁹

There will be no significant increased risk to personnel, the general public or the environment from the remaining accidents considered as a result of the modification and/or operation of the Zion Station with subsequent increased spent fuel storage capacity.²⁰⁰

The Zion Station Emergency Operation Procedure Number 6 (EOP-6) outlines the actions required in the event a fuel assembly is damaged or specific monitors indicate high radiation levels in the spent fuel pool area.²⁰¹

The Board finds that EOP-6 actions would adequately protect workmen and/or plant personnel from the consequences of postulated accidents during the period when the proposed spent fuel pool modifications are being performed.

The Board finds that the risks associated with a fuel handling accident during the period of the proposed fuel pool modifications will be less than those considered at the operating license stage. The Applicant will not receive permission to utilize a shipping cask within the vicinity of the spent fuel pool until such time as the Staff has completed its review and evaluation of the potential radiological consequences of a shipping cask falling into the pool. Therefore, the proposed modification does not alter the risk of a cask drop accident. The Board finds that there is no reasonable basis for believing that the risks of the other postulated accidents identified in response to Question 4(c) would be increased significantly as a result of the modification and/or subsequent operation of Zion Station.

4. Design and/or Engineered Safeguards to Decrease Likelihood of Severe Pool Drainage Accident

In addition to the questions posed by the Board following the Prehearing Conference, the Board posed five additional questions to the parties during the evidentiary hearing following the limited appearance statements.²⁰²

Board Question 4(g) states:

The Applicant and Staff are asked to describe any design and/or engineered safety features incorporated in the Zion spent fuel storage

¹⁹⁹ Donohew and Zudans at p. 7.

²⁰⁰ Tramm at pp. 25-33; Donohew and Zudans at pp. 2-9.

²⁰¹ Leider at pp. 12-13 and Attachment A; NRC Staff Testimony on Board Question 4(e) by Joel E. Kohler (Kohler) at pp. 1-2 following Tr. 2000.

²⁰² Tr. 574-577.

pool to decrease the likelihood of a severe pool drainage accident.

The spent fuel pool, including the pool cooling system is designed as a Seismic Class I structure. The foundation of the pool is directly in the ground and is completely surrounded by earth. The pool is lined with 3/16ths inch welded stainless steel and is provided with leak channels embedded in the concrete to collect and carry off to the rad-waste system any water which should leak through the liner. Additionally, the bottom of the pool is reinforced in the shipping cask loading area to withstand a drop of a cask. Fuel casks are handled with a Seismic Class I designed overhead crane which is interlocked to prevent the carrying of a cask over the fuel in storage in the pool. Fuel assemblies are handled with a Seismic Class I designed bridge crane which travels above the pool. The fuel pool building is also a Seismic Class I design, to withstand tornado loadings and tornado driven missiles.

The walls of the spent fuel pool are approximately six feet thick concrete and the floor of the pool varies in thickness from three and one-half feet to nine feet. Furthermore, the base mat for the pool is about seven feet thick. The exterior of the concrete walls and floor is covered by a protective waterproof coating. The massive failure of the spent fuel pool structure is not considered to be a credible event.²⁰³

The normal supply of makeup water for the spent fuel pool is from the demineralized flushing water system which can add water at about 200 gallons per minute. Also, water could be added directly to the spent fuel cooling system loops from the refueling water storage tank through permanently installed piping. Approximately 100 to 250 gallons per minute could be supplied in this manner. Further, fire hoses which exist in the spent fuel pool area and the auxiliary building are connected to electric and diesel fire pumps in the Seismic Category I crib house structure. This system could be used to supply at least 1,000 gallons per minute to the pool. In addition to these three sources of water which are permanently installed, hoses could be hooked up to draw water from the primary water storage tank, the secondary water storage tank, and the service water supply system. Of these the service water system is a Seismic Category I source of water which has its own independent pumps.²⁰⁴

The Board finds that there are adequate design and engineered safety features incorporated into the Zion Station spent fuel pool which would reduce the likelihood of a severe pool drainage accident. The Board finds that these features should preclude the possibility of a severe drainage accident in the Zion Station fuel pool.

²⁰³ Tr. 1028-30, 1035-36, 1854-56, 1865.

²⁰⁴ Tr. 1032-35.

5. Pool Liner Leak

Board Question 4(h) states:

The Applicant and Staff are asked to provide a history of the apparent leak in the liner of the spent fuel pool. Specifically, the following should be addressed:

- (1) Has the leak intensified with time?
- (2) What is being done with the water leaking from the pool?
- (3) Are there any technical specifications which limit the permitted leakage rate?
- (4) Why has the leak not been repaired?
- (5) How will possible future leaks be located and repaired if the proposed increase in storage capacity is permitted?

When the Zion fuel pool was originally tested, several leaks in the vertical welds of the stainless steel liner were discovered which were subsequently repaired. The Applicant established a maximum permissible leakage rate of 50 gallons per day. Since the commencement of operation of Zion Station in 1973, the amount of make up water put into the pool has been a constant 20 gallons per day. This make up rate represents the amount of water lost through evaporation, water removed from the pool during changing of filter and demineralizer bed, transfer of the bed from pool cooling to refueling water storage tank cleaning, as well as leakage through the liner. Most of the water loss appears to be through evaporation. During the first week of the hearings, a three day sampling test was conducted and it was determined that the water so collected from the fuel pool was approximately a quart a day. The leakage goes through the leak-off lines into the drain collection tank and is handled as normal radwaste water. There are no technical specifications which limit the permitted leakage rate from the spent fuel pool²⁰⁵

State of the art leakage detection devices can locate a 0.005 gallon per minute leak. Such a leak would result in an excess of seven gallons per day total leakage. Therefore, it is difficult to locate a leak such as the Zion fuel pool leak.

There are several methods by which possible future leaks could be located and repaired if the proposed increase in storage capacity is permitted. First, the Applicant could attempt to eliminate other possible leakage pathways. This would entail the checking of drains, pumps, seals, valves, and heat exchangers. Secondly, in order to eliminate leakage pathways from the top of the pool liner, the water level of the pool could be decreased somewhat without endangering workers in the fuel pool area. If the leak had still not been located, a diver could be sent into the pool to inspect the seam welds in

²⁰⁵ Tr. 588, 1921-22, 1926-29.

the liner by means of a vacuum box. This might necessitate the shuffling of fuel and/or the removal of racks to permit sufficient clearance for inspection by the diver. If reshuffling were not possible because of the amount of fuel stored in the pool, fuel could be temporarily stored in shipping casks or in the containment cavity. Once located, the liner could be welded as it was following the preoperational testing of the spent fuel pool.²⁰⁶

The Board finds that the amount of water that is currently leaking from the Zion spent fuel pool is negligible and does not represent a significant safety or environmental concern.

6. Component Cooling System Leak

Board Question 4(i) states:

The Applicant and Staff are asked to address the contention made during limited appearance statements that the component cooling system has had a number of leaks which have not been repaired.

The component cooling system consists of pumps, valves, piping, and heat exchangers. By design, some of these components leak water at a rate of about 0.2 gallons per minute through seals in rotating components such as pumps and valves. Leakage is detected by level changes in the component cooling system surge tank which is alarmed in the control room.

Early in 1978, Zion Station operating personnel noted that the leak rate had increased to approximately 0.4 gallons per minute. The leak was traced to one of three heat exchangers in the component cooling system. Due to difficulties in procuring the gaskets necessary to reassemble this heat exchanger, plant personnel did not repair the leak during the spring 1979 refueling outage as originally planned. The Applicant noted that it planned to perform this maintenance operation during the fall 1979 outage.

Water which leaks from the component cooling system flows to the service water system. The component cooling system is monitored for radioactivity, and no radioactivity has been detected in that system. Even if the leakage rate were to increase, there would be no impairment in the ability of the plant to continue operation or to shut down.²⁰⁷

On one occasion during the prior year or two, some boric acid had apparently leaked onto the component cooling system pumps from boric acid tanks located on the floor above. This did not affect the operability of the pumps and was subsequently cleaned up and maintained in a clean condition.²⁰⁸

²⁰⁶ Tr. 1923-25, 1928-29, 1993.

²⁰⁷ Tr. 1037-40.

²⁰⁸ Tr. 805-09.

The Board finds that the component cooling system leak does not represent a threat to the proper functioning of the system, and thus is not an unresolved safety question which might affect the operation of the spent fuel pool cooling system.

7. Increased Fuel Burnup Tests

Board Question 4(j) states:

The Applicant and Staff are asked to report on the increased fuel burnup tests from the standpoint of the extent to which these subsequent spent fuel assemblies have been considered in the various analyses performed as part of this proceeding.

On March 7, 1979, the Applicant was granted permission to subject four fuel assemblies to additional burnup in the Zion reactor. In studies which had been conducted with respect to fuel which had been exposed to a burnup of 58,000 megawatt-days per metric ton peak rod average burnups, no unusual or unexpected changes in the properties of Zircaloy had been observed. Therefore, the fuel in question at Zion, which will be exposed to between 48,000 and 55,000 megawatt-days per metric ton burnup (bundle average), should not behave differently than the fuel which was the subject of the earlier studies in terms of the effects on the Zircaloy cladding.²⁰⁹

Because of U-235 depletion, the decay heat associated with the high burnup fuel will be approximately 9 percent lower for the first year of storage than fuel subject to normal burnup. After about one year of storage the high burnup assemblies will have a slightly higher decay heat rate than normal burnup fuel stored for an equivalent length of time because of longer lived isotopes present. However, on balance the decay heat from high burnup assemblies will be lower than that from normal burnup fuel.

Approximately 25 percent more longer-lived isotopes can be expected in the high burnup fuel assemblies than in normal burnup fuel. However, the more volatile fission products have shorter half-lives, in general. Therefore, the consequences of a drop accident involving a higher burnup assembly would be lower for high burnup fuel because of lower power densities due to U-235 depletion. Therefore, the probability of a radioactive release from leaking high burnup assemblies would be lower than for normal assemblies.²¹⁰

The Board finds that the increased fuel burnup tests being conducted at the Zion Station do not increase the heat load on the spent fuel pool cooling system and do not increase the risks of radioactive releases from leaking fuel

²⁰⁹ Tr. 1276-80, 1802-07.

²¹⁰ Tr. 1789-91, 1795-99.

or from a fuel assembly drop accident in comparison to the conditions already considered as part of the amendment request.

8. Fuel Building and Groundwater Monitoring

Contention 2(e) states:

The amendment request and supporting documentation do not adequately discuss monitoring procedures. In the light of the proposed modification and long term storage of nuclear spent fuel the Applicant should clarify the following [*inter alia*]:

- (5) Procedures to monitor groundwater movement in the vicinity of the plant to detect leakage from the spent fuel pool.

Although the parties sought to withdraw this contention, the Board stated that it would like to hear evidence on this issue and directed the parties to consider this contention as a Board question.²¹¹ Applicant's witness discussed groundwater monitoring at the Zion Station.²¹²

Applicant's radiological monitoring program was planned to serve two objectives:

to determine background concentrations of radioactive materials in the Zion environment prior to plant startup (preoperational studies), and subsequently to determine the radiological effects of plant operations on the environment (operational studies).^{212a}

Included in the initial monitoring program were several groundwater samples and a sample of lakewater off State Park Lodge.²¹³

Applicant's witness testified that the routine environmental program for monitoring groundwater was conducted from 1970-1977 and consisted of monitoring three wells to the west of the site, with quarterly grab samples analyzed for gross alpha and gross beta activity.²¹⁴ Applicant's witness further stated that, at his suggestion,²¹⁵ Applicant "made a formal submittal to the NRC, requesting a change in the technical specifications," in part "to do away with the well water monitoring program."²¹⁶ The change also eliminated the collection of lakewater from the Lodge area.²¹⁷ Rationale for the change in

²¹¹ Tr. 730.

²¹² Tr. 1005-1027.

^{212a} Final Environmental Statement Related to Operation of Zion Power Station, Units 1 and 2, Commonwealth Edison Company, Docket Nos. 50-295, 50-304, December 1972 (FES).

²¹³ *Id.*, at V-33 and V-34; Final Safety Analysis Report Section 2.8, Table 2.8.1.

²¹⁴ Tr. 1008.

²¹⁵ Tr. 1008.

²¹⁶ Tr. 1009.

²¹⁷ Tr. 1012.

technical specifications, which was implemented in November 1977, was that “the only wells that we had available to us were on the west side of the plant and groundwater in this area moves eastward” and “second, that there is no discharge to the groundwater from Zion Station or, really to my knowledge, from any other nuclear station.”²¹⁸ Not surprisingly, the “upgradient” samples that were taken between 1970-1977 failed to show any unusual level of radioactivity.²¹⁹ Applicant’s witness admitted that this program would not be capable of detecting any leakage from the plant into the surrounding groundwater.²²⁰ The existing monitoring program for detecting release of liquid radioactive effluents into the environment consists of sampling at the Station intake (2500 feet out into the lake), the Station discharges (700 feet out from shore), and six public water intakes, the closest being about a mile north of the plant.²²¹ There are no groundwater monitoring wells on the Zion Station site itself, either upgradient or downgradient of the Station.²²² Applicant’s position is that the purpose of any groundwater monitoring would be to detect contamination of existing potable water supplies, rather than monitoring for possible contamination of groundwater from site activities.²²³

The Board finds that the issue of groundwater monitoring involves matters beyond the scope of this proceeding which is limited to matters related to potential impact of increasing the storage capacity of the spent fuel pool. We are not authorized to examine matters which were explored at the construction permit or operating stages, nor those which were resolved with subsequent amendments to the technical specifications.

However, the Board calls attention to certain unusual features of the Zion Station. Zion Station is uniquely situated in that its 250-acre site is within the city limits of the City of Zion, fronts on Lake Michigan, and is adjacent to a major park, Illinois Beach State Park, attracting over one million visitors per year.²²⁴ The residential area of Zion is less than a mile from the site. The residential center of Zion is approximately 1.5 miles from the site.²²⁵ The area is underlain by creviced dolomitic bedrock aquifers and water-yielding glacial deposits which are connected hydrologically; the geological structure is such that prevailing groundwater flow should be eastward (toward Lake Michigan).²²⁶ The shoreline in the immediate vicinity features the only dunes

²¹⁸ Tr. 1009; Tr. 1011.

²¹⁹ Tr. 1010-1011.

²²⁰ Tr. 1011.

²²¹ Tr. 1012.

²²² Tr. 1013.

²²³ Tr. 1016; Tr. 1017.

²²⁴ FES at II-10.

²²⁵ FES at II-3.

²²⁶ FES at II-5 and II-8.

in the state, "such a unique and special feature that the State of Illinois has set aside a 3-mile tract of shoreline and adjacent territory as a state park."²²⁷

The Board further calls attention to the fact that the radiological monitoring system has never included groundwater monitoring in the immediate vicinity of the site and at the present time includes no groundwater monitoring at all. While the Board finds that the proposed modification will not in itself increase the environmental impact of the Station, we find no basis for determining whether the present SFP or the Station as a whole has had any effect on the groundwater in the vicinity. We further note that a current Regulatory Guide points out the importance of groundwater monitoring in the vicinity of spent fuel storage pools.²²⁸

III. CONCLUSIONS OF LAW

The Board has reviewed the evidence submitted by all parties in regard to Intervenor's contentions, and in response to the Board's own questions. The Board has also considered the proposed findings of fact and conclusions of law submitted by the parties. Those proposed findings of fact and conclusions of law not adopted herein by the Board are rejected. The Board makes the following conclusions of law:

(1) The issuance of the license amendment requested in this proceeding is not a major Commission action significantly affecting the quality of the human environment and therefore it does not require the preparation of an environmental impact statement under the National Environmental Policy Act of 1969, 42 U.S.C. section 4321, *et seq.*, and Part 51 of the Commission's regulations, 10 CFR Part 51.

(2) The Commission's "Notice of Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Reactor Fuel," 40 *Fed. Reg.* 42801 (September 16, 1975), does not prohibit nonemergency licensing actions designed to ameliorate a possible shortage of spent fuel storage capacity prior to completion of the Generic Environmental Impact Statement. *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979). The Board has applied the five factors mentioned in the Commission's Notice of Intent and concludes that they favor issuance of the requested license amendment at this time.

(3) The Board finds that the proposed action will not significantly affect

²²⁷ FES at II-9.

²²⁸ Regulatory Guide 3.44, "Standard Format and Content for the Safety Analysis Report to be Included in a License Application for the Storage of Spent Fuels in an Independent Spent Fuel Storage Installation (Water-Basin Type)," December 1978, Section 2.5.

the human environment. It therefore finds that it is not required by law to consider the alternatives of shutting down or curtailing the output of Zion Station.

(4) There is reasonable assurance that the activities authorized by the requested operating license amendments can be conducted without endangering the health and safety of the public provided that the conditions set forth in the order, below, are incorporated into the licenses.

(5) The activities authorized by the requested operating license amendments will be subject to compliance with the Commission's regulations.

(6) The issuance of the requested operating license amendments will not be inimicable to the common defense and security or to the health and safety of the public provided there is compliance with the conditions set forth in the order below.

IV ORDER

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 Zion Station.

The aforementioned license amendment shall contain the following conditions:

(1) Fuel stored in the spent fuel pool shall have a U-235 loading less than or equal to 40.6 grams per axial centimeter.

(2) No loads heavier than the weight of a single spent fuel assembly plus the tool for moving that assembly shall be carried over fuel stored in the spent fuel pool. The spent fuel handling tool, the burnable poison tool, the rod cluster control changing fixture and the thimble plug shall not be carried at heights greater than two feet over fuel stored in the spent fuel pool.

The aforementioned license amendment takes into consideration the following commitments by the Applicant:

(1) Notification of the NRC in advance should it become necessary to handle heavy loads in the vicinity of the spent fuel storage pool.²²⁹

(2) A corrosion surveillance program for the racks to insure that any

²²⁹ *Supra*, p. 257.

loss of neutron absorber material and/or swelling of the storage tubes is detected.²³⁰

(3) *In situ* neutron attenuation tests to verify that tubes and racks contain a sufficient number of Boral plates such that K-effective will not be greater than 0.95 when the spent fuel is in place.²³¹

The Board finds that these commitments by the Applicant add to the assurance of safe operation of the Spent Fuel Pool, and therefore they contribute to the Board's conclusion that the application to modify the Zion spent fuel pool should be granted. Accordingly, the Board finds as a matter of law that the Applicant is bound by these commitments and that failure to implement them is subject to any appropriate sanctions found in the Commission's regulations.

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 immediately²³² 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 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

Linda W. Little, Member

Forrest J. Remick, Member

John F. Wolf, Chairman

Dated at Bethesda, Maryland,
this 14th day of February, 1980.

²³⁰ *Supra*, p. 277.

²³¹ *Supra*, p. 283.

²³² This proceeding is not covered by the Commission's recent suspension of the immediate effectiveness rule (10 CFR 2.764) for certain purposes. 44 Fed. Reg. 65049 (November 9, 1979).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

**Ivan W. Smith, Chairman
Dr. Walter H. Jordan
Dr. Linda W. Little**

In the Matter of

Docket No. 50-289

METROPOLITAN EDISON COMPANY

(Restart)

**(Three Mile Island Nuclear
Station, Unit 1)**

February 22, 1980

Responding to the direction of the Commission that the Licensing Board certify to it, prior to issuance by the Board of a prehearing conference order pursuant to 10 CFR 2.752(c), any contentions raised by the parties relating to issues such as psychological distress arising from the impacts of the TMI-2 accident, the Licensing Board refers to the Commission the various contentions raised and the briefs submitted by the parties on the matter. In its certification, the Board concludes that the Commission, within its discretion, may and should consider psychological stress and community fears under NEPA for the purpose of mitigating the effects of its TMI-1 licensing activity.

**CERTIFICATION TO THE COMMISSION
ON PSYCHOLOGICAL DISTRESS ISSUES**

I. Background

In its Order and Notice of Hearing dated August 9, 1979 the Commission stated that it had been unable to determine whether issues such as psychological distress arising from the impacts of the TMI 2 accident can be relevant to this proceeding. Parties wishing to raise such issues were invited to brief these issues to the Licensing Board under the Atomic Energy Act and National Environmental Policy Act. The Board was directed to certify the matter of the Commission, "... either with or without its recommendation on such issues ..." before the Board's prehearing conference order pursuant to 10 CFR 2.752(c). The Commission also stated that it would consider whether it can or should grant financial assistance to parties seeking to raise these issues.

10 NRC 141, 148. *Federal Register* 47821, 47824, August 15, 1979.

The board provided for the filing of psychological stress contentions and briefs and we requested preliminary plans for the presentation of evidence on psychological issues.¹ Subsequently seven intervenors filed psychological stress contentions.² The Commonwealth of Pennsylvania and four intervenors filed briefs favoring psychological stress issues³ and two intervenors filed preliminary plans for the presentation of psychological stress evidence.⁴ The licensee and the staff each filed briefs opposing issues of psychological stress.⁵ PANE filed a brief in reply to the briefs of licensee and staff and filed a request for financial assistance to support intervention on psychological issues.⁶ All of the relevant contentions and briefs by the parties are appended. The briefs of the Commonwealth, PANE, licensee and staff are extensive and together they present a reasonably thorough discussion of the issues. In our view they include the points made by intervenors Newberry, TMIA, and Mr. Sholly whose briefs were short and rather summary.

II. Summary of Certification

In this certification the board directly refers the briefs of the parties to the Commission. We do not brief again the issues; our discussion is limited to areas where we believe the briefing by the parties fell short of a complete discussion of the relevant considerations. We also make a recommendation and some observations about this particular proceeding. The staff's brief is a well-organized and reasoned presentation. Although we disagree with some of

¹ Memorandum and Order Ruling on Petitions and Setting Special Prehearing Conference, September 21, 1979, pp. 23, 24. Subsequently two intervenors objected to the request for a preliminary plan for psychological evidence. The Board removed any deadline for the filing of preliminary evidence plans, explained that it was an invitation to the parties, not an order, and we explained the purpose of the request. Memorandum and Order on Motions to Modify, October 16, 1979.

² People Against Nuclear Energy (PANE) Contentions Nos. 1 and 2; Newberry Township TMI Steering Committee, *et al.* (Newberry Intervenors) Contentions Nos. 1 and 2; Three Mile Island Alert, Inc. (TMIA) Contentions Nos. 3 and 8; Environmental Coalition on Nuclear Power (ECNP) Contention No. 6; Chesapeake Energy Alliance (CEA) Contention No. 4; Steven Sholly Contention No. 12; Aamodts Contention No. 9.

³ Commonwealth's brief, October 4, 1979, PANE's main brief, October 22, 1979, Newberry Intervenors' brief, October 19, 1979. In addition, TMIA's petition to intervene, September 12, 1979, p. 7, and Mr. Sholly's Supplement to petition to intervene, pp. 38-40, October 22, 1979 contain arguments on the issue.

⁴ Newberry Intervenors' preliminary plan, October 22, 1979. PANE preliminary plan, November 2, 1979.

⁵ Staff brief, October 31, 1979, Licensee opposition brief, October 31, 1979.

⁶ PANE's reply brief, November 7, 1979, PANE's request for financial assistance, November 29, 1979. In addition, on February 1, 1980, PANE filed a request for an expedited decision on its request for financial assistance.

the staff's conclusions, we have used it as the foundation for our comments.

Below we state that psychological stress is probably not cognizable under the Atomic Energy Act but that the Commission might conclude to the contrary for reasons not discussed by the parties. We believe that NEPA permits the NRC to consider community fears. We recommend that we be permitted to include such issues in this proceeding for the purpose of directly reducing the causes of psychological stress; for example, by improving the dissemination of accurate and trusted information. We do not make a recommendation that psychological stress be factored into a full cost/benefit balancing in an Environmental Impact Statement (EIS) because *inter alia* we can identify no basis to believe that it can be done in this case. We were not invited to make a recommendation on intervenor funding, and we make none. However, we comment briefly on the possible use of intervenor funding in this proceeding.

III. Psychological Stress Under the Atomic Energy Act

PANE is the only intervenor to argue that psychological stress is a consideration of "public health and safety" within the purview of the Atomic Energy Act (PANE's main brief, pp. 3-7; reply brief, pp. 3-5). Staff and Licensee each argue that the Act does not encompass any consideration of public health other than health relating to radiation hazards (Staff brief, pp. 3-8; licensee brief, pp. 3-10). The parties discuss *State of New Hampshire v. Atomic Energy Commission*, 406 F. 2d 170 (1st Cir. 1969), *cert. denied*. 395 US 962 (1969) and *Consolidated Edison Company of New York* (Indian Point, Unit 1) 3 AEC 62 (1965). These cases held that the possible effects of water heated by radiation were not hazards included in the Commission's responsibility to protect the health and safety of the public. The legislative history cited by the staff and licensee also support the view that only radiation hazards are to be considered under the Act. We can identify no law to the contrary.

However, the discussion is incomplete without the observation that, in this case, the intervenors are asserting that radiological hazards associated with accident conditions are affecting mental health. This is to be compared to pollution effects deriving from water heated by radiation in normal operation. This is a case of first impression not specifically addressed by the cited legislative history nor in *New Hampshire* or *Consolidated Edison, supra*. As such, the Commission's judgment as to whether the alleged health effects fall within the Atomic Energy Act would be entitled to deference. This was the view of the First Circuit in *Public Service Company of New Hampshire v. NRC*, 582 F. 2d 77 (1978), where the court held:

In a regulatory scheme where substantial discretion is lodged with the administrative agency charged with its effectuation, it is to be expected

that the agency will fill in the interstices left vacant by Congress. See *Phillips Petroleum Company v. Wisconsin*, 347 U.S. 672, 74 S.Ct. 794, 98 L.Ed. 1035 (1954); *Henry v. FPC*, 168 U.S. App. D.C. 137, 144, 513 F.2d 395, 402 (1975). The Atomic Energy Act of 1954 is hallmarked by the amount of discretion granted the Commission in working to achieve the statute's ends. The Act's regulatory scheme "is virtually unique in the degree to which broad responsibility is reposed in the administering agency, free of close prescription in its charter as to how it shall proceed in achieving the statutory objective." *Siegel v. AEC*, 130 U.S. App. D.C. 307, 312, 400 F.2d 778, 783 (1968). The agency's interpretation of what is properly within its jurisdictional scope is entitled to great deference, *Power Reactor Company v. Electricians*, 367 U.S. 396, 408, 81 S.Ct. 1529, 6 L.Ed.2d 924 (1961); *Nader v. NRC*, 168 U.S. App. D.C. 255, 265-66, 513 F.2d 1045, 1055-56 (1975), and will not be overturned if reasonably related to the language and purposes of the statute. *Hardin v. Kentucky Utilities Company*, 390 U.S. 1, 8, 88 S.Ct. 651, 19 L.Ed.2d 787 (1968); *NLRB v. Hearst Publication*, 322 U.S. 111, 131, 64 S.Ct. 851, 88 L.Ed. 1170 (1944); *Bangor and Aroostock Railway Company v. ICC*, 574 F.2d 1096, 1104 n.8 (1st Cir. 1978).

Id. p. 82.

In *Public Service Company* (a phase of the famous *Seabrook* proceeding), the court was referring not only to the Commission's discretion under the Atomic Energy Act but also to the deference due the Commission's "interpretation of what is properly within its jurisdictional scope" under NEPA. *Ibid.* We again address the Commission's discretion under NEPA below.

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 result 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. Exxon*, 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 Association 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 challenged 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 finding later mooted, measured the aesthetic impacts of cooling towers for the Seabrook facility. *Id.* at 826.

⁷ *But See Chelsea Neighborhood Association 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*.

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 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 National 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 Leventhal 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 Association*, 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 itself 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 amendable 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 ten 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.

D. Environmental Impact Statement

In sum the staff's position is that the issue of psychological stress should be considered under the umbrella of a need *vel non* of an environmental impact statement. Staff brief pp. 9-29.⁹ The staff argues that an EIS is not required, but even if it were required, psychological stress is probably not cognizable under NEPA. But, according to the staff, maybe it is cognizable. If it is a question of quantifiability, the staff's reasoning continues, it is the NRC's responsibility under NEPA to:

- (B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by subchapter II of this chapter, which will insure that presently unquantified en-

⁹ The staff has elected to address the issue of the need for an EIS in its psychological stress brief. The other parties have raised the EIS issue with respect to other sub-issues in briefs not before the Commission. The question of the need for a general EIS is pending before the board.

vironmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

Section 102(2)(B); 42 USC 4332 (B). Staff brief, pp. 9-29, 51-56.

Recognizing that NEPA may require the staff to develop the methods (with CEQ) to quantify "presently unquantified environmental amenities" the staff then reports:

Further, the NRC Staff has not had the opportunity and does not presently have the expertise to make more than a cursory evaluation of the methodology of these studies. Consequently, we cannot say with any degree of certainty whether the psychic distress associated with continued operation of the TMI 1 facility is sufficiently susceptible of measurement to permit a meaningful assessment of the phenomenon. [footnote omitted]

The staff refers to a sizeable group of studies by responsible organizations attempting to measure the effect of the TMI 2 accident on mental health (Brief, p. 53, n. 51) and other efforts to reconcile mental health with NEPA (*Id.*, p. 54, n. 53). But its ultimate conclusion is that psychological stress should not be considered in this proceeding. *Id.*, p. 56.

We have examined the filings of the parties, the studies referred to by the staff, and other literature.¹⁰ We cannot identify a source of evidence which would permit the measurement of the psychological stress phenomenon well enough for use in a full-scale cost/benefit balancing in an EIS. Nor do we know whether or not the state of the art can now produce such evidence. Although the intervenors refer to the community fears as well as individual fears, the intervenors have no more resources or expertise than does the staff to produce evidence useful in a full-scale cost/benefit balancing.

Only the staff has the resources and opportunity to develop the methodology to produce such evidence. Whether the staff should be directed to develop the methodology to quantify psychological stress for use in an EIS is a matter between the Commission and the staff. The board has no recommendation.

E. Mitigation under NEPA

It was appropriate for the staff to discuss psychological stress first in terms

¹⁰ For example, (1) Gleser, G.C.; Green, B.L.; and Winget, C.N. 1978. "Quantifying Interview Data on Psychic Impairment of Disaster Survivors." *Journal Nervous and Mental Disease*, 166 (3), 209-216; (2) Quarantelli, E.L., and Dynes, R.R. 1977. "Response to Social Crisis and Disaster." *Annual Review of Sociology*, 3, 23-49 (a review of the state-of-the-art of disaster psychology/sociology, with a bibliography of more than 100 references; (3) Quarantelli, E.L. (ed.), 1978, *Disasters: Theory and Research*, Sage Studies in International Sociology 13. Journals include *Mass Emergencies: An International Journal of Theory, Planning, and Practice* and *The International Journal of Disaster Studies and Practice*.

of an EIS, but the staff erred in limiting its analysis to whether an EIS factoring psychological stress is required.

Aside from its fundamental threshold 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

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.

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 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 Section 1500.2(b) (1974 rev.). [Footnote omitted] As the District of Columbia Circuit has succinctly put it:

Clearly, it is 'pointless to 'consider' environmental costs without also seriously considering action 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

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." *American Journal 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.

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 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.

V. Intervenor Funding

The Commission has not invited the board's recommendation on the issue of financial assistance to intervenors. While we do have views on the subject, they are individual and philosophical, and not likely to be helpful to the Commission. Our only comment on intervenor assistance is that there are intervenors and attorneys in this proceeding who have the skills to use intervenor funds effectively. One intervenor, PANE, has submitted a plan for the use of intervenor funds which warrants consideration if the Commission determines to provide intervenor assistance (p. A-133).

VI. CONCLUSION

The Nuclear Regulatory Commission, within its discretion, may and should consider psychological stress and community fears under NEPA for the purpose of mitigating the effects of its TMI 1 licensing activities.

Respectfully submitted,

THE ATOMIC SAFETY AND
LICENSING BOARD

Walter H. Jordan
Linda W. Little
Ivan W. Smith, Chairman

Bethesda, Maryland,
February 22, 1980

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

ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Chairman
Dr. Walter H. Jordan
Dr. Donald P. deSylva

In the Matter of

Docket Nos. STN 50-488
STN 50-489
STN 50-490

DUKE POWER COMPANY

**(Perkins Nuclear Station,
Units 1, 2, and 3)**

February 22, 1980

The Licensing Board issues its third partial initial decision in this construction permit proceeding, determining that there is no alternate site obviously superior to that proposed for the facility. The Board also ratifies its two previous decisions (LBP-78-25, 8 NRC 87 (1978), and LBP-78-34, 8 NRC 470 (1978)), which disposed of other issues then before it. The Board defers ruling on the NEPA cost/benefit balance involved in the construction and operation of the facility pending the resolution of, *inter alia*, generic safety issues and other matters growing out of the Three Mile Island accident.

TECHNICAL ISSUE DISCUSSED: Water supply adequacy.

PARTIAL INITIAL DECISION
(Construction Permit Proceeding)

Two Partial Initial Decisions, LBP-78-25, 8 NRC 87 (July 14, 1978) and LBP-78-34, 8 NRC 470 (October 27, 1978), were issued in this proceeding. The first pertained to Radon-222 and the second pertained to all issues except alternate sites and generic safety issues. This Partial Initial Decision ratifies our previous Partial Initial Decisions and determines the alternate site issue.

Alternate Sites

Background

1. In the environmental hearings in 1977, the Board questioned on April 28, 1977, whether the record was adequate as to "alternate sites," in view of *Florida Power and Light Company* (St. Lucie Nuclear Power Plan, Unit No. 2), ALAB-335, 3 NRC 830 (1976), which remanded the issue to the Licensing Board (Tr. 1482, 1488, 1581-1630, 1650-1657). A second decision was issued on October 7, 1977, on the alternate site issue in St. Lucie, by the Appeal Board; ALAB-435, 6 NRC 541 (1977).

2. On April 5, 1978, the Board issued an Order which stated, *inter alia*:

The responsibility of the Staff in its evaluation of alternate sites was considered by the Appeal Board in St. Lucie. We think it appropriate for the parties to provide the Board with short statements in the form of citations to the record and comments on the law as to their perceptions of the state of the record in this proceeding in that regard. [footnote omitted]

In response thereto, both the NRC Staff and Applicant maintained that the record reflected the adequacy of the Staff's consideration of alternative sites, consistent with the National Environmental Policy Act (NEPA) and NRC case law. See responses of Staff and Applicant, dated April 17 and April 21, 1978, respectively. Intervenors contended that the consideration of alternative sites by the Staff and by the Licensing Board had been insufficient, specifically in the failure to evaluate the possibility of locating a nuclear facility on Lake Norman using one-through cooling (i.e., discharge of heated effluent directly into the receiving basin). See Intervenors' Response, dated April 21, 1978.

3. Prior to this Board's ruling on the adequacy of the record in regard to alternative sites, the Appeal Board issued decisions on April 28, 1978 and May 25, 1978, which addressed the adequacy of NRC Staff review of alternative sites.¹ Without further explanation, the Staff, on June 15, 1978, moved to reopen the proceeding to take additional evidence on Staff review of alternative sites. Applicant vigorously opposed the motion, stressing that the Staff review in Perkins had been fully consistent with the above-referenced Appeal Board decisions. See Applicant's Opposition, p. 4, line 8, and p. 5, line 5, dated June 27, 1978. Intervenors supported the Staff motion. See Intervenors' Response, dated June 29, 1978. On July 14, 1978, this Board granted the Staff's motion and reopened the record for the limited purpose of

¹ *Public Service of New Hampshire, et al.* (Seabrook Station, Units 1 and 2), ALAB-471, 7 NRC 477 (1978) and *Boston Edison Company* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 NRC 774 (1978).

taking new evidence "regarding the Staff's analysis of sites alternate to the Perkins site." The parties proceeded with discovery, and evidentiary hearings were held January 29, through February 2, 1979, on the issue. At the hearing the following exhibits were admitted into evidence:

Summary Report, January 1978, Duke Power Company, Site Studies, February 1978, Duke Power Company Response to NRC Request for Additional Information, August 18, 1978.	Staff's Exhibit 10 (Tr. 3061)
August 7 Response of Applicant	Staff's Amended Exhibit 10 (Tr. 3078)
(Plant Site Evaluation Using Numerical Ratings)	Intervenors' Exhibit 7 (Tr. 3656)

Evidentiary Hearings

4. Consistent with the purpose of the reopened hearing, the Staff presented a panel of witnesses, all of whom were adjudged to be experienced in appraisals of potential environmental impacts and alternate sites. (Professional Qualifications attached to Supplementary NRC Staff Testimony, following Tr. 3049; Tr. 2988, 3046-48, 3069). This panel presented two pieces of evidence—the Supplementary NRC Staff Testimony (incorporated in the record following Tr. 3049) and Applicant's responses to Staff questions, which were part of the basic data upon which NRC premised its analysis.² (Staff Exhibit 10 admitted at Tr. 3061 and Supplemented at Tr. 3078).

5. Applicant's responses to a series of Staff questions were made on August 8,³ August 31, and September 27, 1978 (Tr. 3078-79). These responses

² While the Staff presented Applicant's responses, Applicant subsequently affirmed that such were performed in the regular course of business and were true and correct. (Tr. 3652-53).

³ Applicant's August 8, 1978, response consisted of a cover letter of that date and actual responses dated August 7, 1978. Both dates have been used interchangeably throughout the record. It should be noted that this response included Applicant's X-81 and X-82 Site Studies, February 1973 and Phase-I Siting Study, January 1979, both of which have been separately referred to throughout the record.

documented Applicant's site-selection process which leads to its selection of the Perkins site. Applicant describes its methodology, addresses the screening and selection process, including criteria for site elimination and selection, provides the underlying data upon which Applicant premised its site evaluation, and identifies potentially licensable sites for power-generating facilities in and about Applicant's service area. Because Applicant's responses form the background for the Staff review, as well as the analysis presented by Intervenor's witness, Dr. Alan Lipkin, the Board deems it prudent to explore them in some detail.

6. The responses address Applicant's original alternative siting analyses, as set forth in its X-81 and X-82 Site Studies, February, 1973. They explain that the Perkins site was selected in April 1973 based upon studies performed in the latter half of 1972 and early 1973. (Applicant's August 7, 1978 Response at p. 1, Staff Exhibit 10). Since Applicant had previously purchased both fossil and nuclear units in the range of 1100+ MWe, it was decided that an optimum plan, considering the economics of standardization, would be to purchase six identical units of the 1200-MWe class. Based upon studies of Applicant's Catawba Nuclear Station, Applicant had previously decided that nuclear power would be the most economical and environmentally acceptable. Accordingly, Applicant's site selection process tried to select the two best sites for nuclear units. Applicant also knew that the 1972 Federal Water Pollution Control Act (FWPCA), as amended,⁴ would lead to new promulgation of regulations by the Environmental Protection Agency (EPA) concerning alternate methods for heat dissipation from steam power plants. Because EPA regulations had yet to be promulgated, Applicant did not want to use cooling towers when lake cooling might be an alternative, or to select sites on existing or new lakes when regulations might require cooling towers. Thus, Applicant was seeking nuclear generation sites suitable for either once-through lake cooling or using cooling towers. (Applicant's X-81 and X-82 Site Studies, February 1973, and August 8, 1978 Reponse at pp. 1-12, Staff Exhibit 10).

7. An initial review by Applicant of Applicant's region of interest, i.e., the Duke Power Company service area and the immediately adjacent areas, was performed using Applicant's inventory of sites. Preliminary screening located additional site area. Primary screening was then conducted. Applicant considered such engineering and environmental factors as water availability, access to the existing transmission network, institutional factors, and the location of other sites. This review and screening eventually led to the analysis of nine sites and a variety of sites with suitable condenser-cooling alternatives. Reconnaissance-level information was evaluated and the comparative costs to

⁴ 33 U.S.C. § 1251 *et seq.*

begin construction at each site was evaluated. Water-use studies, transmission system studies, and conclusions and decisions regarding waste heat dissipation led to the selection of the Perkins site for one of the two plant sites as described in Applicant's Construction Permit Application submitted in March, 1974. (Applicant's X-81 and X-82 Site Studies, February 1973, and August 8, 1978 Response at pp. 1-12, Staff Exhibit 10).

8. The Applicant's responses also reflect that in mid-1976 Applicant initiated a thermal station siting program, the preliminary result of which was the Summary Report Phase-I Siting Study, January 1978. The program was independent of Perkins. Its objective was to select the two best fossil and the two best nuclear-site alternatives for the baseload generation needs in the period after the commercial operation of the Perkins units. The Study was designed to complement existing siting guidelines and regulations. It used a systematic screening methodology, similar to methods outlined in NRC Regulatory Guides 4.2 and 4.7; it recognized the exclusion of areas based on reconnaissance-level information; and it made conservative site-selections based on objective quantitative and subjective qualitative evaluations (Applicant's Phase I Siting Study, Staff Exhibit 10).

9. A "coarse screening" of the region of interest identified potential areas and candidate areas. The coarse-screening process examined general engineering and environmental criteria associated with water availability, land use, transmission facilities, geology, seismology, demography, and meteorology. Based upon the Study, 100 sites were identified for further evaluation (Applicant's Phase-I Siting Study, pp. 3-5, August 8, 1978 Response, Attachment 2 and August 31, 1978 Response at pp. 3-1 through 3-9 and Table 3-1, Staff Exhibit 10).

10. The Applicant's intermediate-screening of candidate areas resulted in the identification of "site areas" and "potential sites." Applicant used large-scale mapping to indicate potential sites. Such sites then lacked formal evaluation. Each site was further evaluated based upon visits and more detailed analysis of reconnaissance-level data. This process excluded 62 sites from the original 100; the remaining 38 sites are evaluated and presented in the Phase-I Siting Study. The 62 sites were excluded because:

- a. 18 were located in areas classified as natural and scenic, or state park or national forest. Several were distant from the Duke service area.
- b. 12 had insufficient land or water to support 2600-MWe thermal stations.
- c. 2 are presently power-plant sites (Catawba and McGuire).
- d. 1 was inundated by an existing project (Lake Norman).
- e. 7 reflected commercial and industrial buildup.
- f. 7 duplicated sites carried into the Phase-I study as potential sites.
- g. 11 were geologically (seismically) undesirable.

- h. 3 are possible fossil sites adjacent to existing fossil stations.
- i. 1 has been developed by a municipality for water supply.

(Applicant's Phase-I Siting Study at pp. 5 and 6, August 8, 1978 Response, Attachment 2 and August 31, 1978 Response at pp. 3-1 through 3-9, Staff Exhibit 10).

11. The 38 identified sites then were further evaluated by Applicant during the fine-screening phase. The fine-screening process excludes potential sites based on a more detailed evaluation of criteria related to the cooling-system development, environmental impacts, transmission, flood hydrology, transportation, population density, meteorology, and other engineering and environmental considerations of each site. Applicant provided detailed information on each criterion. (Applicant's Phase-I Siting Study at pp. 8-11 and August 31, 1978 Response at pp. 1-2 through 1-7, Staff Exhibit 10). Utilizing a mathematical matrix, the information gathered for each criterion for each site was translated into either a cost factor or a numerical rating factor. The rating factor is a numerical value or value range treated consistently for each potential site. Applicant provided a detailed description of its rating process (Applicant's Phase-I Siting Study, Attachments 1-5, Staff Exhibit 10). Each criterion, exclusive of the measurable costs, was also assigned a weighting factor. The weighting factor indicates the relative importance assigned by the Applicant to each listed criterion; the higher the weighting factor the more important the parameter is considered to be. Applicant explained the weight assigned each criterion. (Applicant's August 31, 1978 Response pp. 1-2 through 1-7 and Phase-I Siting Study at pp. 7-8, Staff Exhibit 10). The rating factor multiplied by the weighting factor for each criterion, added to the products, resulted in a weighted total (termed Site Quality) for each alternative. The criteria evaluated based on costs were totaled to yield a dollar penalty (\$ penalty). The Site Quality number and a dollar penalty number have been determined for each plant-site alternative; the higher the Site Quality and the lower the dollar penalty, the better the plant-site alternative. (Applicant's Phase-I Siting Study at pp. 6-8, Staff Exhibit 10). For clarity, a matrix format is set forth on page 12.

12. Through a review of total Site Quality points and site dollar penalties, the 38 sites were analyzed to select the ten best sites which would be representative of cooling and fuel alternatives. (See Applicant's August 31, 1978 Response, pp. 6-5 through 6-25, Staff Exhibit 10, for information used in this analysis; see Phase-I Siting Study, Table 6, for a list of the ten selected sites, which are designated under the "Sites to Carry Forward" column by an asterisk, Staff Exhibit 10).

13. Because the 38 sites reflected in the Siting Study were not limited to the nuclear option only, the Staff requested additional information related to the 4000-MWe nuclear sites using the cooling tower option. Applicant's preliminary evaluations of the 38 sites indicated that only 27 were suitable.

Applicant explained the reasons for exclusion of the eleven sites. (August 31, 1978 Response at pp. 6-2 through 6-5). After preliminary review, an additional four sites were excluded because they had a total Site Quality point value of less than 100. (August 31, 1978 Response at pp. 6-5 and 6-25). A minimum streamflow of 500 cfs was adopted as the minimum streamflow necessary for radwaste dilution for the 4000-MWE nuclear alternative, and this consideration rules out six sites. August 31, 1978 Response, p. 6-25).

14. The remaining 17 sites were further evaluated by Applicant; some were eliminated because they were not significantly different alternatives. For example, if two sites were located near each other on the same water body, only the better one was chosen. With this further elimination, eight sites were selected (a description of Applicant's evaluation is set forth in its August 31, 1978 Response, pp. 6-25 through 6-28). The process of fine-screening and evaluation produced the subsequent 4000-MWe nuclear/cooling tower candidate sites:

1. Lake Norman "E"
2. Lake Hartwell
3. Tuckertown
4. Fishing Creek Reservoir
5. Broad
6. Middleton Shoals
7. Clinchfield
8. Wateree

15. To assist the Staff in comparing Perkins with the sites evaluated in the Phase-I Siting Study, Applicant, pursuant to Staff request, furnished a matrix of the Perkins site. (Applicant's August 8, 1978 Response, Staff Exhibit 10). Applicant's evaluation of Perkins and the above-identified sites led it to conclude that there was no site obviously superior to Perkins. (Applicant's August 8, 1978 Response, p. 2 and Attachment 2, p. 2, Staff Exhibit 10).

16. The Board sought an explanation to the Staff statement (Supplementary NRC Staff Testimony at p. 6, following Tr. 3049, hereinafter referred to as "Staff Testimony") regarding the "unique independence" of Applicant's Phase-I Siting Study. The Staff explained that the Siting Study assumed Perkins had obtained the necessary licenses and thus was no longer a candidate site to be considered in future site planning. Under such a circumstance, there was no opportunity to favor the Phase-I Siting Study toward Perkins. In addition, the Staff explained that the Siting Study was published in January 1978, well before the Staff moved to reopen this proceeding. Accordingly, the Phase-I Siting Study could not have attempted to downgrade sites so that Perkins would be preferable. (Tr. 3194-97).

17. We also inquired whether Lake Norman is environmentally preferable than Perkins as a result of upstream regulation of water flows. (Tr. 3671-72).

CRITERIA	W e i g h t i n g	SITE EVALUATION CRITERIA							
		+2600 Nuclear		+2600 Fossil		+4000 Nuclear		+4000 Fossil	
		Towers	Lake	Towers	Lake	Towers	Lake	Towers	Lake
I. COOLING SYSTEM DEVELOPMENT									
a. Water Availability During Low Flow	3								
b. Thermal Effects	3								
c. Reduction of Stream Flow	3								
d. System Costs	\$								
II. ENVIRONMENTAL IMPACT									
a. Endangered Species	3								
b. Existing Aquatic Recreation	1								
c. Existing Terrestrial Recreation	1								
d. Potential Aquatic Recreation	2								
e. Potential Terrestrial Recreation	2								
f. Water Shortage Area	3								
g. Pollution	2								
h. Minerals	1								
III. TRANSMISSION									
a. Proximity and Capability	\$								
b. Penalties	\$								
IV. FLOOD HYDROLOGY	2								
V. ACCESSIBILITY									
a. To Rail	\$								
b. To Highway	1								
VI. POPULATION DENSITY	2								
VII. OTHER CONSIDERATIONS									
a. Earthwork	\$								
b. Seismology	1								
c. Relocation	1								
d. Duke Land Holdings	\$								
VIII. METEOROLOGY	\$								
\$ PENALTY									
SITE QUALITY (TOTAL)									

Applicant responded that while the Catawba River is regulated, the construction of Carter Creek Reservoir will similarly regulate the Yadkin River during low flows so that downstream effects will be minimal, as indicated by the extensive studies previously received as evidence.⁵ (Tr. 3672-73).

18. We inquired as to the environmental effects at Perkins when flow was just above the 1000 cfs mark (Tr. 3673-74). Applicant acknowledged that there will be some effect at that level, but that to assess the matter properly, extensive studies had been undertaken. These studies are part of this record, which show that the effect will be minimal (Tr. 3674). Staff had earlier testified that Perkins would have a virtually insignificant effect upon the Yadkin River and High Rock Lake (Tr. 3189). Applicant further stated that 1000 cfs streamflows are exceeded 97% of the time; and that 1100 cfs streamflows are exceeded 96.2% of the time, which means that the Board's concern is directed to a situation which will occur 8/10 of 1% of the time (Tr. 3725). Applicant maintained that this was an insignificant amount, particularly when compared to other sites. Perkins will evaporate 2.4% of the average streamflow of the Yadkin; when and if it were located on the Catawba, at Lake Norman, it would evaporate 2.9% of the average streamflow (Tr. 3736).

19. Applicant provided some additional reasons why the plant should be located at the Perkins site. Applicant believes that there should be a reasonable relationship of consumptive water use in the five major river basins within its service area. (Tr. 3741).

These reasonable relationships should consider the number of people within a drainage basin area, the average flow in the area, the 7Q10 flow, and the amount of water consumed to support thermal power (Tr. 3675). In comparing the Catawba and Yadkin river basins, Applicant has calculated an index of megawatts (planned or installed) per unit of 7Q10 flow; Catawba has 12.1 MWe per cfs based on the 7Q10 flow and the Yadkin has 4.9 MWe (Tr. 3675-3678). The Board viewed this index as demonstrating that there are less than half as many megawatts on the Yadkin per unit of 7Q10 flow as on the Catawba (Tr. 3677). Applicant has compared the water evaporated (cfs) per million people in the river basin due to Duke Power operation. On the Catawba the figure is 76.7; on the Yadkin it is 68.5 with Perkins (Tr. 3742). Without Perkins, the Yadkin figure is 5.6 (Tr. 3742). Applicant evaluated it power-plant capacity in megawatts per square mile of a river's drainage area (Tr. 3743). Catawba is 1.8; on the Yadkin it is 0.7, including Perkins (Tr. 3743).

20. Under questioning, Applicant indicated that there were existing and planned facilities on Lake Norman, and that good engineering judgment

⁵ For a discussion of Carter Creek Reservoir and its operation during low flows, see the Board's October 27, 1978 Partial Initial Decision, LBP-78-34, 8 NRC 470, (1978) pp. 475, 476.

requires that further siting on Lake Norman should await the outcome of planned studies which will evaluate the interaction of the facilities—such studies will not be completed until at least 1983. (Tr. 3679-80; see also Tr. 1590, 1595, 1653, 1688, 1700, 1732).

21. We asked the Applicant's opinion regarding an FES statement that if further water needs grow significantly, critical water shortages could develop, (FES § 5.2.1.3; Tr. 3739). Applicant took issue with the FES statement and referred to the State's determination that consumption of water by Perkins was consistent with the projected future water needs (Tr. 3739). Applicant stated that the State can impose requirements giving the State the authority to require permits for those who withdraw water. However, to require this permit the State must first declare the area as a *capacity use area*. After significant State inquiries and exhaustive analysis and after consideration of potential future water uses in the basin, the State determined that it was unnecessary to declare the Yadkin River basin a capacity use area. In its determination the State assumed that the Perkins Plant would be constructed at the Perkins site. The State determination was made only after an exhaustive study and public hearings conducted by the State of North Carolina. Applicant indicated that the State had also performed an analysis on the entire water system of the State which is set forth in the North Carolina Water Resources Framework Study, 1977 (Framework Study). (State Exhibit 2). In this analysis the State placed great emphasis on future water use and specifically recommended the development of wet industry downstream in the Yadkin basin. The recommendation was made considering the Perkins Station as operating (Tr. 3835-40). Applicant explained its consideration of future water use with regard to alternate sites (Tr. 3740-41). Applicant explained that its Phase-I Siting Study utilized the future water use information contained in the Framework Study (Tr. 3740). This information is evaluated in Criterion II(f), entitled "Water Shortage Area." (See matrix at p. 317 *supra*). This criterion was assigned a weighting factor of 3, indicating that it was most important. Further, Applicant recognized the potential growth in municipal and industrial water use (Tr. 3834). Specifically, Applicant considered reductions in steamflows and examined the percent reduction that a Perkins-type plant would have on such flows. This recognition is set forth in Criterion Ic, entitled "Reduction of Streamflow" (Tr. 3834). A low percentage reduction indicates a greater availability of water for future users, and thus a site with a low percentage streamflow reduction figure would be given a high rating. (Applicant's Phase-I Siting Study, Attachment 5, Staff Exhibit 10). As the "Water Shortage Area" criterion, "Reduction of Streamflow" received a weighting of 3. (See matrix at p.317, *supra*).

22. The Staff testified that it independently assessed Applicant's information. First, it critically examined the screening methodology and candidate

site selection process employed by Applicant. The Staff directed its initial attention to the Applicant's coarse-screening process, which evaluates Applicant's region of interest to identify potential areas and candidate areas. The Staff examined the criteria used and found the approach reasonable except for the exclusion of areas on the basis of population density within a 5-mile radius of the potential site. Applicant used a population density level of greater than approximately 400 persons per square mile as an excluder.⁶ The Staff determined this to be too conservative; however, the Staff found that the areas thus excluded were minor in comparison to the total area of the region of interest examined and were typical of areas considered (except for population level). On this basis, the Staff considered such exclusion as only a minor discrepancy in the coarse-screening process which resulted in the selection of 100 sites. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 3-4).

23. The Staff next evaluated Applicant's intermediate screening of candidate areas; this procedure screens candidate areas to identify site areas and potential sites. Utilizing this process, Applicant excluded 62 sites. The Staff examined the above exclusion criteria for these 62 sites and agreed with them except in two respects. The Phase-I Siting Study had as its objective the identification of thermal energy sites (both nuclear and fossil) rather than just nuclear sites. Such an approach could have eliminated a potential nuclear site when the procedure eliminated a site as unsuitable for a fossil plant. The Applicant has not, however, used the unsuitability of any given site for fossil as a means of eliminating any of the 62 sites as a nuclear site. Therefore, the Staff did not consider this to be a flaw in the process. The Applicant also excluded several sites in the 100 originally in the site bank primarily because of the distance from the Duke service area. If the number of sites examined had been small or if the Applicant had not examined such a relatively large region of interest, the Staff would consider such exclusion a flaw in the process. However, since the above is not true, the flaw, if it indeed exists, was considered minor. Finally, the Staff examined the geographical distribution of the 38 remaining potential sites. Therefore, the Staff concluded that the resulting 38 sites were representative of all the resource areas in the region of interest. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 4-5a).

24. The Staff then focused upon the data presented in Applicant's Phase-I Siting Study with respect to the 38 potential sites. The Staff recognized that the Siting Study was carried out to produce a preliminary decision document

⁶ The Board believes that population density near a proposed site is a most important consideration and commends the Applicant's exclusion of sites with a surrounding population density greater than 400 persons per square mile.

for use by the Applicant for choosing future sites, *both* fossil and nuclear. However, the Staff found that Applicant's analysis might have considered the 400-MWe nuclear station with cooling towers, as well as other options. Accordingly, the final screening criteria used to analyze the remaining 38 sites became the subject of Staff's review of the 400-MWe nuclear stations with cooling tower option. (Supplementary NRC Staff Testimony following Tr. 3049, at p. 8; Applicant's Phase-I Siting Study, Table 3, Staff Exhibit 10).

25. In its examination of the fine-screening criteria used by Applicant to reduce the 38 sites to a manageable number, Staff concluded that two main defects existed in Applicant's rating process. First, there was no rating factor given for land use. The Staff believed that land-use characteristics are extremely important in evaluating environmental impacts. Second, the Staff attached no weight to the land holdings of the Applicant as a criterion to reject or accept any particular site. However, Staff believed that consideration of land usage might have eliminated some sites that were indeed retained. Thus, the lack of such data may have left more sites for Staff to examine. Except for the above caveats, the Staff agreed that the remaining rating factors were reasonable. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 6-7).

26. The rating factors were used in conjunction with weighting factors. Except for the weighting factor for seismology (which Applicant ranked as 1), the Staff agreed that the weighting factors were reasonable. Although the effects of seismic activity can be "designed for" at an increased cost to the Applicant, the Staff believed that, with the large area available to the Applicant for siting, this penalty should not be imposed on the ratepayers, and that seismological considerations should be given a weighting factor of 3. (Supplementary NRC Staff Testimony following Tr. 3049, at p. 7).

27. The Staff emphasized that all dollar costs discussed in the Siting Study had not been ranked by the Staff as the sole, primary criterion for site selection. Environmental and site-suitability factors were the initial parameters considered by the Staff in its review of the siting study. (Supplementary NRC Staff Testimony following Tr. 3049, at p. 7).

28. Information provided by Applicant and the Staff's subsequent independent evaluation was based on reconnaissance-level information. It does not include information that can only be obtained by detailed site-monitoring programs or studies such as those available for Perkins. (Staff Testimony pp. 2 and 3).

29. Based on the above, the Staff concluded that:

a. The Applicant's methodology is (1) reasonable, (2) likely to disclose potentially licensable sites, ranked in order of importance, and (3) likely to disclose a site "obviously superior" to the Perkins site, if there is indeed such a site.

b. The Siting Study and additional information (Staff Exhibit 10) are

valid criteria to determine candidate sites for 4000-MWe nuclear stations to serve the Applicant's needs.

c. The only cooling option available to the Applicant at this time is closed cycle (i.e., cooling towers). This has been confirmed by Staff consultation with the State of North Carolina, which assures the Staff that the State will not license once-through cooling due to its greater heat discharge into receiving State waters. (see Reference 1 to NRC Staff Testimony).

d. The Staff disagrees with Applicant that sites on reservoirs should not be controlled by third parties.

e. The eight candidate sites listed in Table 6 of the Siting Study as capable of supporting a 4000-MWe nuclear station with cooling towers are all viable and potentially licensable sites. The Staff rejected the Applicant's reasons for eliminating two of these eight sites. (Table 6 of the Siting Study, footnotes 4 and 6). It is obvious to the Staff, upon closer examination of the Siting Study, that a second site on Lake Hartwell should be included in the list of Table 6 of that study. This is the Lower Hartwell site. It is in Table 3 of the Siting Study as a potential site but was not in Table 6.

f. A visit to these nine sites and the Perkins site was made by Staff personnel qualified to evaluate, on a reconnaissance level, land-use characteristics, potential aquatic effects, and water-use effects. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 8-9).

30. The final sites selected by the Staff for alternative site comparisons were:

SITE	IDENTIFICATION CODE
1. Fishing Creek Reservoir	250612
2. Lake Norman "E"	150512
3. Wateree	250812
4. Clinchfield	160102
5. Broad	160302
6. Middleton Shoals	280312
7. Hartwell-LaFrance	280512
8. Lower Hartwell	280612
9. Tuckertown	140612
10. Perkins	(Supplementary NRC Staff Testimony following Tr. 3049, at p. 10). ⁷

⁷ Site-identification codes used by Applicant and Staff may disagree with respect to the last two digits due to consideration of different fuel and cooling alternatives.

31. Following the visit to the sites, the Staff independently analyzed site criteria based upon terrestrial ecology and land use, water availability and thermal hydrology, and potential impacts of candidate sites. As a part of these analyses, the Staff assessed the accuracy of the human population and hydrological data presented by the Applicant by independent reference to available data banks and found such data to be reasonably accurate. (Supplementary NRC Staff Testimony following Tr. 3049, at p. 9).

32. With respect to terrestrial ecology and land-use considerations, the Staff evaluated economic value of the land, condition and use of the land, people per square mile, forest acreage to be cleared for transmission and railroad right of way, and rare or endangered species. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 9-12). On these bases, three sites were less desirable than the Perkins site: Lake Norman "E" (150512), Hartwell-LaFrance (280512), and Lower Hartwell (280612). Only one site was superior to the Perkins site, i.e., the Fishing Creek Reservoir (250612). This site is abandoned farmland with early second growth (old-field) forest on it. Much had been cleared, but the final use of the land could not be determined. The method of clearing appears to indicate site preparation for a pine plantation. The area's population density is nearly twice that of the Perkins site, but few potentially affected residences were observed. The Fishing Creek Reservoir site requires 215 miles of 525-kV transmission lines, with an estimated clearing of 4480 forest acres, 17 times the amount required for Perkins. Railroad lengths at the two sites are similar. Assuming similar acreage for the site, plus 1400 acres for the Carter Creek impoundment (a feature unique to Perkins), total land pre-emption at Fishing Creek Reservoir would be 2.2 times that at Perkins. Therefore, although the Fishing Creek Reservoir site received a higher rating than Perkins, the increased forest clearing for transmission lines tends to obviate that advantage. The Staff found that neither the Fishing Creek Reservoir site nor any other potential site was "obviously superior" to the Perkins site from the standpoint of terrestrial ecology and land use. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 12-15).

33. The Staff summarized its analyses in the following table:

Table 1. Perkins alternative site study: Staff analysis and comparisons for terrestrial ecology and land use.

Site	Site a		People Per Sq. Mi.	Transmission Lines (Miles)		Forest ^b Transmission Line Right-Of-Way	Railroad ^b Right Of Way	Number of Rare or Endangered Species	
	Land	Ecology		525 kV	230 kV			Plant	Animal
Fishing Creek Reservoir	1	1	144	215	0	4480	73	—	1
Lake Norman "E"	2	2	64	33	0	500	85	1	3
Wateree	2	2	24	240	0	5180	145	—	1
Clinchfield	2	2	33	109	0	2460	230	4	1
Broad	2	2	174	45	0	780	67	1	—
Middleton Shoals	2	2	71	65	85	2200	42	—	1
Hartwell-LaFrance	3	2	138	116	9	2300	121	—	1
Lower Hartwell	3	2	141	117	12	2350	121	—	1
Tuckertown	2	2	51	70	50	1570	85	6	—
Perkins				8	8	260	74	1	—

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^a 1 = better than Perkins site
 2 = equivalent to Perkins site
 3 = inferior to Perkins site

^b acres

34. Regarding water availability and thermal hydrology, the Staff considered environmental impacts of cooling-tower plumes, lengths of pipe and hydrostatic head, and thermal effects of the discharge of blowdown water. The Staff found each factor to be important; the differences among candidate alternate sites are insignificant. Accordingly, the Staff concluded that the major thermal and hydrological aspects in evaluating an alternate site is the availability of sufficient water for cooling towers. The Staff provided pertinent information for each subject site, and concluded that, of the alternate sites, only one—the Broad River site—had a marginal quantity of water available for cooling towers. The adequacy of the Clinchfield site would depend upon construction of the Clinchfield Reservoir or a similar impoundment; the remaining seven alternate sites would have sufficient water available to supply the cooling-tower requirements without causing significant environmental effects.⁸ (Supplementary NRC Staff Testimony following Tr 3049, at pp. 16-20).

35. The Staff also addressed potential aquatic impacts. The aquatic assessment was based on visits by the Staff to the alternate sites, including Perkins, as well as on reconnaissance-level information available for the alternate sites. This information is listed in the Reference section attached to the Staff's Testimony. (Following Tr. 3049). It consists of (1) basic hydrological data (e.g., streamflows) from the documents supplied by the Applicant as a result of Staff requests, as independently verified by the Staff; (2) impact statements completed for projects which are (or will be) located on the same or similar river systems as the sites being evaluated; (3) government reports on the limnology and fisheries of the region and on the occurrence of endangered species; and (4) miscellaneous reports on the biology of Piedmont streams and reservoirs. The Staff examined the (a) physicochemical and biotic characteristics of the rivers and reservoirs in the Carolina Piedmont (wherein Applicant's service lies), (b) data on fish production and composition, (c) endangered species, and (d) wild and scenic rivers, recreation, and average flows. On these bases, from an aquatic ecological standpoint, the Perkins site is believed by the Staff to be an acceptable location for the facility, since no significant effects are predicted at that site. Possibly, locating the plant at one of the alternate sites would result in even lesser effects than those predicted for Perkins. It was, however, the Staff view that such lesser effects would not be so important as to make that site clearly preferable to the Perkins site. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 21-24).

36. The Staff summarized its analysis of these parameters as follows:

⁸ As will be seen subsequently, the Board has major reservations about the adequacy of the Staff's consideration of water use.

Table 2. Selected hydrological and aquatic ecological data for the Perkins site and nine alternative sites.

Site	Water Type	Endangered Spp. Likely?	Part Of Wild And Scenic River System?	Average Flow In River Or Through Reservoir, CFS
Perkins	River	no	no	2880
Fishing Creek Reservoir	Reservoir	no	no	4860
Lake Norman "E"	Reservoir	no	no	2600
Wateree	Reservoir	no	no	5825
Clinchfield	Reservoir	no	no	970
Broad	River	no	no	1470
Middleton Shoals	Reservoir	no	no	4214
Lake Hartwell-LaFrance	Reservoir	no	no	4400
Lake Hartwell-Lower	Reservoir	no	no	4400
Tuckertown	Reservoir	no	no	4684

Source: References 4, 12-14, 16-21; Duke Power Company Phase I Siting Study; Duke Power Company submittal to NRC of 8/31/78.

37. Based upon its overall analysis, the Staff compared the alternatives to the Perkins site as follows:

Sites slightly better:	Fishing Creek, Wateree, and Middleton Shoals
Sites roughly equal:	Tuckertown and Clinchfield
Sites slightly worse:	Lake Norman "E," Broad, Lake Hartwell-LaFrance, and Lake Hartwell-Lower

The Staff stated that no alternative site stands out as one which could be rated as "obviously superior." All sites examined, with the possible exception of the Broad River site, are reasonable and potentially licensable to support a 4000-MWe nuclear station with cooling towers. Differences among all the sites are subtle, and gradations among them are minor. The Staff, therefore, concluded that none of the alternative sites considered is obviously superior to the Perkins site as a reasonable and licensable site for the 3840-MWe (net) nuclear station proposed by the Applicant, Duke Power Company, based on environmental considerations. (Supplementary NRC Staff Testimony following Tr. 3049, at pp. 24-25).

38. The Board and parties inquired as to various aspects of the Staff's review. In response, the Staff stated that it had relied upon information other than that furnished by Applicant (Tr. 3056-57, 3083, 3089, 3096, 3185); that it had verified Applicant's information, and had found such to be accurate and consistent with pertinent regulatory guides (Tr. 3058, 3079-80, 3083-86, 3089, 3103, 3185, 3286-87, 3299, 3301, 3792-94); that it had conducted an independent analysis of the final alternative sites (Tr. 3070, 3078, 3103, 3286-87, 3291-92, 3299, 3792); that the instant testimony complied with current Commission alternate sites guidance (Tr. 3087-88, 3232); that it relied upon reconnaissance-level information (Tr. 3082, 3134); and that power-plant siting is not a precise science. Judgment must be reasonably applied, and it must be recognized that criteria vary in importance from one service area to another (Tr. 3090-91, 3143-45). The Staff witnesses testified that they concentrated primarily upon environmental costs, not monetary costs of construction, and that they followed the guidance of NUREG-0099, Regulatory Guide 4.2, Revision 2, Preparation of Environmental Reports for Nuclear Power Stations, July 1976 (Section 9), General Site-Suitability Criteria for Nuclear Power Stations, Regulatory Guide 4.7, Revision 1, November 1975, and Commission decisions, Tr. pp. 3185 and 3186.

39. The Staff explained its efforts in reducing the sites under consideration from 38 to 10 (Tr. 3081-82, 3238-40, 3246); it stated that it considered all

factors advanced by Applicant, as well as some additional factors (Tr. 3248). It listed the factors it considered in its analysis of the final alternate sites (Tr. 3257-58, 3271-77); it explained why it did not generate its own matrix (Tr. 3164-78, 3186, 3192, 3264-67, 3291-94, 3810-14), but used that of the Applicant (p. 6 following Tr. 3049). The Staff noted that Perkins was subjected to closer scrutiny because information beyond the reconnaissance level was available from Applicant (Tr. 3082-83, 3127). The Staff maintained that the State of North Carolina's letter on which it relied to preclude present consideration of once-through cooling was consistent with EPA's current position (Tr. 3091, 3107, 3112).⁹ The Staff agreed with Applicant that a thermal study examining the interaction of various generating units on Lake Norman is needed before more plants are built (Tr. 3108). The Staff assumed the use of Carter Creek Reservoir by the power plant to assess the effects of the Perkins site (Tr. 3102). The Staff also corrected its FES to reflect an absence of rare or endangered species at Perkins (Tr. 3101-02).

Board Analysis of Staff Testimony

40. The Staff has concluded that there are some sites slightly better than Perkins, some roughly equal, and some slightly worse. Although this represents the combined judgment of their experts in hydrology and terrestrial and aquatic ecology, it remains very unclear how they arrived at their conclusions. Although some factors that they considered are stated in their written testimony, it is by no means apparent *how* the factors were considered to be more important than others. To claim that a given site is slightly better but not obviously superior is a quantitative judgment that demands support. We find that support lacking; the basis for our finding follows:

41. One of the major disadvantages of the Perkins site is the requirement that a large reservoir be constructed to supplement the river during periods of low flow. Carter Creek impoundment is a significant expense and also has an adverse environmental impact. Most alternate sites are located on existing reservoirs. How this was taken into account by the Staff is not apparent to the Board.

42. One of the adverse environmental impacts cited by the Staff in the FES (sc. 5.2.3) was a decrease in water quality. When the Staff was asked by Intervenor's counsel about how water quality was used in their comparison, a

⁹ The North Carolina position is consistent with the oft-discussed EPA position which has been the subject of previous Perkins hearings. (Tr. 1601-04; Applicant's testimony of L.C. Dail following Tr. 275 at p. 4). Counsel for the State of North Carolina bolstered the status of the subject letter by indicating that, as the representative of the State, he could state that it was North Carolina's present view that "Lake Norman is not suitable for once-through condenser cooling." (Tr. 2957).

witness replied "In this written testimony, I don't believe that it is stated explicitly how it was used" (Tr. 3130). Although the Staff witness later claimed that water quality was considered in the comparison, he did not say to what extent or how it favored one site over another.

43. On page seven of the Staff's testimony it is claimed that the Applicant did not give sufficient weight to seismology in comparing sites. The Staff never explained how its assignment of a higher weight entered into its comparison, or if indeed it was ever considered. The Staff claimed that it weighed terrestrial ecological factors differently from the Applicant but did not explain how the different weights affected its conclusions.

44. In the FES the Staff noted that an increase in the frequency and severity of fish kills may occur if Perkins is located on the Yadkin River. Whether this was considered in comparing other sites is not apparent.

45. The Staff has noted that there will be some social-economic impact on the community near the Perkins site-that there will be some effect on the schools and that 26 families will be displaced. Whether the alternate sites are better in this regard is not apparent from the Staff's analysis.

46. Although the list of factors that were not explicitly considered by the Staff could be expanded we are equally disturbed by their failure to show how they rated in importance the factors that they did explicitly consider. For example, there is a considerable variation in average and minimum streamflow at the various alternate sites. The average streamflow at Clinchfield site is only one third of that at Perkins. Furthermore, the site depends upon the proposed construction of a reservoir by the U.S. Army Corps of Engineers. Yet the Staff rates Clinchfield as equal to Perkins. They explained this by stating that if the withdrawal of 100 cfs of water from a stream is environmentally acceptable, the other sites are essentially equal in terms of the water availability. Thus, Clinchfield is not worse than Perkins nor is Wateree (where the streamflow is double that at Perkins) any better in the Staff's rating.

47. Certainly one of the chief concerns of this Board and a major concern of the Intervenors is expressed by their contention III (A) 2 which begins "Both the Applicant and Staff have radically underestimated the effect of the proposed 880 cfs drawdown limitation upon the future water needs of the Yadkin River Basin." Both the Applicant and the State of North Carolina have made extensive studies of the adequacy of the Yadkin to meet future requirements. If the river flow is only marginally adequate, then an alternate site on a river with much larger flow might well be "obviously superior." We are disappointed with the Staff's failure to address this important issue, either in the original proceeding¹⁰ or in this reopened hearing. When a Staff witness

¹⁰ In our Partial Initial Decision we pointed out that: "The Staff did not make an independent estimate of future demands on the Yadkin River and have submitted no proposed findings regarding this contention." (LBP-78-34, 8 NRC 470, 489 (1978)).

was asked by Applicant's counsel, "... and, Mr. Robertson, is it your opinion, based on independent review and reliance upon U.S. Geological Survey (USGS) figures, that there will be adequate water supplies in the river basin and the Duke Power Company service area in the future?" he replied, "I couldn't answer that question That would involve a knowledge of the basin that I hadn't developed" (Tr. 3096). When counsel further asked, "Are you familiar with North Carolina Environmental Management Commission discussion of future water uses in the Yadkin River Basin?", Mr. Robertson replied, "Not in any detail. I know they exist but I hadn't studied them" (Tr. 3098). In reply to a Board question, Mr. Robertson stated, "If we found that there was ample water at the site, we didn't take potential use into consideration because that would have involved predicting the future, somewhat. We had no way of knowing that industries would actually develop on these sites. So we didn't consider that." Refusal to consider future demands for water is in contrast to Staff's predictions on future needs for power.

48. In spite of the serious shortcomings in the Staff's analysis of alternate sites we nevertheless do take into account their conclusion that none of the alternate sites is obviously superior to the Yadkin River site.

Intervenors' Testimony

49. Dr. Miguel A. Medina, Jr., and Dr. Alan H. Lipkin testified for the Intervenors. Dr. Medina has a Ph.D. in environmental engineering sciences from the University of Florida. Dr. Medina has been involved in design and construction as an engineer and in research regarding water questions. He is an assistant professor of civil engineering at Duke University and has taught graduate and undergraduate courses in dynamic hydrology, water resources engineering, and environmental resources management. Dr. Medina has conducted research in storm-water modeling for the EPA and the National Science Foundation. He has been a consultant for private industry and public agencies. He has authored or coauthored seventeen technical papers and publications. His courses at Duke University at the graduate level include the study of the dynamics of circulation of currents and distribution of water, hydrometeorology, geophysical fluid motion, precipitation, surface runoff and stream flow, infiltration, water losses, hydrographic analysis, catchment characteristics, hydrologic instrumentation, and computer simulation models. His course in pollutant transport systems involves the study of the distribution of pollutants in natural water in the atmosphere, diffusive and advective transport phenomena within the natural environment and through manmade artificial conduits, and storage treatment systems, and analytical and numerical prediction methods. He also teaches a course in environmental resources and management, which includes the standards and criteria for evaluation of environmental resources and the management of these

resources. In this course the emphasis is placed on water, its distribution, estimated use, role of federal agencies, water quality legislation, parameters of pollution, and sources in control and water resources projects. (Professional qualifications of Dr. Medina following his testimony at Tr. p. 3436).

50. Dr. Medina testified that he had assisted in preparing impact statements, that he was testifying as a paid consultant, and that he favored nuclear power (Tr. 3395 and 3396). Dr. Medina stated that he had reviewed the information supplied by the Applicant, which is set out as Exhibit 10 of this proceeding. He also stated that he had examined the Final Environmental Impact Statement for the Perkins site and the North Carolina Water Resources Framework Study issued in 1977 and other information from open literature. (See p. 1 of Medina testimony). Dr. Medina further stated that he personally inspected the Yadkin River Basin from the Yadkin College gauge down the river past the Perkins site all the way to the High Rock Reservoir and on below to the Tuckertown Reservoir. He also stated that he has personally inspected the Lake Norman sites (Tr. p. 3444). Dr. Medina testified that the alternate site evaluation by the NRC Staff was inadequate and that the Lake Norman site and the Wateree site were clearly superior. (See p. 1 of Medina testimony and Tr. 3445). Dr. Medina testified that the bases for his conclusion of the obvious superiority of Lake Norman were the difference in size between Lake Norman and High Rock, which are the affected reservoirs, the flow rates and the control of water flow in the respective Catawba and Yadkin basins, and the lack of the requirement for a Carter Creek Reservoir at the Lake Norman sites. (Tr. 3455, testimony of Dr. Medina at p. 2). Dr. Medina further testified that the average flow rates which were relied upon in the Yadkin Basin, where there is no reservoir control by the Applicant, is extremely unreliable in that no risk analysis was done by the Applicant on the Yadkin flow rates, which was an additional weakness in the Perkins site (Tr. 3459). Dr. Medina testified that he had studied for his Ph.D. under one of the professors who designed the Ryan and Harleman model which had been used by the Applicant to measure the environmental impact of lake cooling on Lake Norman. He stated that a computer model of a proposed Perkins Plant on Lake Norman could be run in two to three weeks and should be done to determine the likelihood of using surface cooling as an alternative to cooling towers on one of the Lake Norman sites. (Tr. 3701, 3702, 3703, and 3704). Dr. Medina further testified that the Lake Norman site was preferable because of the greater volume of Lake Norman which provided four times the dilution factor as that of High Rock Lake (Tr. 3696).

51. Dr. Alan H. Lipkin is an Assistant Professor of Chemistry at Winston-Salem State University. He received a Ph.D. in organic chemistry and has been teaching general chemistry, organic chemistry, investigations and research in chemistry, and seminars in chemistry since 1973. He has been a consultant for private and public agencies, and specifically has been involved

in organic synthetic procedures, glassware, glass blowing and glass sculpture, and has set up analytic procedures for certain metals. He has written four publications in addition to this thesis and is an active chess champion. (Professional qualifications of Dr. Lipkin attached to the testimony of Dr. Lipkin, following Tr. 3438). Dr. Lipkin testified that the Staff evaluation was deficient in many particulars. He had prepared a detailed matrix which was based upon an article written by a Mr. Joplin of Florida Power and Light Company, which was obtained from the files of Duke Power Company. Dr. Lipkin factored the Applicant's raw material into the Joplin matrix and in certain portions of the matrix factored in his own evaluations. He concluded that there were several sites obviously superior to the Perkins site. (See testimony of Dr. Lipkin and his attached exhibits following Tr. 3436, and the testimony of Dr. Medina).

52. Dr. Lipkin testified that he considered the Perkins site to be an adequate site, but that the other sites which he evaluated in his matrix were better sites (Tr. 3513). Dr. Lipkin explained that he used the Joplin method and Duke Power Company information as much as possible and that he supplemented this with his own knowledge of the material provided by the Applicant in Staff Exhibit 10 (Tr. 3554, 3556, 3605, and 3614). Dr. Lipkin identified some of the obvious comparative factors between Lake Norman and the Perkins site as the considerable difference in size of the two reservoirs and the possible versatility of once-through cooling at the Norman site (Tr. 3527 and 3530). He also referred to the requirement of a Carter Creek impoundment at the Perkins site which was not required at the Lake Norman sites. Dr. Lipkin further pointed out that the Joplin matrix which he used was conservative on the crucial water question in that the Joplin matrix only provided for a 32 percent consideration of water matters and the Duke matrix provided for approximately twice that much consideration to water (Tr. 3645). The Lipkin matrix rates the Perkins site at 168 and the Lake Norman "E" at 202, which represents, according to Dr. Lipkin and his use of the Joplin matrix and the Applicant's information, an obviously superior rating for the Lake Norman site (Tr. 3645-48).

Board Analysis of Intervenors' Testimony

53. Dr. Medina argued that the choice of a site on the Catawba River, such as Wateree or Lake Norman "E," would be far superior to the proposed site on the Yadkin. He particularly advocated locating Perkins on Lake Norman with once-through cooling. This would greatly reduce the consumptive use of water (compared with cooling towers), would eliminate the expense of cooling towers, and would reduce the terrestrial impact since no additional reservoir (such as Carter Creek) would be needed. Whether Lake Norman is adequate for an additional large generating plant in addition to those

proposed is arguable. However, it is apparent that the State of North Carolina will not license once-through cooling. (State of North Carolina, Tr. 2957; Staff testimony, p. 8 following Tr. 3049. See also footnote No. 9 following paragraph 39 of the instant decision).

54. Dr. Medina concluded that Lake Norman "E" would be a better location for Perkins even if it were designed to use cooling towers. An impoundment such as Carter Creek would not be needed, a distinct advantage. However, it is by no means clear that the Catawba River would be less affected by the consumptive use of water. It has higher water quality than the Yadkin but there is no evidence that this is an important consideration. Dr. Medina testified that there are more water storage areas and dams on the Catawba River above the Lake Norman site than there are above the proposed Yadkin River site—consequently, there is the possibility of more uniform flow. Conversely, however, the average flow of the Catawba is less than the Yadkin and it now has greater variation in flow rate.

55. Dr. Medina also argues that the volume of Lake Norman is four times greater than High Rock and it therefore would provide greater dilution. It is by no means clear that this is an important consideration, since Perkins is located many miles above High Rock Lake and we have previously found that the impact of Perkins on High Rock Lake will not be serious.

56. We agree with Dr. Medina that Lake Norman "E" would be a good site for the Perkins plant but the evidence to show that it is "obviously superior" to the Yadkin River site is lacking.

57. Although the Board found Dr. Lipkin's attempt to apply the Joplin matrix to the Perkins site and his choice of alternate to be very interesting, he lacked sufficient reliable data in his matrix to arrive at a convincing demonstration of site superiority. Most of his data came from the Applicant in Staff's Exhibit 10. His attempt to fit data from the Applicant's matrix to the Joplin matrix was not convincing.

58. With regard to Dr. Lipkin's criticism of the Staff evaluation, we agree that he has pointed out a number of inadequacies. Our views in this matter are summed up in our evaluation of Staff testimony.

Analysis of Applicant's Testimony

59. As we pointed out above, the Applicant's Phase-I Siting Study was carried out, using reconnaissance data, to select a number of sites which might be suitable for locating future fossil and nuclear power plants. Of the 38 best sites, 8 were considered suitable for the location of a 4000-MWe nuclear station. An assignment of rating factors and weight to each of the environmental factors evaluated by the Applicant led to an assignment of quality points to each of the sites. The quality points ranged from 144 for Lake Hartwell to 122 for Board (Table 6—Phase I Siting Study). We agree that the

method used by the Applicant has led to a selection of the sites alternative to Perkins.

60. At the request of the Staff, the Applicant made an evaluation of the Perkins site using the same environmental factors and rating points. This analysis showed that Perkins had a rating of 144 points, the same as Lake Hartwell, and led the Applicant to conclude that there was no site obviously superior to Perkins. (Attachment 2 to Applicant's August 7, 1978 response to Staff. Staff Exhibit 10).

61. The relatively high rating of the Perkins site was a consequence of the assignment of the maximum number of quality points (15) to Perkins with respect to such important factors as 1) water availability during low flow—15 points; 2) reductions in stream flow—15 points; and 3) water shortage area—15 points. Both the Board and the Intervenor questioned this assignment—the Staff apparently accepted the ratings without serious question. We particularly focused our question on the comparison with Lake Norman.

62. A rating of 15 points was given to both Lake Norman and Perkins with regard to reduction in stream flow because the consumptive use of water by Perkins is less than 5 percent of the stream flow. Perkins' projected consumptive use is 2.4 percent of the average stream flow of the Yadkin; it would be 2.9 percent of the Catawba if located on Lake Norman (Tr. 3736). The comparison of the two sites is unbiased; certainly Lake Norman is not superior in this respect.

63. Undoubtedly, water availability during low-flow conditions is a very important consideration. However, the situation at Perkins site is very much relieved by Carter Creek impoundment. There will be no net withdrawal when the flow is less than 1000 cfs, so the maximum effect would be a 10 percent reduction in flow from 1100 cfs to 1000 cfs. Although this will have some adverse effect on water quality and dilution capacity, we have considered it to be acceptable in view of the benefits. Whether the situation would be improved at a Lake Norman site is not evident. Water quality in the Catawba River is considerably better than the Yadkin River, which may be a plus but is arguable. There are more dams and reservoirs above Lake Norman than there are above Perkins, so it would be easier to regulate the flow. But at present the 7Q10 flow in the Catawba is much less than the Yakin. The benefits of a smoothed flow would depend on the adoption of government regulation. It is not apparent that Lake Norman is indeed better with respect to water availability during low flow. The Applicant's assignment of fifteen points to each site is reasonable. Lake Norman is not obviously superior in this respect.

64. The Intervenor has contested the Applicant's assignment of 15 quality points to the Perkins site with respect to "water shortage area." The Applicant has assigned fifteen points to both Perkins and Lake Norman. The record does not show the criteria used by Duke Power Company in assigning points for the siting factor "water shortage area." The Staff has taken no position. As

discussed in our Partial Initial Decision, the State of North Carolina held extensive hearings before deciding that the Yadkin was not a capacity-use area.

65. In our Partial Initial Decision, we recognized that perhaps the most serious impact of Perkins was the consumptive withdrawal of 100 cfs of water from the Yadkin River. At that time we relied heavily on the findings of the North Carolina State Environmental Management Commission in arriving at our conclusion that the impact would be tolerable in light of the benefits even when projected into the future. We also adopted the North Carolina State condition of zero net withdrawal when the river flow falls below 1000 cfs. We now must decide whether any of the alternate sites are obviously superior, particularly when the water requirements of future users are considered. We have particularly focused on sites such as Norman "E" and Wateree on the Catawba River in view of the testimony of Intervenor's witness Medina.

66. Although Dr. Medina pointed out that the water quality in the Catawba was better than the Yadkin and that there was more capability for smoothing out stream flow on the Catawba, he did not demonstrate that the Catawba Basin was better able to accommodate the loss of water from a large nuclear station than the Yadkin.

67. Applicants' witnesses Dail and Blackman compared the Catawba and Yadkin rivers with respect to their relative capacities to tolerate electric generating stations. Both rivers have such stations at present. If Perkins is completed and operated, there will be on the Yadkin 4.9 MWe of power generated per cfs of flow at 7Q10 conditions. The corresponding figure on the Catawba is 12.11 MWe. The Catawba will bear nearly double the stress of the Yadkin (Tr. 3677). They also compared the two river basins with regard to projected consumptive loss due to electric generating stations per million inhabitants in the respective river basins. For the Catawba Basin the figure is 76.7 cfs per million people; for the Yadkin Basin (with Perkins) it is 68.5 cfs. Demand upon the two river basins will be approximately equal if Perkins is located on the Yadkin (Tr. 3742). If one compares the projected generating capacity in each basin with the respective drainage areas, the Catawba will have 1.8 MW/mi², the Yadkin (including Perkins) only 0.7 MW/mi². It would thus appear that the Yadkin River is a preferable location for a large power station.

68. The State of North Carolina concluded that the areas available for future expansion of wet industries was equally large (or larger) for the Yadkin Basin compared to the Catawba.

69. On the basis of the record, it is not apparent that any of the proposed sites on the Catawba River Basin is obviously superior to the Yadkin River Site with respect to consumptive use of water by the nuclear station. If all environmental impacts are considered, Perkins is one of the best—no other site is obviously superior.

Factual Conclusion

70. We have carefully considered the testimony of the Applicant, Staff, and Intervenor. On the basis of the record and for the reasons stated above, we find that there is no site obviously superior to the one proposed for Perkins on the Yadkin River.

No Conclusion of Law

71. The Board determined that it was appropriate to issue this Partial Initial Decision since it appears that consideration of alternate sites will not be affected by the consideration of the two motions from the Intervenor now filed with the Board—April 3, 1979, to reopen the record due to Three Mile Island No. 2; and on July 10, 1979, to dismiss the proceedings or stay the proceedings indefinitely, due to the schedule adjustment of the Applicant's need for the Perkins units. The Board cannot rule on either motion at this time because additional filings are to be received from the parties.

72. Since the matter of the alternate site consideration is within the cost/benefit conclusion of law required by NEPA, there can be no conclusion while other environmental matters are still subject to possible further consideration.

THE ATOMIC SAFETY AND LICENSING BOARD

**Walter H. Jordan, Member
Donald P. de Sylva, Member
Elizabeth S. Bowers, Chairman**

**Dated at Bethesda, Maryland
this 22nd day of February, 1980.**

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

**PUBLIC SERVICE ELECTRIC
AND GAS COMPANY**

**(Proposed Issuance
of Amendment to
Facility Operating
License No. DPR-70)**

**(Salem Nuclear Generating
Station, Unit 1)**

February 22, 1980

The Licensing Board in this spent fuel pool modification proceeding, *inter alia*, denies intervenors' motions to reinstate various contentions previously dismissed by the Board and reformulates for evidentiary hearing a question it raised earlier on the consequences of a gross loss of water from the storage pool.

MEMORANDUM AND ORDER

This memorandum and order is in response to four motions filed by Alfred and Eleanor Coleman, who have intervened in this proceeding, and to objections filed by the Staff of the Nuclear Regulatory Commission to a question which was propounded to the Staff by the Board. In this memorandum and order we deny three of the four motions filed by the Colemans, clarify the question we propounded to the Staff, and set the date for further hearings.

The Colemans' Motion to Reinstate Contention 7

The Colemans' Contention 7 was dismissed on May 25, 1978 by our Order Following Prehearing Conference. The Contention asserts that the licensee, Public Service Electric and Gas Company, has given inadequate consideration to the effect of storing spent fuel in the spent fuel storage pool at

the Salem Nuclear Generating Station, Unit 1, at Salem, New Jersey, for a period of time exceeding the duration of Salem's Unit 1 operating license.

In our Order, we held that consideration of storage beyond the duration of the operating license was expressly excluded by the decision of the Atomic Safety and Licensing Appeal Board in *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2) ALAB-445, 7 NRC 41 (1978). The intervenors have now moved to reinstate Contention 7 because, since the date we announced our Order, the United States Court of Appeals has remanded the *Prairie Island* decision to the Commission. *State of Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir., May 23, 1979). The Commission, in response to the remand, has issued a notice of proposed rulemaking addressing the questions which the court remanded. The rulemaking includes the issue of storage at reactor sites for periods exceeding the duration of operating licenses. In the notice the Commission said:

During this [rulemaking] proceeding the safety implications and environmental impacts of radioactive waste storage on-site for the duration of a license will continue to be subjects for adjudication in individual facility licensing proceedings. The Commission has decided, however, that during that proceeding the issues being considered in the rulemaking should not be addressed in individual licensing proceedings. These issues are most appropriately addressed in a generic proceeding of the character here envisaged. Furthermore, the court in the *State of Minnesota* case by remanding this matter to the Commission but not vacating or revoking the facility licenses involved, has supported the Commission's conclusion that licensing practices need not be altered during this proceeding. However, all licensing proceedings now underway will be subject to whatever final determinations are reached in this proceeding.

44 FR 61372, 61373 (Oct. 25, 1979).

Judging from the language of this notice, we believe it would be contrary to the Commission's policy for us to entertain Contention 7. The notice states clearly that long-term storage is to be addressed by the Commission generically, and not by Licensing Boards in individual proceedings. Since this and all other individual proceedings now underway will be subject to the outcome of the rulemaking, the Commission will undoubtedly provide an appropriate means for addressing long-term storage further if the Commission finds, as a result of the rulemaking, that on-site storage of spent fuel will exceed the duration of operating licenses. We find that Contention 7 was properly dismissed by our earlier Order, and, for the reasons stated above, we can find no basis for reinstating it now.

The Colemans' Motion Regarding Contentions 2 and 6

Contentions 2 and 6 assert that the Licensee has given inadequate

consideration to accidental criticality caused by deterioration of the modified spent fuel racks proposed to be installed in the spent fuel pool, and to the qualification and testing of the Boral material which the racks contain. We conducted evidentiary hearings on these Contentions in May of 1979. Since the record has not been closed on these Contentions, we will treat this motion as one to supplement the record, rather than to "reopen consideration" as the Colemans have requested.

The Colemans would have us supplement the record by adding a report dated April 10, 1979, made by the Commission's Office of Inspection and Enforcement. The report (No. 50-263/79-02) is based upon an inspection conducted from March 19 to March 23, 1979 at the Monticello Nuclear Generating Plant, operated by the Northern States Power Company at Monticello, Minnesota. The report found that after new spent fuel storage racks had been installed in the spent fuel pool at Monticello, 11 of the 676 fuel storage cells would not accept a go/no-go gauge used to check the dimension of the cells, and that of these 11, two would not accept a dummy fuel element. The change in the dimensions of the cells appears to have been caused by swelling of the cell walls due to the buildup of gas released within the walls by a chemical reaction between water and the Boral material. After the cells had been removed from the pool, vented (by drilling holes in the top of the cell walls), resized, and reinstalled in the pool, 6 of the original 11 cells would still not accept the go/no-go gauge. All of the cells accepted the dummy fuel element, however. The Colemans' motion to include this report is opposed by the Staff and the Licensee on the ground that the report is not relevant to the Licensee's proposal to install new racks at Salem 1.

At the evidentiary hearing in May, we received extensive testimony on the likelihood of swelling, the effects of swelling, and the possibility of venting the cells at Salem 1. In light of this, we do not believe that the inspection report can be dismissed as simply irrelevant to Contentions 2 and 6. We have also received testimony concerning differences in design between the racks at Monticello and Salem 1, and testimony concerning the Salem Licensee's plan not to use swollen cells, but this testimony affects the weight to be given to the inspection report rather than its relevance. We grant the Colemans' motion to supplement the record on Contentions 2 and 6 by including the inspection report.

The Colemans' Motion to Reinstate Contention 13

The Colemans' Contention 13 asserts that the Licensee has failed to consider adequately the cumulative impact caused by expanding spent fuel storage at Salem Unit 1 while also expanding spent fuel storage at Salem Unit 2, particularly with regard to releases of radioactivity. We dismissed this Contention on April 30, 1979 in response to a motion for summary disposition

filed by the Licensee. Our dismissal was based upon the failure of the Colemans to assert, at that time, a genuine issue of material fact.

In support of their motion to reinstate this Contention, the Colemans now argue that the Board should receive additional testimony for the purpose of comparing the occupational exposure which would result from the proposed reracking of Salem 1 to the occupational exposure which would result from the alternative of transshipment of spent fuel from Salem 1 to an expanded pool at Salem 2. The Colemans also argue that we should hear additional testimony on the question whether a reduction in the capacity factor of Salem 1 would make increased storage at Salem 1 unnecessary. These arguments are based upon a statement at the hearing by a witness for the Staff to the effect that the witness was unsure whether the occupational exposure required to expand the pool at Salem 1 would be greater than the exposure caused by transshipment to Salem 2, and that the witness' estimate was that the exposure from transshipment would be smaller (Tr. 1140-42). An additional basis for these arguments is a letter from the Licensee which states that the number of fuel assemblies which are estimated to be removed annually from the Salem 1 reactor is 56 instead of 64.

We agree with the Staff's position that these arguments and this testimony are irrelevant to Contention 13, which, after all, refers solely to the impact of the radioactive dose to the public from concurrent expansion of the pools at Salem 1 and Salem 2. The arguments and testimony concerning alternatives have no apparent connection with the level of emissions from the expanded pools, cumulatively or individually. The Colemans have never asserted, and apparently still cannot assert that the emissions for either or both pools will or could exceed permissible levels. The Colemans had a fair opportunity to assert a genuine issue of fact regarding these emissions at the time of the Licensee's motion for summary disposition, and failed to do so. The consequences of this failure cannot be avoided now by alleging that there may be new evidence which relates to matters not within the scope of the Contention. The question of alternatives to the proposed expansion of Salem 1 was presented originally by the Colemans in their Contention 9, which expressly covers the alternative of storing spent fuel from Salem 1 in the storage pools of other reactors. We now turn to the Colemans' motion to reinstate that Contention.

The Colemans' Motion to Reinstate Contention 9

Contention 9 asserts, among other things, that the Licensee has not considered adequately the alternative of shipping the spent fuel from Salem 1 to an independent storage site away from the reactor, or the alternative of storing spent fuel in the pools of other reactors after the pool at Salem 1 becomes full. We dismissed this Contention on April 30, 1979 in response to the Licensee's motion for summary disposition, finding at that time that the

Colemans had asserted no genuine issue of material fact.

In support of their motion for reinstatement, the Colemans first point out that the Staff, in concluding that the pool at Salem 1 would be filled before an independent facility becomes available, assumed that the reactor at Salem 1 would operate continuously during 1979 except for the normal refueling outage. In fact, the reactor was shut down for a substantial period in 1979 following its refueling outage in March. Second, the Colemans note that in a letter dated July 5, 1979, the Licensee has stated that instead of discharging 65 spent fuel assemblies annually, as originally planned, the Licensee now intends to discharge 50 assemblies during the first outage, 52 during the second, and 56 in subsequent annual cycles. The Colemans ask us to consider these two developments, together with the delay in the startup of the reactor at Salem 2, as new information, adequate to reinstate the portion of Contention 9 which refers to shipping the spent fuel from Salem 1 to an expanded pool at Salem 2, rather than expanding storage at Salem 1 as proposed by the Licensee.

We are unable to grant the Colemans' request because we do not believe that the new information, if taken as true, is significant, in the sense that it could alter materially the testimony which has already been received on the question of alternatives. At the evidentiary hearing on July 10, 1979, a witness for the Staff (Mr. Gary Zech) testified that, based upon the new rate of discharge of spent fuel from the reactor, the date upon which the present spent fuel pool would be filled was estimated at 1983 rather than 1982 Tr. 1026. The Staff had stated previously in its environmental impact appraisal that the date would be in 1982, assuming the higher annual rate of discharge. The Colemans cross-examined Mr. Zech extensively upon his conclusion from the new information Tr. 1027-1045. Counsel for the Colemans also asked Mr. Zech about the effect on his conclusion of the extended period in 1979 during which the reactor at Salem 1 was shut down. Mr. Zech responded that the effect of the shut down period would be to cause the pool at Salem 1 to fill in 1983 on the month on which the Salem 1 reactor was restarted in 1979 Tr. 1030. Mr. Zech also responded to questions concerning the effect of possible delay in beginning operations at Salem 2, Tr. 1031-1033, to questions concerning the possible expansion of storage capacity in the spent fuel pool of Salem 2, Tr. 1033-1039, and to questions concerning the possibility of shipping spent fuel from Salem 1 to the spent fuel pool at Salem 2 after an expansion of capacity at Salem 2 Tr. 1029-1040, 1043-1045. In his responses Mr. Zech indicated that the testimony given earlier by the Staff was not materially affected by the new information. Mr. Zech still concluded that the pool at Salem 1 would require expansion despite the shut-down in 1979 and the lower rate of annual discharge described in the Licensee's letter. Of course, these responses were subject to being tested in the same cross-examination which elicited them.

The Colemans' motion to reinstate Contention 9 comes almost four months after Mr. Zech's testimony was given. The motion still does not assert

that the new information should now result in any particular alteration of the Staff's findings or should affect the outcome of this proceeding in any particular way. The motion says only that the information "would likely have produced a far different result . . ." if it had been known when the Staff conducted its initial review of the application. In our judgment, a generality such as this falls far short of the specificity appropriate to a motion to reinstate a contention for newly-discovered evidence. If the proponent of such a motion cannot state clearly why the new information could significantly affect the testimony which has been received, or the outcome of the proceeding, the motion should fail. *See, e.g., Kansas Gas and Electric Company (Wolf Creek Generating Station, Unit 1) ALAB-462, 7 NRC 320, 338 (1978)*. In light of the vague statements in the motion and the full opportunity, described above, to probe the new information on cross-examination, there is no ground upon which to alter the consequences of the Colemans' failure to assert a genuine issue of fact when Contention 9 was dismissed in April of 1979.

Objections to One of the Questions Posed by the Board on April 18, 1979

On April 18, 1979 the Board posed three questions to the Staff. They were as follows:

1. To what extent did the accident at Three Mile Island affect the spent fuel pool at that site?
2. If there had been an explosion or "meltdown" at Three Mile Island, what effect would that have had upon the spent fuel pool? To what extent would it have mattered how much spent fuel was present at the pool?
3. 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? If an explosion or "meltdown" occurred at Salem, to what extent would that affect the spent fuel pool? To what extent would it have mattered how much spent fuel was present at the pool at Salem?

The Board agreed to withdraw question number 2 as unnecessary after a telephone conference call with the parties on April 19, 1979. We held evidentiary hearings on question 1 and the first sentence of question 3 on July 11, 1979. We now take up the Staff's objection to the second and third sentence of question 3.

The Staff's objection proceeds from the theory that the type of postulated accident to which these sentences refer is a "Class 9" accident, and that the Commission's policy is that such accidents are not to be considered in individual licensing proceedings. A Class 9 accident has been described as follows:

The occurrences in Class 9 involve sequences of postulated successive failures more severe than those postulated for establishing the design basis

for protective systems and engineered safety features. Their consequences could be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defense in depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low. For these reasons, it is not necessary to discuss such events in applicants' Environmental Reports.¹

In order to clarify the meaning of proposed Annex A, we asked the Staff whether the accident in March of 1979 at Three Mile Island-2 was a "Class 9" accident. We asked the Staff whether, in light of the fact that the accident produced a breach of the containment, the accident involved a sequence of successive failures more severe than those which the safety features of the plant were designed to prevent. On August 8, 1979 the Staff responded that the accident at Three Mile Island-2 was indeed a Class 9 accident.² The Staff also stated that the amount of radioactive material released was small, and represented a very small number of additional health effects to the opposite population. Taking all the Staff's statements together, the Staff's position is that 1) the consideration of Class 9 accidents is contrary to Commission policy, 2) the reason for this policy is that the probability of such accidents is remote, and 3) a Class 9 accident nevertheless occurred at Three Mile Island-2 in March of 1979.

The source of the Commission's policy on Class 9 accidents is the proposed Annex, which has never been adopted as a rule. The Annex did state, however, that the "Commission expects that the provisions of the proposed amendments will be useful as interim guidance until such time as the Commission takes further action upon them " 36 FR 22851. The purpose of the Annex was to meet the Commission's obligations under the National Environmental Policy Act of 1969. Pursuant to the Annex, the Staff does not require applicants to describe the environmental effects of Class 9 accidents in their applications, nor does the Staff conduct an environmental review of such accidents in its evaluation of an application. The Commission's legal staff has defended the Staff's practice in court, and has prevailed on the theory that the low probability of these accidents means that NEPA does not require them to

¹ *Proposed Annex A to Appendix D to 10 CFR Part 50* (36 FR 22851, Dec. 1, 1979).

² The Staff supplied the Board with a statement by Mr. Jim Martin, of the Staff's Division of Site Safety and Environmental Analysis, expressing Mr. Martin's view that the accident at Three Mile Island-2 was not a Class 9 accident. The Staff also furnished a statement by Mr. Frederick D. Anderson, of the Division of Siting, Health and Safeguards Standards, to the same effect. Earlier, on June 29, 1979, Mr. Lee V. Gossick, Executive Director for Operations, had stated in a letter to Congressman Robert J. Lagomarsino that "the Three Mile Island accident is not a Class 9 accident." The Staff took its official position before us notwithstanding these other opinions.

be considered. See, e.g., *Carolina Environmental Study Group v. AEC*, 510 F.2d 796 (D.C. Cir. 1975); *Hodder v. NRC*, Nos. 76-1709 and 78-1149 (D.C. Cir., December 26, 1978). The Commission's most recent discussion of Class 9 accidents occurred in *Offshore Power Systems* (Floating Nuclear Power Plants) CLI-79-9, 10 NRC 257 (September 14, 1979). In that case the Commission declined to review the generic question whether Class 9 accidents should be considered for land-based reactors; it did hold, however, that the Staff was correct in deciding to consider Class 9 accidents for floating plants. The Commission also stated that the generic question of Class 9 accidents for land-based plants would be better dealt with by rulemaking and it directed the Staff to develop recommendations for interim guidance and to bring to the Commission's attention "any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered." CLI-79-9, 10 NRC 257, 261. The *Offshore Power* case was decided after the Staff filed its objections to our question.

The Staff's decision in *Offshore Power* to evaluate Class 9 accidents resulted from the Staff's conclusion that the overall risk of harm associated with a floating plant, because of the "liquid pathway" of a radioactive release, was higher than for a land-based plant, and that license conditions designed to mitigate the higher risk might therefore be imposed. The Staff conceded that the probability of an accident at a floating plant was no higher than the probability of an accident at a land-based plant. Because the consequences would be more severe, the Staff considered the risk to be higher (risk being probability multiplied by consequences). The Commission permitted the consequences to be considered, although the Commission's decision did not specifically address the Staff's argument that the Annex was based upon risk rather than probability. The Commission limited itself to considering only one of the Staff's arguments, which was that the Annex did not apply to floating plants since these plants were not within the Commission's contemplation when the Annex was issued. A majority of the Atomic Safety and Licensing Appeal Board had agreed with this argument, but in its affirmance of the Appeal Board the Commission said only that it agreed with the Appeal Board's result. The Commission appears to have reached the result it did because the Staff had already analyzed the relevant data, and the Staff had concluded that there was "an environmental risk that requires specific mitigative actions." The Commission said the question really was whether the "Licensing Board . . . [should] blind itself" to this risk, and the Commission's answer was that it should not.

It is difficult to find the precise direction in which the *Offshore Opinion* points. Salem 1 sits on an artificial island at the head of an important estuary. It is surrounded by liquid pathways. Salem 1 does not float, but according to the analysis in *Offshore Power*, pathways, rather than floating, are the critical factor. It is also true that the possibility of greatly expanding the storage capacity of spent fuel pools was probably not within the Commission's

contemplation when the Annex was issued in 1971. Should one therefore conclude that the Annex was not intended to apply to such expansions? Finally, if we now order the Staff to prepare an environmental impact statement which considers the effect of a Class 9 accident at Salem 1, and the Staff in doing so finds that the additional fuel in the pool would significantly increase the consequences of an accident, we could not under *Offshore Power* blind ourselves to that finding in the hearing. If we rule that we have no power to order such a study, we leave open the possibility that such consequences may exist but will never become known. When one remembers that the Annex itself rests upon the assumption that Class 9 accidents are improbable, and one considers that a Class 9 accident recently happened, matters become difficult indeed.

We believe our surest course is to keep in mind our basic responsibility as a Licensing Board. We must determine whether the proposed increase in storage of spent fuel at Salem 1 can be accomplished without undue risk to the public. Risk, by its nature, includes consequences. The Appeal Board, in its review of the *Offshore* case, found a "cogent" argument in the notion that investigation of a Class 9 accident might be justified if the *consequences* alone exceeded the perimeters of the analysis which the Commission had in mind when it proposed the Annex. *Offshore Power Systems* (Floating Nuclear Plants) ALAB-489, 8 NRC 194, 219 (1978). Indeed, the dissenting member would have excluded Class 9 accidents on the basis of probability alone, (8 N R C at 225) but the majority did not.

The Appeal Board's result was sustained by the Commission. The Commission did not address, and surely did not discredit, the notion that severe changes in consequences might justify examining Class 9 accidents. In fact, the Commission directed the Staff to call attention to land-based plants where such an examination might be justified, thus suggesting that the acceptability of such an examination would not hinge entirely upon the notion that land-based and floating plants were different.

We are inclined to interpret these precedents as suggesting that where the consequences of an accident are qualitatively different from any analyzed before (or so different quantitatively as to be tantamount to being qualitatively different) we would not be precluded from giving that accident our attention, despite its low probability. We are encouraged in this direction by the Staff's finding, with which we agree, that a Class 9 accident has now happened. In light of the accident at Three Mile Island-2, we believe that the assumption of low probability upon which the Annex rests must be reconsidered, and pending that reconsideration we are reluctant to view the Annex as covering any matters beyond those clearly contemplated when the Annex was promulgated.

We have before us testimony (as yet not formally admitted) to the effect that the fuel pool expansion, per se, vastly increases the consequences of one particular accident occurring through one specific mechanism, viz, loss-of-

water (Testimony of Dr. Richard E. Webb, in Respect to Board Question No. 3). The proposed increase in storage is alleged to be equivalent to "the construction of 24 large power reactors from a radiological hazards standpoint" (*Id.* at p. 22). While this difference may or may not truly exist we have no proffered testimony to the contrary.

We have therefore determined that, as matters now stand, we cannot say that the increase in consequences which increased storage presents does not constitute a qualitative change in the consequences of a low-probability accident. We cannot say, therefore, whether that accident must be addressed in an environmental impact statement. Under the Commission's decision in *Offshore Power*, it is clear that we must consider such qualitatively different consequences if they are found to exist. Accordingly, we shall require an answer to a somewhat modified form of Question No. 3, a form that focuses upon a specific mechanism and upon the specific nature of the change which will occur with expanded storage. The question is:

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 expanded storage and those occasioned by the present pool?

We will accept in answer whatever measure of consequences each party sees fit to present; however, we encourage all to use some common measure, perhaps the potential dose to an individual who remains at the exclusion area boundary for a given period. We expect, of course, that each party will postulate and make appropriate calculations for some specific sequence of events, including heating, possible melting, and possible dispersion mechanisms.

Only after we have such a measure of the quantitative difference which the fuel pool expansion entails will we decide whether this accident should be addressed as a potential environmental impact.

Evidentiary hearings for the purpose of considering evidence on the above question shall be held in Salem, New Jersey at the time and place announced in the notice which accompanies this Memorandum and Order. The testimony already filed in response to the Board's question 3 shall be considered as pertaining to the above reformulation of question 3.

SO ORDERED

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

Gary L. Milhollin, Chairman

Dated at Bethesda, Maryland
this 22nd day of February, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

Docket No. 50-272

PUBLIC SERVICE ELECTRIC
AND GAS COMPANY

(10 CFR 2.206)

(Salem Nuclear Generating
Station, Unit 1)

February 7, 1980

The Director of Nuclear Reactor Regulation denies a request that the operating license for Salem Unit 1 be suspended or revoked on the basis of a finding that there will be no adverse effect on the continued existence of the shortnose sturgeon, an endangered species, in the Delaware River due to long-term operation of Salem Unit 1.

I

By petition dated October 18, 1979, Mr. and Mrs. Alfred Coleman pursuant to 10 CFR 2.206 of the Commission's regulations requested that a show-cause order be issued to Public Service Electric and Gas Company (hereinafter the "Licensee") to suspend or revoke the operating license for Salem Nuclear Generating Station, Unit 1 and the construction permits for Salem Unit 2 and Hope Creek Generating Station, Units 1 and 2. Notice of receipt of the Colemans' petition was published in the *Federal Register*, 44 FR 67253 (November 23, 1979).

The basis for the Colemans' request is alleged violations by the licensee of the Endangered Species Act of 1973, as amended,¹ (hereinafter the "Act"). The Colemans allege: (1) the fact that two specimens of *Acipenser brevirostrum*, shortnose sturgeon, an endangered species designated under 16 U.S.C.A. Section 1533, were found by the Licensee on the intake trash bars and screens of the Salem Nuclear Generating Station, Unit 1, constitutes a "taking" in violation of the Endangered Species Act, and (2) the continued operation of Salem Unit 1 and the construction and future operation of Salem 2 and Hope Creek, Units 1 and 2 are actions which jeopardize the continued existence of an endangered species because the "shortnose sturgeon is being impinged or is highly susceptible to impingement on the Circulating Water System (CWS) traveling screens and the Service Water System (SWS)

¹ 16 U.S.C. Section 1531 *et seq.* (1979).

traveling screens at the Artificial Island site." Consequently, the Nuclear Regulatory Commission should suspend or revoke the operating license for Salem Unit 1 and the construction permits of Salem Unit 2 and Hope Creek Units 1 and 2 in order to fulfill its responsibilities under the Act, *i.e.*, "insure that action authorized . . . by such agency . . . does not jeopardize the continued existence of any endangered species or threatened species . . ." 16 U.S.C.A. 1536(a)(1979).

For the reasons set forth below, the request by the Colemans with regard to Salem Nuclear Generating Station, Unit 1 is denied. Consideration of the request with regard to Salem Nuclear Generating Station, Unit 2 and Hope Creek Units 1 and 2 is still in progress and a decision on that request will be issued promptly when sufficient information concerning any possible effects of those plants on shortnose sturgeon in the Delaware River has been developed.

II

Following receipt of the Colemans' petition, the Commission staff conducted informal discussions with the National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NMFS) on the effects of operation of Salem Unit 1 and the construction and operation of Salem 2 and Hope Creek Units 1 and 2 on the endangered species, shortnose sturgeon. Under the Endangered Species Act, NMFS is charged with assisting other federal agencies in carrying out their obligations under the Act as they may affect certain endangered species.

Two specimens of shortnose sturgeon were known to have been involved in some way with impingement at Salem Unit 1. On January 12, 1978, one specimen, already dead, was collected from the trash bars at the Salem Unit 1 intake. On June 26, 1978, a second specimen was recovered from the screen wash water at the plant. It was in poor physiological condition and subsequently died despite attempts to resuscitate it in a flowing ambient water bath.

By letter dated October 31, 1979, the NRC requested, pursuant to the Endangered Species Act, formal consultation² with NMFS to determine "whether construction and operation of Salem 2 and Hope Creek 1 and 2 and long-term continued operation of Salem 1 and their associated intake structures would jeopardize the continued existence of this endangered species or result in the destruction or modification of any critical habitat of this species." See Enclosure 1.

On December 7, 1979, NMFS issued *Section 7 Consultation - Threshold Examination and Biological Opinion*. A copy is attached and is hereby

² 16 U.S.C. Section 1536(a) & (b).

incorporated by reference. The National Marine Fisheries Service did not review the construction and operation phase of Salem Unit 2 and Hope Creek Units 1 and 2. Consequently, they did not render an opinion on the possible impact of those activities on the shortnose sturgeon in the Delaware River. In the opinion they did, however, review the effects of continued operation of Salem Unit 1. They concluded that:

the present water intake program of the once-through system at Salem Unit 1 is not likely to jeopardize the continued existence of the shortnose sturgeon, nor is it likely to destroy or adversely affect habitat that may be critical to the shortnose sturgeon.

III

Based on this finding by the National Marine Fisheries Service that there will be no adverse effect on the continued existence of the shortnose sturgeon in the Delaware River due to long-term operation of Salem Unit 1, the request by the Colemans for suspension or revocation of the Salem Unit 1 operating license is *denied*.³

The requests for action regarding Salem Unit 2 and Hope Creek, Units 1 and 2, are still under consideration and action on those requests will be taken promptly following the development of additional information regarding the possible effects of the construction and/or operation of those plants on shortnose sturgeon in the Delaware River.

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 Salem Nuclear Generating Station, Unit 1, located at Salem Free Public Library, 112 West Broadway, Salem, New Jersey 08079. A copy of this decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the

³ Whether or not the incidental impingement of the two shortnose sturgeon at the Salem Unit 1 facility constituted a violation of the Endangered Species Act is a question which lies outside the purview of this agency. See 16 U.S.C. 1540 (a)-(e) (1979). The NRC's obligation under the Act is to insure, in consultation with and with the assistance of the Secretary (of Commerce or Interior), that action authorized by NRC does not jeopardize the continued existence of an endangered species. That has been done in this case.

date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

FOR THE NUCLEAR REGULATORY COMMISSION

**Harold R. Denton, Director
Office of Nuclear Reactor Regulation**

**Dated at Bethesda, Maryland,
this 7th of February, 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION
Harold R. Denton, Director

In the Matter of

Docket Nos. 50-3
50-247

**CONSOLIDATED EDISON
COMPANY OF
NEW YORK, INC.**

(Indian Point
Units 1 and 2)

**POWER AUTHORITY OF
THE STATE OF NEW YORK**

Docket No. 50-286
(10 CFR 2.206)

(Indian Point Unit No. 3)

February 11, 1980

The Director of Nuclear Reactor Regulation grants in part and denies in part a petition that requested: (1) revocation of the operating license for Indian Point Unit 1, (2) an order requiring the licensee to submit a plan to decommission Unit 1, and (3) suspension of operation of Units 2 and 3 pending resolution of various safety-related issues.

ATOMIC ENERGY ACT: SANCTIONS

In order to revoke a license effective immediately, the Commission must, pursuant to section 186b. of the Atomic Energy Act, follow the provisions of section 9(b) of the Administrative Procedure Act.

TECHNICAL ISSUES DISCUSSED:

Acceptability of diesel generator building, automatic transfer switching, and auxiliary feedwater system; fire protection; operation of facility pending resolution of unresolved safety issues; post-accident monitoring; equipment aging; asymmetric loss-of-coolant-accident loads.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated September 17, 1979, the Union of Concerned Scientists

(UCS) requested that the Nuclear Regulatory Commission (the Commission) revoke the provisional operating license for Indian Point Station Unit 1, order the licensee to submit a plan to decommission Unit 1, and suspend operation of Units 2 and 3 pending resolution of various safety-related issues. The UCS asks the Commission to hold a hearing on the matters raised in the petition as a basis for determining whether to permit resumed operation of Units 2 and 3. Consolidated Edison Company of New York (Consolidated Edison) holds the provisional operating license for Unit 1 and the operating license for Unit 2. The Power Authority of the State of New York (PASNY) holds the operating license for Unit 3. On October 26, 1979, the Commission formally referred the UCS' petition to the NRC Staff (the Staff) for treatment pursuant to 10 CFR 2.206. A notice that the petition was under consideration was published in the *Federal Register*, 44 FR 67251, on November 23, 1979.

Various persons have submitted responses to the UCS petition or have indicated their support of the petition. The two licensees each submitted responses, both dated September 28, 1979, to the UCS petition. The UCS replied to these two responses on October 25, 1979, with corrections dated October 30, 1979. The Commission has also received statements in support of the UCS petition on behalf of the Attorney General of the State of New York (November 16, 1979), from the Mid-Hudson Nuclear Opponents (November 27, 1979), from the New York Public Interest Research Group (January 3, 1980), from the Citizens Energy Council (January 4, 1980), from the Lead and Environmentally Aware Future¹ (January 12, 1980), and from Women Opposed to Nuclear Technology (January 14, 1980)¹. The Scientists and Engineers for Secure Energy, Inc., filed a statement opposing the UCS

¹ These statements do not contain requests for relief or provide bases for relief that differ substantially from those found in the UCS petition. The staff has considered these statements in its review of the UCS petition. The New York Public Interest Research Group (NYPIRG), however, also cites in its statement potential dangers of theft of spent fuel and of a terrorist takeover of the Indian Point Station as a basis for suspending or revoking the Indian Point licenses. In the absence of facts which would substantiate these fears, NYPIRG has not provided a sufficient basis for the relief requested as required under 10 CFR 2.206(a). The staff continues to reexamine the compliance of these units with security regulations, and deficiencies so noted will be corrected. The licensees have made significant improvements in security as required by 10 CFR 73.55, which will provide adequate protection from such threats. In addition, the risks of accidents resulting from malevolent action will be reduced by the interim and long term action described herein. Some of these statements also cite concerns regarding the Ramapo fault, contamination of ground water and geology of the site. Concerning the Ramapo fault, the Staff, and Atomic Safety and Licensing Appeal Board have concluded that the fault is not a capable fault within the meaning of Appendix A to 10 CFR Part 100 of the Commission's regulations. The ACRS examined the site seismicity and did not disagree with these conclusions. The Indian Point 3 Safety Evaluation, dated September 21, 1973, considered potential contamination of ground water sources, the location of the Hudson River, and the geology of the site and concludes that the site was acceptable.

petition (January 29, 1980). Also, several members of Congress from New York and other members of the public have expressed interest in the UCS petition. At a meeting held on February 5, 1980, the Commission heard various organizations and members of the public express their views on the UCS petition and was briefed by the Staff on its proposed disposition of the petition.

The UCS gives four primary bases for requesting the revocation of the Unit 1 provisional operating license and the suspension of the Unit 2 and Unit 3 operating licenses:

- (1) Unit 1, which has not operated since 1974, lacks safety features required to permit its resumed operation. However, the licensee has not pursued its application for a full term license or indicated that it intends to install necessary safety equipment, and therefore the provisional license for Unit 1 should be revoked and the facility decommissioned;
- (2) The Indian Point Station is located in a densely populated area, which raises questions concerning the suitability of the site, the feasibility of evacuation of the area around the site, and the need for additional protective measures to assure safe operation of the Indian Point reactors;
- (3) Unit 2 does not have some of the design features or equipment found in the subsequently licensed Unit 3; and
- (4) Safety deficiencies and unresolved safety issues common to Units 2 and 3 require resolution before operation of the facilities is continued.

The Staff's evaluation and response to the UCS petition is contained in the remainder of this decision. As discussed herein, the Staff agrees that certain measures should be taken to assure continued safe operation of Units 2 and 3 and that the provisional operating license for Unit 1 should be revoked. Accordingly, the UCS petition is granted in part and denied in part.

I. LICENSE REVOCATION AND DECOMMISSIONING UNIT 1

UCS asks (at pp. 10-13) that the Commission immediately revoke the Indian Point Station Unit 1 Provisional Operating License No. DPR-5 and order Consolidated Edison to present a plan for decontaminating and decommissioning the facility. The main thrust of UCS' complaint, with which the Staff essentially agrees, is that the pending application for conversion of License No. DPR-5 into a full-term operating license should not be permitted to continue in "regulatory limbo" and thereby result in an indefinite extension of License No. DPR-5.

Indian Point Station Unit 1 received License No. DPR-5 on March 26, 1962 under the authority of a since repealed portion of 10 CFR 50.57 [25 FR

8712 (1960), *repealed*, 35 FR 5317 (1970)], which provided for issuance of a provisional operating license as an interim step prior to issuance of a full-term operating license. Under 10 CFR 50.57, provisional operating licenses were issued for periods of 18 months, and extensions could be authorized for "good cause." After several extensions, License No. DPR-5 was set to expire on December 16, 1969. The licensee submitted, however, on November 10, 1969, an application to convert License No. DPR-5 to a full-term operating license. Under the terms of the Commission's regulations, the application had the effect of extending the Provisional Operating License No. DPR-5, until such time as the application "has been finally determined" [10 CFR 2.109²]. Because the application for the full-term license has not been "finally determined," License No. DPR-5 is not "deemed to have expired" as provided in 10 CFR 2.109.

Since October 1974, however, License No. DPR-5 has been an "operating" license in name only. Unit 1 has been in a shutdown condition since October 31, 1974, which was the expiration date of a variance [39 FR 29215 (1974)] granted to the licensee from the requirements of the Commission's "Interim Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Power Reactors." On September 23, 1975, the Commission denied: (a) a request by the licensee for authorization which would have required another variance from the Interim Acceptance Criteria, (b) an exemption from the containment testing requirements of Appendix J to 10 CFR Part 50, and (c) extensions of time for compliance with two Commission Orders concerning other matters [40 FR 44895 (1975)]. There is presently no fuel in the Unit 1 reactor, and under the terms of License No. DPR-5 (Appendix A, Technical Specification 3.2.1), no fuel may be loaded into the reactor core or even moved into the reactor containment building without prior review and authorization by the Commission. Calculations have been made by the Staff and the licensee that show that the spent fuel now in the spent fuel pool has decayed sufficiently such that, in the event of a loss of water in the pool, this fuel can be air-cooled. Thus, there is no significant safety problem associated with the plant in its present defueled condition.

Since Unit 1 cannot meet current operational requirements and no plans exist for bringing it into compliance with current requirements, the operating

² This provision of the Commission's regulations reflects one of the procedural protections provided to licensees under the Administrative Procedure Act, specifically, the final sentence of Section 9(b) of the APA, 5 U.S.C. 558(c), which states: "When the licensee has made timely and sufficient application for a renewal or a new license in accordance with agency rules, a license with reference to an activity of a continuing nature does not expire until the application has been finally determined by the agency." The Staff agrees, however, that 10 CFR 2.109 should not be used to indefinitely extend an old license when the status of an application for a new or renewed license has remained essentially inactive for a long time.

provisions of License No. DPR-5 are not necessary. Accordingly, I have issued to Consolidated Edison the enclosed Order to Show Cause (Appendix A). The Order requires the licensee to show cause why the operating provisions of License No. DPR-5 should not be revoked and why the licensee should not submit a plan to decommission the facility. Thus, to the extent the UCS petition insofar as it concerns Unit 1 is granted.³

II. INDIAN POINT UNITS 2 AND 3 AND POPULATION DENSITY

With regard to Indian Point Units 2 and 3, the petition alleges (at pp. 3, 6-10) that the consequences of a serious accident at the Indian Point site because of a large surrounding population could be "enormous," and that, therefore, the Commission should determine the potential consequences of a "Class 9 accident," especially a core meltdown with breach of containment, as a basis for deciding whether these potential consequences are so severe as to render the Indian Point site unsuitable for a nuclear power plant. Each of the items identified in the petition pertaining to Indian Point Units 2 and 3 are addressed later in this decision. However, it is appropriate to first discuss separate efforts currently under way by the NRC Staff dealing with Indian Point Units 2 and 3 since it is believed that these efforts will adequately address the potential problems posed by the relatively high population density in the vicinity of the Indian Point site.

NRC STAFF EFFORTS

Subsequent to the Three Mile Island accident, the Staff recognized the need to reassess the emergency preparedness plans and capabilities of all nuclear power plants. Because of their location in areas of high population

³ The petition (at p. 23) asks that the Commission "immediately" revoke License No. DPR-5. Because the Commission must follow the provisions of section 9(b) of the APA in revoking any license under the Atomic Energy Act [sec. 186b. 42 U.S.C. 2236(b)], the Commission would have to find either that the licensee had wilfully committed (or omitted) some act for which a license could be revoked [see sec. 186 a.] or that the public health, safety, or interest requires immediate revocation. No violations of the Commission's requirements are at issue here, and as noted in the text *supra*, no significant safety hazard is posed by the plant in its present condition. The Staff does not believe, therefore, that an adequate basis exists for ordering the immediate revocation of License No. DPR-5.

The net effect of the instant Order to Show Cause is the same as an immediately effective order revoking the license of an operating plant. If Indian Point Unit 1 were operating, the immediately effective order would suspend further operation of the facility during the proceeding on the order. In the actual case before the Commission, Indian Point Unit 1 is not operating and may not operate without the Commission's approval of exemptions from its regulations and changes to the license. In light of these facts, it is unnecessary to "immediately" revoke License No. DPR-5.

density, the Indian Point Station Units 2 and 3 and Zion Station Units 1 and 2 (located north of Chicago, Illinois) facilities were recognized as plants for which additional measures might be necessary, including the possibility of a power reduction or plant shutdown.

An NRC Task Force has been formed to review Indian Point Units 2 and 3 and Zion Station Units 1 and 2. In addition the Staff, in conjunction with the Federal Emergency Management Agency (FEMA), is making emergency preparedness evaluations of these and other plants. These efforts, as they relate to the UCS petition, are discussed in detail below.

Emergency Preparedness Evaluations

On September 25 and 26, 1979 at meetings with both licensees, the Staff discussed its new criteria for developing emergency plans. These criteria were sent to all power reactor licensees in a letter dated October 10, 1979. On November 9, 1979, Consolidated Edison and PASNY submitted revised emergency plans in accordance with the new Staff criteria. On December 18, 1979, at a meeting held with the licensees, state, and local officials, and members of the public, the Staff's review of these revised plans was discussed. The licensees were requested to resubmit their plans, revised to reflect Staff comments, within two months of the meeting. State and local officials have indicated they would cooperate with the licensees in developing these plans.

Until these revised plans are reviewed and accepted by the Staff, the licensees have put into effect emergency plans, submitted in March 1979, to conform with Regulatory Guide 1.101. We find that it is acceptable for the plants to continue operation while review of the revised plans of the licensees continues. The Commission, in the Proposed Rule on Emergency Planning published in the *Federal Register* [44 FR 75167, 75169 (December 19, 1979)] recognizes "that the increment of risk involved in operation of reactors over the prescribed times in the implementation of this rule [by January 1, 1981] does not constitute an unacceptable risk to the public health and safety." Similarly, the Staff does not believe that "the increment of risk" involved in operation while we are reviewing the licensees' plans during 1980 requires suspension of operation of Indian Point Station Units 2 and 3.

NRC Task Force

In addition to the in-depth review and development of the new emergency plans discussed above, an NRC Task Force has been designated to review two sites of operating nuclear power plants, Indian Point and Zion, that are located in areas of relatively high population density. The purpose of this Task Force is to review these facilities to determine what additional measures and/or design changes can and should be implemented that will further

reduce the probability of a severe reactor accident and will reduce the consequences of such an accident by either reducing the amount of radioactive releases and/or by delaying any radioactive releases which would provide additional time for evacuation near the sites. The Task Force has evaluated certain interim measures that should be implemented by the licensees while the possible system design changes are being examined. Other measures will continued to be evaluated in the next few months. Some of the design changes being considered are a vented, filtered containment atmospheric release system, core retention devices, and hydrogen control.

Since design changes that may be decided upon will take one to two years to completely install, the Staff has identified, as part of the Task Force effort, a number of extraordinary interim measures that will be accomplished both by the licensees and by the Staff. These measures will significantly increase the level of safety at the Indian Point Station and thereby further reduce the probability and/or consequences of a severe reactor accident. By letters dated February 1, 1980, both licensees documented their commitment to implement these measures. I have formally confirmed this commitment by issuing Confirmatory Orders requiring this implementation at each of the two plants, Units 2 and Unit 3.

Included among those actions that are effective immediately by these two Confirmatory Orders are matters dealing with modes of operations, shift manning levels, enhanced training of operators, and special containment and low pressure-high pressure interface tests designed to add to the level of safety of operation of the facilities. Other requirements are to be implemented at various time intervals as specified in the Orders.

Those actions to be implemented by the Staff over and above those accomplished by the licensees include changes to the facility Technical Specifications to cause the Limited Conditions of Operation for safety-related systems to be at least as conservative as those in the Standard Technical Specifications for Westinghouse designed plants. In addition, enhanced Inspection and Enforcement presence will be established by providing a senior resident inspector for each operating Indian Point unit as well as a unit resident inspector.

Other Safety Considerations

In addition to the efforts described above, it should be pointed out that several compensating features already exist in the design of the Indian Point Station Units 2 and 3 which would limit the potential radiological consequences of a major accident. These include:

1. A containment weld channel and weld channel pressurization system: All containment liner welds are enclosed by continuous linear channels

welded to the liner to form a redundant seal at the joints of liner plates. Those channels which cover joints not buried in concrete are pressurized with air to a pressure exceeding calculated containment peak pressure. This eliminates leakage at liner plate joints.

2. A penetration pressurization system: In addition to the normal pressurization of electrical penetrations (with dry nitrogen), mechanical penetrations are pressurized with air to a pressure above calculated containment peak pressure. This eliminates leakage through penetration assemblies.
3. An isolation valve seal water system: Those double isolation valves, normally closed on a containment isolation signal, in water and small air systems, have the area between valves filled (if needed) and maintained in a filled condition at a pressure exceeding calculated containment design pressure by this system. This eliminates any leakage of containment atmosphere via an open (or ruptured) line through the redundant isolation valves.
4. Extra containment fan cooler capacity: Each containment has five fan cooler units, three of which are required for post accident containment cooling. The added capacity provides assurance of system availability.
5. Post-LOCA hydrogen control: Each unit has both recombiner and post-LOCA containment purge capability. The recombiner capability was added to provide additional conservatism.
6. A third auxiliary feedwater pump: Each unit has three auxiliary feedwater pumps. Two of these are 100 percent capacity motor driven pumps and the third is a 200 percent capacity steam turbine driven pump. All three pumps are intertied through lines and valves designed for an active or passive failure. This extra capacity over a 2-100 percent capacity pump configuration provides added assurance of system availability.
7. Containment atmosphere radioactivity removal (cleanup) has been provided. Each fan cooler unit is equipped with HEPA and charcoal filters for post-accident particulate and iodine radioisotope removal by entrapment.
8. Confirmatory Emergency Safeguards Features (ESF) actuation signals are sent to power operated valves which are not required to change position. This ensures that, if a valve had inadvertently been placed in an incorrect position, it would move to the correct position of ESF actuation. This has been applied to critical safety system valves.

In addition, each unit has additional margin in service water and component cooling water capacity and availability. They have auxiliary building air filtration (cleanup) systems and closed valve leak off systems to reduce offsite exposure due to valve stem leakage. They also have redundant electrical heat tracing on vital borated systems.

Thus, considering these existing engineered safety features, the emergency plans already in effect, and the extraordinary interim measures identified in the Confirmatory Orders, I have determined that Indian Point Station Units 2 and 3 are suitable for continued operation pending completion of the design reviews being performed by the NRC Task Force and pending completion of the Staff's review of the revised emergency plans.

III. OTHER MATTERS IDENTIFIED IN THE PETITION

Differences in Design Between Unit 2 and Unit 3

As a basis for requesting the suspension of operation of Unit 2, the UCS alleges (at pp. 13-17) that the designs of Unit 2 and Unit 3 differ in ways that have a "significant effect" on the risk to public health and safety created by operation of each unit. Therefore, UCS argues, the Commission should immediately backfit Unit 2 to incorporate changes made to Unit 3 as a result of the Staff's review of that unit. The UCS also requests the Staff to identify all design changes made "voluntarily" to Unit 3 to determine whether these changes should be implemented at Unit 2. The UCS identifies three features which the UCS believes require immediate action: diesel generator buildings, battery system, and auxiliary feedwater system.

The Confirmatory Orders (Appendices B and C) require that within 90 days the licensees jointly identify and review the significant differences between Unit 2 and Unit 3, and that they evaluate these differences in light of present regulatory standards and requirements. The licensees are required to provide a justification for the current design, or provide design change recommendations.

In addition, it should be noted that numerous changes have already been made to Unit 2 as a result of the licensee's review of Unit 3. During the licensing of Indian Point Unit 3, the Staff and the licensee (at that time Consolidated Edison was the licensee for both Indian Point Units 2 and 3) did reevaluate Indian Point Unit 2. As a result of this reevaluation, described in a letter dated September 4, 1976, transmitting Amendment No. 20 from Robert W. Reid, NRC, to William J. Cahill, the following changes were made to Unit 2:

1. A second independent and redundant Safety Injection (SI) Block Switch was added.
2. Separate annunciation devices were installed which alarm when either train of Engineered Safety features logic has been bypassed.
3. A second independent pressure transmitter was installed to provide a separate, independent interlock signal to the Residual Heat Removal (RHR) suction valves 730 and 731.

4. The electrical interlock between SI valves 888A and 888B and RHR valves 730 and 731 was changed such that the valve 730 was interlocked with valve 888A and valve 731 was interlocked with valve 888B.
5. Contacts, which open upon safety injection actuation, were added in series with the following switches or interposing relay contacts:
 - a. Switch 3
"43/RS-3" trip to each RHR pump
 - b. Switch 6
"43/RS-6" open signal to valves 888A and B
"43/RS-6" close signal to valves 746 and 747
 - c. Switch 7
"43/RS-7" trip to each SI pump
6. Miniflow bypass valves 743 and 1870 for the RHR pumps were made passive by having their electric power physically disconnected and locked in the open position.
7. Two circuit interrupting devices were added between the automatic transfer device and each DC bus. (See subsequent discussion on automatic transfer devices and battery system.)

In addition to these modifications resulting from a comparison to Indian Point 3, other reviews resulted in further backfitting at Indian Point Unit 2. Some significant items include security improvements to meet 10 CFR 73.55, fire protection (described in our SER dated January 31, 1979 supporting Amendment No. 46), installation of "J-tubes" to prevent feedwater hammer, modifying or relocating valves and electrical equipment inside containment that would have been submerged following a loss-of-coolant accident, modifications to eliminate single failures of ECCS, modifications to preclude overpressure events, and modifications to meet the TMI-2 lessons learned requirements.

Nevertheless, as indicated above, the licensee is required to perform a review and justify any significant differences that currently exist between the two units, because all significant differences may not have been evaluated during the previous reviews.

The petition cites three specific examples of alleged safety significant design differences between Indian Point 2 and 3. These are the diesel generator building, the battery system, and the auxiliary feedwater system. Each of these is discussed below.

Diesel Generator Building

The Staff's fire protection review of Indian Point Unit 2 required that significant changes be made to the diesel generator building. As stated in our January 31, 1979 Safety Evaluation Report (SER), the licensee will erect

shields between the diesel generator units, provide one-hour fire proofing on the building structure, and install backflow prevention check valves on drain lines. The fire proofing on the building structure was completed during the summer 1979 refueling outage, and the other modifications will be completed by the end of the next refueling outage, presently scheduled for December 1980.

In addition, fire protection is provided by an automatic sprinkler system in the area, heat detectors that alarm in the control room, and fire hoses from fire hydrants near the area. The licensee has also implemented administrative procedures to prevent conditions that could lead to a fire, such as housekeeping inspections and use of protective blankets and fire watches during welding operations. A trained fire brigade onsite for all shifts has also been established.

Furthermore, as stated in the fire protection SER, the capability to attain safe shutdown (within 72 hours) and maintain safe hot shutdown independent of the diesel generators or offsite power will be provided by the end of the next refueling outage.

With respect to tornadoes, the location of the Indian Point Unit 2 diesel generator building makes it less susceptible to high winds than the Indian Point Unit 3 diesel generator building. Page 34 of the Staff's "Safety Evaluation of the Indian Point Nuclear Generating Unit No. 2," dated November 16, 1970, states: "Some natural protection from high winds is afforded the control room building and diesel generator building since they are protected by the turbine building to the west, the Indian Point Unit 1 turbine building, superheater building and containment to the south, the rising hillside to the east, and the containment and rising hillside to the north." The conclusion in that report "that Indian Point Unit 2 is adequately protected against high winds," is still valid.

Finally, there are presently available, and separately located, three gas turbine generators, at least one of which is required to be operable (Amendment No. 60, dated January 28, 1980) to place the reactor in a safe shutdown condition in the event that all three diesel generators and offsite power were lost.

Due to the protective features afforded the diesel generator building and due to the availability of other power sources, the Staff has concluded that the diesel generator building is acceptable pending completion of the above described modifications.

Battery System

The UCS alleges that the battery system for Indian Point Unit 2 is inadequate because the system contains only two batteries and relies on automatic transfer switching.

There are seven automatic transfer circuits used with engineered safeguards. Three automatic transfer circuits provide redundant 125V DC control power to the three diesel generators. The remaining four transfer circuits provide redundant power to the 480V diesel generator switchgear. Each transfer device receives its 125V DC power from the same two emergency battery buses. Two circuit interrupting devices between the auto transfer device and each DC bus have been provided. The Staff has verified that no single failure in the transfer device circuitry would cause the loss of either DC bus. Although it is possible to connect redundant power sources in parallel considering an undetected failure, two separate short circuits to ground (or a line to line short) and the failure to function of four overcurrent protection devices would be required to compromise redundant DC buses.

Ground detectors are used as an integral part of the Westinghouse battery chargers. If a ground were to be present on a DC bus, a ground indicating light would go out and a "battery charger trouble" alarm would annunciate in the central control room. The circuit grounding problem would thus be promptly detected, isolated, and corrected. Also, the licensee has incorporated a test procedure in its periodic battery testing program to assure operability of the ground detection system. Therefore, the design of these automatic transfer circuits, with the above periodic testing, meets the single failure criterion. On that basis, the Staff has concluded that a single failure in this system would not lead to a meltdown as alleged. Nevertheless, the Staff is reevaluating the acceptability of the automatic transfer feature of this system. Furthermore, during the fall 1978 refueling outage, the battery system was upgraded by the installation of two additional batteries to provide power for two channels of instrumentation (bringing the total to four batteries for Indian Point Unit 2). The modification is described in the March 1, 1979 letter from William J. Cahill, Jr. to Boyce Grier, Director of NRC's Region I Office.

Auxiliary Feedwater System

The third specific item allegedly requiring backfitting is the auxiliary feedwater (AFW) system. A thorough review of the Indian Point Unit 2 AFW system was conducted by the Staff. The results were transmitted to the licensee on November 7, 1979. This NRC letter identified additional requirements for the AFW system. Consolidated Edison in its response dated December 19, 1979 proposed the following modifications:

1. Revise the Technical Specifications to limit the time that one AFW system pump and its associated flow train and essential instrumentation can be inoperable.
2. Develop emergency procedures for transferring to the alternate source of AFW supply.

3. Make the automatic start AFW system signals and associated circuitry and AFW flow indication safety-grade. (This is being done in conjunction with the NRC TMI-2 Lessons Learned Task Force Recommendations 2.1.7.a and 2.1.7.b.)
4. Develop procedures to assure AFW system function in the event of abnormal failure of the pneumatic operated AFW flow control or steam supply valves.
5. Install a redundant level indication and low-level alarm system on the condensate storage tank with annunciation in the control room.
6. Install a redundant flow path, with manual redundant valves, in parallel to the single flow path from the condensate storage tank.
7. Evaluate the capability of the present AFW system design to withstand internally generated missiles, and make any modifications deemed necessary.

The procedures identified in items (2) and (4) have already been put into effect and the revision to the Technical Specifications proposed in item (1) has already been issued in Amendment No. 60, dated January 28, 1980.

The hardware modifications identified in items (3), (5), (6), and (7) will be completed on an expedited basis as required by the Confirmatory Order.

The petition specifically alleges that a break in the steam pipe to the turbine-driven AFW pump could result in a total loss of AFW because the motor-driven pumps are located in the same room as the turbine-driven pump. As a result of studies of high energy line failures and flooding of areas containing safety-related components, certain plant modifications were made to protect the AFW system from the effects of a break in the steam pipe to the turbine-driven AFW pump. These include: (1) installation of isolation valves in the steam pipe, external to the room, that will close upon sensing high temperature in the room; and (2) modifications made to the doors to assure adequate drainage.

We conclude that the new procedures and Technical Specifications, in addition to modifications completed and scheduled to be completed on the auxiliary feedwater system within the time indicated above, are adequate to allow continued operation of the Indian Point Unit 2.

Other Safety Deficiencies Identified in the Petition

In addition to those items for Indian Point Unit 2, the petition alleges that there are other safety deficiencies, common to both Indian Point Units 2 and 3, that require suspension of operation of both units pending their resolution.

Cable Spreading and Fire Protection Systems

Paragraphs 50 through 54 of the petition concern cable separation and fire protection systems for those areas where fires could affect redundant divisions of shutdown systems. The UCS previously raised these issues in its petition to the Commission concerning the adequacy of fire protection on all overall basis at nuclear power plants. These items have been previously addressed generically in information provided by the Staff to the Commission to assist its evaluation of the UCS petitions of November 1977 and May 1978. The UCS petition on Indian Point (paragraphs 50 through 54) does not contain any information relative to fire protection which indicates the need for immediate action at Indian Point beyond any actions that may result from the Commission's final determination on the November 1977 and May 1978 petitions.

Nevertheless, many changes have been made, and are scheduled to be made, related to fire protection. These are discussed in detail in our Fire Protection Safety Evaluation Reports, January 31, 1979 for Indian Point Unit 2 and March 6, 1979 for Indian Point Unit 3. We find no basis to alter our conclusion that the schedule for completion of the remaining fire protection issues is acceptable and does not require a plant shutdown pending their completion.

Unresolved Safety Issues

The petition also refers to the 133 "unresolved safety issues" identified in an NRC Report to Congress. The items are identified in NUREG-0410 "NRC Program for the Resolution of Generic Issues Related to Nuclear Power Plant," dated January 31, 1978; and cover a variety of topics. Only some are related to safety; others are related to environmental matters and improving the regulatory process. We reported in NUREG-0510, "Report to Congress by the NRC Staff on Identifying Unresolved Safety Issues," dated January 31, 1979, that only 22 of these 133 generic tasks were "unresolved safety issues."

Furthermore, with respect to those tasks of safety significance, we discussed generically in NUREG-0510 the NRC's basis for permitting a plant to continue to operate with an "unresolved" safety issue. The bases for such a determination are (1) the issue does not apply, or has been resolved, for the plant under consideration; (2) interim measures assuring adequate safety of operation are being required at the plant pending final resolution of the issue; (3) resolution of the issue can be reasonably expected before the plant under consideration begins (returns to) operation, or (4) the likelihood of occurrence and/or the safety consequences of a scenario dealing with the issue is small. The Staff has specifically re-examined these issues for Indian Point Units 2 and 3 and has decided that continued plant operation is acceptable for the

above reasons for each of the outstanding issues. Furthermore, the Staff is making a concerted effort to accelerate resolution of outstanding generic and plant specific actions pertinent to Units 2 and 3.

The UCS notes (at p. 20) that there has been "no systematic evaluation of the need to upgrade Indian Point to account for important safety lessons learned." The Commission, as reflected in letters dated December 17, 1979 and January 3, 1980 from Chairman Ahearne to Representative Morris Udall, agrees that the NRC should undertake a comprehensive program for systematically reevaluating the safety of *all* current operating plants. Copies of those letters are attached as Appendices D and E to this determination. In particular, the December 17, 1979 letter provided comments on an amendment to H.R. 2608 offered by Representative Bingham. The letter states:

. . . two years ago the Commission undertook a reevaluation on a limited basis with respect to all of the older operating plants. We believe a variation of this Systematic Evaluation Program should be developed for application to all operating plants. Such a program should also address generic safety issues . . . It will take several months for the NRC staff to develop and propose, and for the Commission to approve, this systematic program for evaluating the safety of all operating plants. It most likely will include some elements of the ongoing Systematic Evaluation Program, in which evaluations are being made by the NRC staff of the design of the older plants with regard to some 130 safety 'topics'.

In addition to its general allegations concerning safety issues common to Units 2 and 3, the UCS specifically alleges that three unacceptable safety problems exist related to post-accident monitoring, aging of equipment, and asymmetric loads on the reactor.

Post-Accident Monitoring

The petition alleges that the Three Mile Island accident demonstrated the inadequacy of the post-accident monitoring. First of all, it must be recognized that the designs of instrumentation for Indian Point Unit 2 and 3 are different from Three Mile Island (TMI) Units 1 and 2 because the plants were designed by different nuclear steam suppliers. For this reason, some equipment (e.g., pressurizer level) may have a safety function in one plant and not in another. The pressurizer instrumentation for Indian Point Units 2 and 3 has a safety function and is already Class 1E whereas TMI's instrumentation did not have a safety function and was not class 1E. Because the pressurizer level measurement system in TMI was not required for safety, it was not protected from containment flooding nor was it reviewed for its capability to survive an accident or post accident environment.

We know of no Class 1E instrumentation at TMI that has failed to provide

the required accuracy during or after the TMI accident. The fact that pressurizer level was needed at TMI (and survived the accident environment, even though it was not environmentally qualified for an adequate period) contradicts the petitioner's argument of inability to monitor the parameters, the range and accuracy of the instrumentation, ability of the instrumentation to survive the accident, and post-accident environment. We do, however, acknowledge that by Bulletins and Orders and Lessons Learned activities we have required specific instrumentation improvements on a specified schedule. The licensees have met our requirements in this regard.

Post-accident monitoring has already been improved as part of the implementation of the TMI-2 Lessons Learned Short Term Requirements. The following modifications have been made on Unit Nos. 2 and 3.

1. A reactor coolant saturation meter (subcooling meter) to provide on-line indication of coolant saturation condition was provided. This will aid the operator in recognizing inadequate core cooling.
2. An acoustic monitoring system for positive pressurizer relief safety valve position indication was installed.
3. A plan has been established for an onsite radiological and chemical analysis facility with the capability to provide, within one hour of obtaining the sample, quantification of certain isotopes that are indicators of the degree of core damage, hydrogen levels in the containment atmosphere, and dissolved gases and boron concentration in liquids.

The staff believes that appropriate action to upgrade instrumentation has been identified and is being implemented independent of this petition. The petition alleges that there is no way to directly measure the water level or temperature in the core after an accident. An adequate indication of core submergence is available from the pressurizer level measurement systems as long as the reactor coolant system is subcooled. (This has been demonstrated graphically by the TMI-2 accident.) As previously mentioned, both plants have installed subcooling meters to comply with our Short-Term Lessons Learned requirements. The Staff therefore rejects the petitioner's allegations that the present lack of a direct measure of core water level is a safety deficiency since an acceptable alternate means of measurement is available.

With regard to core temperature measurements, the Staff maintains that measurement of hot and cold leg reactor coolant temperatures is sufficient to demonstrate that adequate temperature control is being exercised as long as adequate coolant circulation is maintained through the core. Core exit thermocouples are provided in Indian Point Units 2 and 3, which provide temperature indication directly adjacent to the core.

The petition alleges that the only temperature measurements at TMI-2 were from non-safety grade equipment, some of which "luckily" survived the

accident. Other temperature measurements were available at Three Mile Island but were meaningless until coolant flow was established because the parameters of interest involved heat transfer from the core. The only sensors available in the circulation path (inside of the reactor vessel) were the core exit thermocouples. These sensors are not Class 1E and are not required for any event in which adequate reactor coolant flow is maintained. As the TMI accident proved, and our survey later confirmed, the type of thermocouples used are inherently capable of surviving events such as TMI to the extent necessary to protect public health and safety. The number and types of temperature measurement systems in pressurized water reactors are similar from plant to plant.

In addition to the instrumentation added as part of the Lessons Learned requirements, and instrumentation that was already in place, the following activities will take place during 1980:

1. Both licensees are part of the Westinghouse Owner's Group that is performing analyses to determine if additional instrumentation is necessary to provide a better indication of inadequate core cooling.
2. The existing auxiliary feedwater flow indication will be upgraded to safety grade.
3. Extended range noble gas effluent monitors will be installed.
4. The capability for effluent monitoring of radioiodines will be established.
5. Extended range in-containment radiation level monitors will be installed.
6. Containment pressure indicators capable of measuring containment pressures up to three times the design accident pressure will be installed.
7. A continuous indication of hydrogen concentration in the containment will be provided.
8. Improvements will be made to the instrumentation for measuring containment level.

The above modifications, and the schedule for implementing them, are consistent with our Lessons Learned requirements. We, therefore, conclude that immediate shutdown of the two facilities is not necessary to upgrade post-accident instrumentation.

Equipment Aging

The staff acknowledges that new equipment may have been used in the original equipment qualification testing for Indian Point Units 2 and 3, and that no systematic effort was made to determine the length of time in service during which the results would remain valid. In order to assure that this aspect of equipment qualification is adequately addressed, the staff has included

consideration of the potential effects of aging in its current program to reevaluate the adequacy of equipment qualification in all operating reactors. This reevaluation is being conducted in conjunction with our review of the licensees' responses to IE Bulletin 79-01, "Environmental Qualification of Class 1E Equipment."

The licensees' responses of June 13, 1979 to IE Bulletin 79-01 will be evaluated in accordance with a set of screening guidelines set forth in a Staff document entitled, "Guidelines for Evaluating Environmental Qualification of Class 1E Bulletin 79-01B, dated January 14, 1980. The Bulletin requires additional information and evaluations from the licensees. Under these guidelines a specific qualified life should be established for equipment using materials that have been identified as being susceptible to significant degradation due to thermal and radiation aging. A list of materials which may be found in nuclear power plants along with an indication of the material susceptibility to thermal and radiation aging is provided in an Appendix to the guidelines. In addition, under the guidelines, ongoing programs should be in existence at the plant to review surveillance and maintenance records to assure that equipment which is exhibiting age related degradation will be identified and replaced as necessary.

We believe that the program outlined above provides reasonable assurance that equipment subject to significant degradation due to aging will be identified and that maintenance or replacement schedules will be adjusted accordingly. The Staff, additionally, is accelerating its evaluation of the adequacy of the equipment qualification program at the Indian Point plants. In the interim, the margins that exist in the equipment design provide reasonable assurance that equipment will function as required in the event of a design basis accident.

Asymmetric LOCA Loads

Another specific area discussed in the UCS petition deals with asymmetric loads from a postulated accident on the reactor. A generic study of the asymmetric loss of coolant accident (LOCA) loads problems was initiated by the Staff in 1977 to both gain a better understanding of this problem and to develop criteria for plant specific evaluations. This generic study, Task Action Plan A-2, described in NUREG-0510, was essentially completed in late 1979 and is expected to be published as a NUREG in February 1980.

Plant specific evaluations for the Indian Point 2 and 3 plants have been submitted to the Staff and are currently being reviewed against criteria derived from the Staff's generic study. The Staff's review is expected to be completed early in 1980. Until our review is complete, and modifications to the facilities are made, we have concluded that there is reasonable assurance that continued operation, pending completion of this task, does not constitute

an undue risk to the health and safety of the public for the following reasons.

As discussed below, the likelihood of occurrence of an initiating event of sufficient magnitude to seriously challenge the structural adequacy of the vessel support members or other structures is low. The disruptive failure of a reactor vessel itself has been estimated to lie between 10^{-6} and 10^{-7} per reactor year, so low that it is not considered as a design basis event. The rupture probability of pipes is estimated to be higher. The data base used by WASH-1400⁴ indicates a median value of 10^{-4} for LOCA initiating ruptures per plant-year for all pipe sizes 6" and greater (with a lower and upper bound of 10^{-5} and 10^{-3} , respectively). We believe that considering the large size of the pipe in question (up to 50" O.D. and 4-1/8" thick), a median value nearer 10^{-5} than 10^{-4} is more appropriate using the same data base. In addition, the quality control of the piping used in nuclear power plants is somewhat better than that of conventional piping, the piping whose data was used in most probability evaluations.

Because (1) the break of primary concern must be large and is of low probability, (2) only certain break locations lead to high loads, and (3) these welds are currently subject to preservice and inservice inspection by volumetric and surface techniques in accordance with ASME Code Section XI, we conclude that the probability failure of a pipe system or other structures is acceptably small and that reactor operation can continue while this matter is being resolved.

IV. CONCLUSION

The petition alleges that Indian Point Units 2 and 3 are "relics of the past" and the "NRC has marched resolutely 'eyes front,' not applying the lessons learned about safety to Indian Point."

This not so. Both plants have been significantly modified to meet NRC safety and security requirements. The safety modifications are too numerous to list, but many may be found in the correspondence between the NRC and the licensees that is available for public inspection in the NRC's Public Document Rooms and that includes the following documents:

1. TMI-2 Lessons Learned: NRC letters dated September 17, 1979 and October 30, 1979; Consolidated Edison letters dated October 17, 1979, November 20, 1979, December 7, 1979, December 17, 1979 and December 31, 1979; and Power Authority of the State of New York (PASNY) letters dated October 22, 1979, November 21, 1979, December 4, 1979, December 10, 1979, December 17, 1979, and January 8, 1980.

⁴ WASH-1400 was only used to support the Staff's engineering judgment, as stated in SECY 79-106 to the Commissioners.

2. Fire Protection: NRC letters dated January 31, 1979 for Unit 2 transmitting Amendment No. 46, and March 6, 1979 for Unit 3 transmitting Amendment No. 24.
3. Overpressure Protection: Consolidated Edison letters dated February 28, 1977, April 5, 1977, August 9, 1977, September 20, 1979, and December 5, 1977.

In addition, the NRC Task Force described herein will determine what design changes should be made to further reduce the probability and/or consequences of a severe reactor accident. Until these changes can be implemented, the extraordinary interim measures identified in the attached Confirmatory Orders (Appendices B and C) will provide additional assurance of safe operation of these facilities.

Because of the interim measures imposed by the Confirmatory Orders and in light of the discussion in this decision of the safety issues raised by the UCS, I have determined not to order the shutdown of Indian Point Units 2 and 3. For these same reasons I have not recommended to the Commission that it institute a hearing on all of the matters touched upon in the UCS petition.

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 White Plains Public Library, 100 Martine Avenue, White Plains, New York 10601. Additionally, a copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated this 11th day of
February, 1980.

[Appendixes to this Decision have been omitted from this publication but are available in the NRC Public Document Room, 1717 H Street, N.W., Washington, D.C.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket Nos. 50-443

50-444

**PUBLIC SERVICE COMPANY
OF NEW HAMPSHIRE, et al**

(10 CFR 2.206)

**(Seabrook Station,
Units 1 and 2)**

February 11, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations which requested an order suspending or revoking the construction permits for Seabrook Station.

**EMERGENCY PLAN: EVACUATION BEYOND THE LOW
POPULATION ZONE (LPZ)**

After a construction permit has been issued, any additional emergency planning requirements for evacuation beyond the LPZ need not be demonstrated until the operating license stage of review, absent further guidance from the Commission.

NEPA: CLASS 9 ANALYSIS

A Class 9 accident analysis is performed as part of the NEPA review only when the proposed plant has either a novel design, a unique design combined with a unique siting mode, or a high population density for the proposed site.

NEPA: CLASS 9 ANALYSIS

A Class 9 analysis precipitated by high population density may consist of an alternative site review, utilizing population density and distribution as a surrogate for accident consequences.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letter dated May 2, 1979, Mr. Robert A. Backus on behalf of the

Seacoast Anti-Pollution League (SAPL) transmitted a request pursuant to 10 CFR 2.206 for an Order suspending or revoking Seabrook Construction Permit Nos. CPPR-135 and CPPR-136. On July 30, 1979, and November 16, 1979, the New England Coalition on Nuclear Pollution (NECNP) and the Commonwealth of Massachusetts, respectively, filed memoranda in support of SAPL's request. By letter dated October 12, 1979, the State of New Hampshire filed a Statement of Position with respect to the SAPL request. The relief requested is premised on contentions that NRC has failed to:

1. require development of an evacuation plan beyond the low population zone as part of the construction permit proceedings, and
2. evaluate the consequences of a Class 9 accident, in determining site suitability, including the necessity for evacuation beyond the low population zone.

STAFF RESPONSE TO CONTENTION 1

SAPL's first contention is that the Commission has effectively reversed the holding of ALAB-390¹ by publishing for public comment in the *Federal Register* on August 23, 1978 (43 FR 37473) a proposed rule which, if adopted, would require the staff to determine if "emergency planning, which may include planning for evacuation measures, should extend to areas beyond the LPZ." On the basis of this proposed rule SAPL requests that the feasibility of evacuation beyond the LPZ be set down for determination at reopened construction permit proceedings.

In a letter dated November 21, 1979, the NRC Staff advised all licensees of plants under construction of additional staff requirements at the operating license stage in the area of emergency planning. These requirements, as presented in the joint EPA/NRC Task Force Report (NUREG-0396), were concurred in and endorsed in the Commission's policy statement issued on October 5, 1979, and published in the *Federal Register* on October 23, 1979 (44 FR 61123). The major recommendation of the report is that two Emergency Planning Zones (EPZ's) should be established around light water nuclear power plants. The EPZ for airborne exposure has a radius of about 10 miles; the EPZ for contaminated food has a radius of about 50 miles. These recommendations were based in part on Class 9 accident considerations.

On December 5, 1979, the Commission approved proposed rules, amending 10 CFR Part 50, for coping with emergencies at nuclear power reactors. 44 FR 75167 (December 19, 1979). The concept of dual EPZ's as

¹ The Appeal Board ruled in *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-390, 5 NRC 733, 747 (1977), that "under the Commission's regulations in their present form, consideration is not to be given in a licensing proceeding to the feasibility of devising an emergency plan for the protection (in the event of an accident) of persons located outside the low population zone."

defined in NUREG-0396 has been incorporated in the amendments, and will be required in the Emergency Plan of the licensee if the amendments are adopted as proposed. The publication of these proposed rules in the *Federal Register* supersedes the August 23, 1978 proposed rule change.

In its statement accompanying the publication of the proposed rules the Commission explicitly noted that it "is considering whether construction permits which have already been issued should be reconsidered because of the emergency planning considerations of the (proposed rules)."

By letter dated December 21, 1979, the NRC staff advised all power reactor licensees, and all construction permit holders and applicants of the proposed rule and of regional workshops to be convened to discuss the feasibility of the proposed rule, its impact, and the procedures for complying with its provisions.

In a letter dated December 26, 1979, the NRC staff requested that all licensees of plants under construction provide information regarding estimated evacuation times by March 31, 1980. This request did not change the position stated in the letter of November 21, 1979, i.e., that compliance with the additional requirements need not be demonstrated until the operating license stage of review. These estimates were requested so that the NRC can identify those "instances" in which unusual evacuation constraints exist and special planning measures should be considered. In some cases of extreme difficulty where a large population is at risk, special facility modifications may also be appropriate.

Therefore, pending receipt and evaluation of this information, adoption of the proposed rule, and guidance from the Commission on reconsideration of construction permits, it would be premature to reopen the Seabrook construction permit proceedings at this time.

STAFF RESPONSE TO CONTENTION 2

SAPL's second major contention is that the extremely low probability of the Class 9 accident occurrence has been undercut by the Commission's repudiation of the assessment risk values in the Reactor Safety Study (WASH-1400) and that "(t)he Staff, in order to avoid the evaluation of the consequences of a Class 9 accident in the performance of its NEPA² review, appears to have relied upon WASH-1400, the reactor safety study, more commonly known as the Rasmussen Report." Contrary to SAPL's contention, WASH-1400 was not the basis for evaluation of the consequences of accidents in the staff's NEPA reviews.

Commission guidance on the consideration to be given to accidents in the environmental review, including Class 9 accidents, is found in the proposed

² National Environmental Policy Act of 1969 (Public Law 91-190, 83 Stat. 852).

Annex to 10 CFR Part 50, Appendix D, which was published in the *Federal Register* on December 1, 1971 (36 FR 22851).

This Annex divided the spectrum of accidents, ranging in severity from trivial to very serious, into nine categories or classes. It directed that "for each class, except Classes 1 and 9, the environmental consequences shall be evaluated as indicated." Class 1 events were not to be considered because of their trivial consequences, whereas in regard to Class 9 events the Annex states as follows:

The occurrences in Class 9 involve sequences of postulated successive failures more severe than those postulated for establishing the design basis for protective systems and engineered safety features. Their consequences could be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defense-in-depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low. For these reasons, it is not necessary to discuss such events in applicants' Environmental Report.³

A number of developments have occurred since the publishing of the Annex in December 1971 which have had significant bearing on accident consideration for both safety and environmental reviews. The following summary of developments reflects the evolutionary change in the NRC's policies in this area.

- (1) **WASH-1400:** The publishing of the Reactor Safety Study (WASH-1400), first in draft form in August 1974 and in final form in October 1975 has had an effect upon accident considerations with regard to nuclear power reactors. Although this was not the first study that examined consequences of large radioactive releases, it was the first study to examine such events probabilistically and which attempted to arrive at an actual estimate of the probability of a core melt event. Staff practice, in environmental impact statements, has been to refer to the WASH-1400 study because it reflected a new methodology to assess the risks of severe accidents in a more quantitative fashion, but the staff has not relied on WASH-1400 findings in its environmental reviews.
- (2) **Risk Assessment Review Group:** In July 1977, the NRC organized the above group primarily to clarify the achievements and limitations of

³ A footnote in the annex states that such events also need not be discussed in the staff's Environmental Statements.

the Reactor Safety Study (RSS). The results of this study, issued in September 1978, to the effect that the Review Group was unable to determine whether the overall probability of a core-melt given in the RSS was high or low, have also been included in recent environmental assessments issued by the staff. On January 18, 1979, the Commission issued an "NRC Statement on Risk Assessment and the Reactor Safety Study Report (WASH-1400) in light of the Risk Assessment Review Group Report [NUREG/CR-0400]" in which was stated:

Accident Probabilities: The Commission accepts the Review Group Report's conclusion 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 and has taken and will continue to take steps to assure that any such use in the past will be corrected as appropriate. In particular, in light of the Review Group conclusions on accident probabilities, the Commission does not regard as reliable the Reactor Safety Study's numerical estimate of the overall risk of reactor accident.

- (3) **SECY 78-137, "Assessments of Relative Differences in Class 9 Accident Risks in Evaluations of Alternatives to Sites With High Population Densities":** The staff recommended to the Commission in SECY 78-137 on March 7, 1978 that:
 - (a) Pending completion of the Commission's review of its reactor siting policy that the staff perform quantitative assessments of the relative differences in Class 9 accident consequences and risks in the review of alternative sites where the population density exceeds the values given in Regulatory Guide 4.7.
 - (b) That the Commission consider the appropriateness of issuing some clarifying statement to the effect that the proposed Annex 10 CFR Part 50 Appendix D applies to land-based LWR's of the type licensed during the last decade or so, and that more detailed consideration of Class 9 accidents may be warranted for other types of sites or designs.
- (4) **Report of the Siting Policy Task Force (NUREG-0625):** In August 1979, the Siting Policy Task Force recommended that siting policy changes be made "To take into consideration in siting the risk associated with accidents beyond the design basis (Class 9) by establishing population density and distribution criteria." This report recommended that population criteria act as a surrogate for Class 9 risks, and that site-specific Class 9 accidents should not be analyzed and weighed in the decisional process.
- (5) **Commission Policy Statement:** On October 5, 1979, the Commission issued a policy statement, published in the *Federal Register* on October 23, 1979 (44 FR 61123), endorsing the guidance contained in a

report issued in December 1978, ("Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Plants. A Report prepared by a U. S. Nuclear Regulatory Commission and U. S. Environmental Protection Agency Task Force on Emergency Planning") (NUREG-0396). In so doing the Commission said that "it is appropriate and prudent for emergency planning guidance to take into consideration the principal characteristics (such as nuclides released and distances likely to be involved) of a spectrum of design basis and core melt accidents."

- (6) **SECY 79-594, "Class 9 Accident Considerations":** On October 31, 1979, in response to requests by the Commissioners in *Offshore Power Systems* (Floating Nuclear Plants), CLI-79-9, 10 NRC 257 (September 14, 1979),⁴ the staff submitted an information paper, SECY 79-594, entitled "Class 9 Accident Considerations." As stated in the paper, the staff is pursuing the following:

Preparation of an interim policy statement on accident risks under NEPA which include consideration of core melt events and which would withdraw the 1971 proposed Annex.

Preparation of recommendations for design features for all plants associated with core melt accidents.

Preparation of recommendations for rule making to revise 10 CFR Part 100, to encompass considerations of the risks associated with core melt events." (p. 5)

The Commission stated in *Offshore Power Systems, supra*, that it intends to handle the Class 9 issue by means of a generic rulemaking proceeding.

⁴ In *Offshore Power Systems*, the Commission stated:

"Our grant of review in this proceeding was limited to the narrow question certified to us by the Appeal Board and it is neither necessary nor appropriate for us to employ this particular adjudicatory proceeding to resolve the generic issue of consideration of Class 9 accidents at land-based reactors. Such a generic action is more properly and effectively done through rulemaking proceedings in which all interested persons may participate. Therefore, we are not today expressing any views on the question of environmental consideration of Class 9 accidents at land-based reactors which, as the Board noted, present risks different in kind and perhaps in magnitude from those risks presented by FNPs. However, we are concerned about this question and intend to complete the rulemaking begun by the Annex and to re-examine Commission policy in this area. To aid in that re-examination we ask our staff to:

1. Provide us with its recommendations on how the interim guidance of the Annex might be modified, on an interim basis and until the rulemaking on this subject is completed, to reflect developments since 1971 and to accord more fully with current staff policy in this area; and
2. In the interim, pending completion of the rulemaking on this subject, bring to our attention, any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered."

Pending the outcome of the rulemaking, the staff is to bring to the Commission's attention individual cases in which the environmental consequences of Class 9 accidents should be considered. See, *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775 (December 7, 1979).

To determine whether a particular case should be brought to the Commission's attention, the staff intends to apply the criteria set forth in the staff's brief to the Commission in *Offshore Power Systems*.⁵ In that brief the staff stated that "there is no need for a detailed NEPA discussion of Class 9 accident risks in nuclear power reactor licensing proceedings unless the special circumstances of a particular case indicate that Class 9 accident risks may be unusually higher or of a different character than for the typical land based nuclear power reactor. To date only three types of special circumstances have been identified that would trigger a detailed Class 9 accident evaluation: a high population density for the proposed site (above the "trip points" in the Standard Review Plan⁶ and Regulatory Guide),⁷ a novel reactor design (a type of power reactor other than a light water power reactor), or a combination of a unique design and a unique siting mode (a floating nuclear plant)" (Brief at p. 47).

I have reviewed the Seabrook facility to determine whether any of these special circumstances exist. As noted in Section 1.2 of the Safety Evaluation Report,⁸ the nuclear steam supply system for each Seabrook unit will consist of a pressurized water reactor using a four-loop reactor coolant system based on the design described in the Reference Safety Analysis Report.⁹ Since this report is referenced for several other facilities and since the particular design is basically similar to several other reactor designs of the Westinghouse Electric Corporation licensed for construction and operation, the Seabrook facility is

⁵ NRC STAFF'S BRIEF IN SUPPORT OF AFFIRMATIVE FINDING ON CERTIFIED QUESTION (January 12, 1979)

This brief was submitted to the Commission after the Atomic Safety and Licensing Appeal Board granted *Offshore Power Systems'* request to certify the "Class 9 question" to the Commission on September 29, 1978. ALAB-500, 8 NRC 323 (1978).

The certified question was:

"Are Class 9 accidents a proper subject for consideration in the Staff's environmental statement on the floating nuclear power plant manufacturing license application?"

⁶ "Standard Review Plan For The Review of Safety Analysis Reports For Nuclear Power Plants - LWR Edition" (NUREG-75-087) September, 1975.

⁷ "General Site Suitability Criteria for Nuclear Power Stations" Regulatory Guide 4.7, Office of Standards Development, United States Nuclear Regulatory Commission, November 1975.

⁸ "Safety Evaluation of the Seabrook Nuclear Power Station Units Nos. 1 and 2, Docket Nos. 50-443 and 50-444," U. S. Atomic Energy Commission, Directorate of Licensing, August 14, 1974.

⁹ "Reference Safety Analysis Report (RESAR-3 Consolidated Version)," Westinghouse Nuclear Energy Systems, November 1973.

a typical light water reactor facility and therefore is not a novel reactor design.

In *Offshore Power Systems*, the unique design and unique siting mode consisted of a nuclear power plant 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 population exposure from the liquid pathway for a floating nuclear plant is significantly greater than for a land based plant because of the inability to interdict releases in the vicinity of the floating nuclear plant.

The Seabrook site is bordered on three sides by marshland which is part of of the Hampton Harbor estuary. Hampton Harbor, a shallow lagoon behind the barrier beaches of Hampton Beach and Seabrook Beach, is the nearest surface water body which could be affected by liquid releases from a Class 9 accident.

Groundwater in the site area is generally a reflection of surface topography and is usually within 10 feet of the ground surface. The groundwater moves generally toward the marsh areas at a rate of several tens of feet per year.

If a Class 9 accident were to occur, the groundwater in the plant area would be first affected. However, since the reactor building is located about 200 feet from the marsh at the closest point, it would likely require several years for groundwater to migrate to the estuary. Due to this slow rate of groundwater movement, the staff concludes that there are no unusual features or special circumstances with regard to the groundwater contamination interdiction characteristics of this site that would distinguish it from other land based light water reactor sites to the extent that, under the present Commission policy, warrant consideration of environmental consequences of Class 9 accidents.

However, the task action plans contained in Draft NUREG-0660 (TMI Lessons Learned) as proposed to the Commission, identify Task Action Plan III.E.1.4 as an in-depth study of liquid pathway interdiction, which is one of the special factors identified in *Offshore Power Systems* which might trigger further consideration of Class 9 events. Assuming Commission approval, Seabrook and all other plants would be analyzed as part of Task Action Plan III.E.1.4. If that should result in the liquid pathway being identified as a unique consideration at Seabrook, and the Commission's interim policy on Class 9 accident consideration has not yet clarified the situation in this regard, methods of interdiction and mitigation will be identified. Based upon the liquid pathway study¹⁰ and preliminary discussions with Argonne National Laboratory on liquid pathway mitigation methods, the staff believes it is

¹⁰ "Liquid Pathway Generic Study - Impacts of Accidental Radioactive Releases to the Hydrosphere from Floating and Land Based Nuclear Power Plants," (NUREG-0440) February 1978.

possible to interdict within the time period identified above and reduce or prevent the migration of contaminated groundwater to the marsh.

Several methods of mitigation, including pumping and construction of slurry walls to prevent migration are available. However, site specific techniques, if required, will be identified as a part of the liquid pathway interdiction review.

In discussing the high population special circumstance, the staff's brief in Offshore Power Systems notes that the "special attention" called for by the Standard Review Plan and Regulatory Guide 4.7¹¹ in the case of sites exceeding the population level "trip points" entails a consideration of comparative population exposures for Class 9 accidents at the proposed site and alternative sites. The "trip points" apply to proposed new sites at the construction permit stage and were not evaluated nor proposed for plants beyond the construction permit stage. The consideration of population exposures for Class 9 accidents has been utilized by the staff in assessing the relative differences between the proposed site and the candidate alternative sites. The consideration of population exposure for Class 9 accidents is not used as an absolute site-specific criterion for evaluating the suitability of a proposed site and sites are not necessarily found unsuitable if they exceed the population density guidelines given in the Standard Review Plan and Regulatory Guide 4.7. As indicated by the staff criteria in Regulatory Guide 4.7 and described in the Pilgrim final environmental statement,¹² a site that exceeds the population density guidelines can nevertheless be selected and approved if, on balance, it offers advantages compared with available alternative sites when all of the environmental, safety, and economic aspects of the proposed site and the alternative sites are considered.

It is current staff practice to assess the relative differences in population exposures for Class 9 accidents between a proposed new site and the alternative sites through the use of population distribution and population density as a surrogate for accident consequences. The consequences of radiological accidents, from minor or trivial releases up to and including severe events, is directly related to the number of people surrounding a particular site and to the distance of the population from the reactor location. The staff recognizes that the population distribution of a site is a relatively

¹¹ Section C.3 of Regulatory Guide states:

"If the population density, including weighted transient population, projected at the time of initial operation of a nuclear power station exceeds 500 persons per square mile averaged over any radial distance out to 30 miles (cumulative population at a distance divided by the area at that distance), or the projected population density over the lifetime of the facility exceeds 1,000 persons per square miles averaged over any radial distance out to 30 miles, special attention should be given to the consideration of alternative sites with lower population densities."

¹² "Final Supplement to the Final Environmental Statement related to construction of Pilgrim Nuclear Power Station, Unit No. 2," (NUREG-549) May 1979.

crude measure of the risk associated with the accidental releases of radioactivity. The risk from any accidental releases would depend not only upon the population distribution of a site but also upon many other factors that would enter into the determination of the actual consequences of accident. However, insight gained in the evaluation of the relative consequences of accidents in the Perryman alternative site study (SECY-78-137, Enclosure D) led the staff to conclude that (1) the relative differences in the population distribution between sites is a reasonable measure of the relative magnitude of potential consequences, (2) relatively large differences in the population densities between two sites are required to exist before significant differences in accident risks would be expected to be discernible, and (3) the risk is not uniform for all members of the population regardless of distance from the site but is higher for those persons relatively close to the site and generally decreases with distance away from the site.

The staff's findings in the Seabrook case were published in NUREG-0501, "Seabrook Alternative Site Study," in December 1978 and presented as direct testimony before the Appeal Board at a hearing in January 1979. In this evaluation, the population distribution out to 30 miles for the Seabrook site was compared to the population distribution for each of the candidate alternative sites. The staff found that with respect to population, three of the alternative sites had significantly lower population densities than the Seabrook site, i.e., Moore Pond, Shelburne, and Phillips Cove. This factor was brought forward for consideration in the overall balancing of all of the environmental and economic factors which entered into the comparison of each alternative site to the Seabrook site. The staff's conclusion was that upon consideration of an overall balancing of all of the factors, none of the alternative sites were "obviously superior" in comparison to the Seabrook site.¹³ See, *Public Service Company of New Hampshire, CLI-77-8, 5 NRC 503 (1977)*.

¹³ The conclusions reached by the staff are as follows:

Moore Pond

"The socioeconomic factors and in particular the long transmission corridors through wilderness landscape are factors which weigh to the disadvantage of Moore Pond relative to Seabrook. Environmental factors which weigh in favor of Moore Pond relative to Seabrook include low population density and lack of salt drift effects. The staff concludes that the adverse factors are of greater magnitude than those which favor the site and that Moore Pond is clearly and substantially disadvantaged relative to Seabrook for the siting of a nuclear power station." NUREG-0501, p. D-72.

Shelburne

"Possible impacts on fish restoration programs, socioeconomic impacts, and in particular the need for long transmission corridors are all factors which weigh to the substantial disadvantage of Shelburne relative to Seabrook. Environmental factors which weigh in favor of Shelburne relative to Seabrook are lesser effects of drift and lower population densities.

(Continued on next page)

In summary, although Seabrook exceeded the "trip points" of Regulatory Guide 4.7, as proposed in SECY 78-137, *supra*, the staff has already performed the assessments of relative differences in Class 9 accident consequences in the Seabrook alternative site review.

I have determined for the reasons set forth above that there exists no adequate basis for instituting a proceeding to suspend or revoke the Seabrook construction permits because of (1) failure of NRC to require development of an evacuation plan beyond the low population zone as part of the construction permit proceeding, and (2) failure of NRC to evaluate the consequences of a Class 9 accident including the necessity for evacuation beyond the low population zone. Accordingly, the request of SAPL 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 Seabrook Station located at the Exeter Public Library, Front Street, Exeter, New Hampshire. A copy of this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

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

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

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

(Continued from previous page)

The Staff concludes that the comparative adverse impacts at Shelburne are of greater magnitude than the comparative advantages and that this site is therefore clearly and substantially inferior to Seabrook for the siting of a nuclear power station." Id., pp. E-69, 70.

Phillips Cove

"The residual environmental comparison at the two sites finally reduces to aesthetic, biological and low population advantages at Phillips Cove due to the probable absence of cooling towers and advantages at Seabrook due to shorter transmission corridors and less socioeconomic impact (other than aesthetic). Because these factors are incommensurate and, therefore, cannot be contrasted directly, and because there are some important counter-vailing factors, the staff concludes that Phillips Cove is not clearly and substantially preferable to Seabrook.

However, the overall weight of evidence does tend to favor Phillips Cove because of the absence of aesthetic effect and drift problems and the staff concludes that Phillips Cove is marginally superior to Seabrook." Id. pp. F-69, 70.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-331
(10 CFR 2.206)

IOWA ELECTRIC LIGHT
AND POWER COMPANY, et al.

(Duane Arnold Energy
Center)

February 13, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations which requested the initiation of a proceeding to suspend an amendment to the operating license of the Duane Arnold Energy Center pending the preparation of an environmental impact statement.

NEPA: OPERATING LICENSE AMENDMENT

An amendment which places added restrictions on the operation of a reactor does not require the preparation of an environmental impact statement since it does not authorize a significant increase in the amounts of effluents or a significant increase in the power level.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a request dated April 9, 1979, Citizens United for Responsible Energy (CURE), Community Action Research Group (CARG), and Iowa Public Interest Research Group (IPIRG) requested that the Director of Nuclear Reactor Regulation initiate a proceeding to suspend Amendment No. 46 to Facility License No. DPR-49, for the Duane Arnold Energy Center (DAEC), pending the preparation of an environmental impact statement for that amendment. Amendment No. 46, issued by the NRC on October 17, 1978, and noticed in the Federal Register on October 23, 1978, (43 FR 49373), revised the DAEC Technical Specifications to incorporate NRC requirements pertaining to DAEC's containment system. Notice of receipt of this request was published in the Federal Register on July 6, 1979 (44 FR 39648). For the reasons set forth in this decision, the request is denied.

The petitioners cite essentially four considerations in support of their request:

- (1) An NRC staff memorandum (Dr. Hanauer's Memorandum of September 20, 1972) which raised questions concerning the capability of the Mark I containment system to function effectively upon occurrence of a loss-of-coolant accident (LOCA) and recommended a moratorium on licensing for plants with Mark I containment systems.
- (2) A letter dated February 28, 1978, (in which the NRC acknowledged that the demonstrated safety did not comply with the NRC's current interpretation of "sufficient margin" as prescribed in 10 CFR 50, Appendix A) and a notice dated March 22, 1978, reflecting the granting of an exemption from the requirements of 10 CFR 50, Appendix A for DAEC's Mark I containment system. Neither an environmental impact statement nor a negative declaration and environmental impact appraisal was prepared for the exemption action.
- (3) The NRC considered a LOCA as an "unlikely event" when the Mark I containment analysis (NUREG 0408) was performed. However, at the DAEC the high pressure coolant injection (HPCI) system was determined inoperable in May, 1978, a primary coolant leak of 3-4 gallons per minute was detected in June, 1978, and cracks were discovered in all recirculation piping safe-ends in June, 1978.
- (4) A notice was placed in the Federal Register on October 23, 1978 which allegedly "granted safety exemptions" for the Mark I containment system and no environmental impact statement was filed with respect to this "exemption."

FACTUAL BACKGROUND

The first major generation of the General Electric Company designed Boiling Water Reactor (BWR) nuclear steam supply systems are housed in a containment structure designated as the Mark I containment system. The Mark I containment design was based on the data obtained from testing performed on a pressure suppression concept for the Humboldt Bay Power Plant and from testing performed for the Bodega Bay Plant concept. The purpose of these initial tests, performed during 1958 through 1962, was to demonstrate the viability of the pressure suppression concept design. The tests were designed to simulate a LOCA with various equivalent piping break sizes up to approximately twice the cross-sectional break area of the design basis LOCA. The tests were instrumented to obtain quantitative information for establishing containment design pressures. The data from these tests were the primary experimental bases for the design and the initial staff approval of the Mark I containment system.

During the large scale testing of the Mark III containment system, in the

period 1972 through 1974, new suppression pool hydrodynamic loads were identified for the postulated LOCA event. These tests were initiated for the Mark III concept because of the geometrical configuration differences between the previous containment concepts and the Mark III design, principally in the utilization of horizontal vents. More sophisticated instrumentation was available for the Mark III tests as well as computerized methods for data reduction. It was from this testing that the short-term dynamic effects of drywell air being forced into the pool in the initial stage of the postulated LOCA event were first identified. In the case of the Mark I containment systems, this air injection into the suppression pool water results in a pool swell event of short duration, in which a slug of water rises and impacts the underside of the vent header piping system and other structural components with the suppression chamber.

In addition, other LOCA-related dynamic load information was obtained from foreign testing programs for similar pressure suppression containments. It was from these foreign tests that the dynamic effects of steam being injected into the pool during the later stages of the postulated LOCA event were identified. This steam injection results in oscillatory loads on the vent system downcomers, and suppression chamber walls due to the rapid formation and collapse of steam bubbles in the pool.

The NRC staff determined that a detailed reevaluation of the Mark I containment system was required since the aforementioned hydrodynamic loads had not been explicitly considered in the original design of the Mark I containment. In order to evaluate the magnitude and significance of these loads, affected utilities formed an "ad hoc" Mark Owners Groups and contracted General Electric Company as their program manager. The Mark I Owners Group divided the overall task into two programs: a Short-Term Program (STP) and a Long-Term Program (LTP). The objectives of the STP were (1) to examine the containment system of each BWR facility with the Mark I containment design to verify that it would maintain its integrity and functional capability when subjected to the most probable loads induced by a postulated design basis LOCA; and (2) to verify that licensed Mark I BWR facilities could continue to operate safely, without undue risk to the health and safety of the public, while a methodical, comprehensive LTP was being conducted. The objectives of the LTP are (1) to establish design basis (conservative) loads that are appropriate for the anticipated life (40 years) of each Mark I BWR facility, and (2) to restore the original intended design safety margins for each Mark I containment system.

The loads for the STP were defined by the application of all existing applicable test data, both domestic and foreign, related to the hydrodynamic phenomena postulated to occur in a Mark I suppression chamber. In addition, where sufficient test data did not exist for specific loading conditions, small scale tests on a segment of a Mark I suppression chamber

were performed to provide an estimate of the loading magnitude. The hydrodynamic load combinations were then specified for a typical (i.e., reference plant) Mark I suppression chamber. When structural analyses indicated a need, load variation functions were developed from test data and analytical models to define the loading conditions for specific suppression chamber configurations.

The staff review of the structural and mechanical components of the containment systems, for the STP, focused on those components which were judged to be critical in terms of the capability of the containment system to withstand the hydrodynamic loads associated with a postulated design basis LOCA and to perform its design function. Structural elements were placed in a "non-critical" category only after analysis which demonstrated that the elements would not affect containment integrity and function. During the LTP all structural elements will be examined in detail.

During the STP review, whenever the structural safety margins were found to be less than acceptable at an operating Mark I BWR facility, the safety margins were required to be increased. One of the methods used to accomplish this was to maintain a differential pressure of at least one pound per square inch between the drywell and the suppression chamber (torus) during reactor operation. This mode of operation would have the effect of reducing the hydrodynamic loads associated with the highly unlikely postulated LOCA. This condition remains in effect for those facilities where the licensees have taken credit for the load mitigating effects of such operation in the STP analysis of their plant's torus support system.

The staff reviewed the information provided by the Mark I Owners Group and by each licensee of an operating Mark I BWR facility and concluded that the objectives of the STP had been satisfied. The staff concluded that licensed Mark I BWR facilities, including DAEC, could continue to operate safely, without undue risk to the health and safety of the public, while the LTP is conducted. This was the principle conclusion of the *Mark I Containment Short-Term Program Safety Evaluation Report*, NUREG-0408, published in December 1977.

EVALUATION OF REQUEST

The petitioners contend (Items (1) and (2) *supra*) that the Mark I containment system may not function effectively upon occurrence of a LOCA and that the health and safety of the public may be compromised by the continued operation of plants with this containment system.

The NRC staff has given careful consideration to the concerns identified in Dr. Hanauer's memorandum of September 20, 1972, as well as new safety concerns associated with pressure suppression containments that have been identified. Based upon the reviews that have been performed, the staff,

including Dr. Hanauer, has concluded that the pressure suppression concept for containment design is safe. See, *A Technical Update on Pressure Suppression Type Containments in Use in U.S. Light Water Reactor Nuclear Power Plants*, NUREG-0474, July 1978.

The basis for continued operation of plants for the Mark I STP assessment was that a minimum factor of safety¹ of at least two, in the weakest element of a Mark I suppression chamber structure, would be sufficient to assure the functional performance of the containment during a limited period of time, while the methodical and comprehensive LTP is being conducted. During the course of the STP, a number of plant-specific modifications were performed at DAEC as the need arose. The conclusions of the STP are continually being reassessed as new information has become available during the course of the LTP. The targeted completion date of the LTP, including any plant modifications necessary to restore the original intended design safety margins, is December 1980.

The petitioners content [Items (2) and (4)] that the NRC did not comply with the National Environmental Policy Act of 1969 in that an environmental impact statement was not filed for licensing actions concerning the Mark I containment system.

Pursuant to 10 CFR 51.5, licensing actions, for a nuclear power reactor with a full power license, which require the preparation of an environmental impact statement (EIS) are those actions which the Commission determines significantly affects the quality of the human environment. As amendment to a full power operating license *may* require an EIS if it would authorize a significant change in the types or a significant increase in the amounts of effluents or a significant increase in the power level.

The exemption dated March 22, 1978, and based on NUREG-0408 had no effect on the integrity of the containment system; thus an environmental impact statement, negative declaration, or environmental impact appraisal need not be prepared. 10 CFR 51.5(d)(4).

With respect to Amendment No. 46, which the petitioners erroneously term a "safety exemption," there is also no need for an EIS. The Amendment placed added *restrictions* on the operation of the reactor to ensure continued safety and integrity of the containment.

The petitioners contend [Item (3)] that the problem with the HPCI system, the coolant leak of several gallons-per-minute, and cracks in the safe-ends imply that a LOCA is not an "unlikely event."

The load magnitudes used for the STP were predicated on an assumed instantaneous double-ended rupture of the largest pipe in the primary system, as was postulated in the original design of the containment and all other safety related systems. The conclusion that containment integrity and function

¹ Ratio of the theoretical ultimate strength of the containment of the calculated stress.

would be maintained in the event of a LOCA for the STP assessment was not contingent upon the probability of the event. A LOCA was indeed considered and formed the basis of the evaluation. Breaks of smaller size would result in less severe loading conditions, and therefore, would result in "higher margins of safety."

As required by 10 CFR 50, Appendix K, there is redundancy among the emergency core cooling systems that provide cooling of the reactor in the event of a LOCA. In the case of DAEC, this redundancy is such that the HPCI system can be inoperable without adversely impacting the emergency cooling capability requirements. During the time frame cited in the *contention*, redundant emergency core cooling systems² were operable and assured emergency cooling of the reactor in the event of a LOCA.

In June 1978, an inspection by DAEC personnel revealed a through-wall crack in one of the eight recirculation system inlet nozzle safe-ends. Ultrasonic testing and radiographic examinations revealed lesser cracks in the other seven safe-ends. The cause of the failure was intergranular stress-corrosion cracking. All safe-ends have since been replaced with an improved design that should prevent cracking in the future. See, "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 47 to License No DPR-49," January 8, 1979. Additionally, the staff has required additional inservice inspection of the safe-ends to detect cracks should they occur.

In *Investigation and Evaluation of Stress-Corrosion Cracking in Piping of Light Water Reactor Plants*, NUREG-0531, February 1979, the NRC staff reviewed the safety aspects of intergranular stress-corrosion cracking and concluded that, through-wall and lesser cracking can exist in coolant piping during plant operation, and not cause unstable crack growth and lead to excessive loss of coolant.

CONCLUSION

For the reasons stated in this decision, I have determined not to suspend Amendment No. 46 to Facility License No. DPR-49 for the DAEC. Accordingly, the request for the petitioners 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 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 Commission's regulations.

² Automatic depressurization system (ADS) combined with low pressure coolant injection (LPCI) and core spray systems (CSS).

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 13th day of February, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

Victor Stello, Jr., Director

In the Matter of

Operating License R-31

CATHOLIC UNIVERSITY OF
AMERICA

February 20, 1980

The Director of Inspection and Enforcement denies a request that the operating license for Catholic University be suspended and an order issued to the licensee to show-cause as to why its license should not remain suspended.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated October 3, 1979, P. Kelly Fitzpatrick requested, pursuant to 10 CFR 2.206 of the Commission's regulations that: (1) the license issued to Catholic University for operation of a reactor be suspended; (2) an inspection and investigation of alleged violations of the operating license be conducted; and (3) an order be issued to Catholic University to show-cause why the license should not remain suspended pending a thorough review of the licensee's operations. The petition was addressed to the Director of the Office of Nuclear Reactor Regulation; however, it was referred to this office for action because the subject matter of the petition is more appropriately within the jurisdiction of the Office of Inspection and Enforcement. Notice of receipt of the petition was published in the *Federal Register* on November 1, 1979 (44 Fed. Reg. 62970).

The bases of Ms. Fitzpatrick's requested action are a number of alleged incidents at the licensed facility including:

- (1) storage of gasoline, an explosive material, within the facility, in violation of license Technical Specifications;
- (2) storage of licensed material in a chemistry laboratory and a personal office in violation of license Technical Specifications;
- (3) receipt of radioactive material by persons unauthorized to possess it; and
- (4) inadequate security program.

In response to Ms. Fitzpatrick's petition an inspection and investigation were conducted at Catholic University on October 29 and 30, 1979. In the

course of the investigation, an investigator from the Region I office interviewed Ms. Fitzpatrick and her attorney. The findings of the investigation are set forth in Investigation Report No. 50-77/79-02.

The findings of the inspection can be summarized as follows:

1. **Allegation:** Gasoline and fumes in the reactor room.
Finding: Gasoline and fumes leaked from an air compressor temporarily stored in a room *next* to the reactor room; no violation of Technical Specifications is involved.
2. **Allegation:** Storage of spent nuclear fuel in unauthorized locations.
Finding: Nuclear fuel was not stored in an unauthorized location.
3. **Allegation:** Unauthorized receipt of radioactive material shipment of tritium.
Finding: No instance was found when a shipment of radioactive material was received by an unauthorized individual.
4. **Allegation:** Reactor room is without intrusion alarms or surveillance devices.
Finding: These measures are not specifically required by the university's security plan; no items of noncompliance with regulations regarding security were found in this inspection or on a previous one in January, 1979.
5. **Allegation:** Real possibility of diversion of nuclear materials or sabotage of reactor.
Finding: No evidence to support this allegation.
6. **Allegation:** Inadequate instruction to security officers in regard to personnel radiation monitoring.
Finding: Personnel monitoring equipment is not required by NRC regulations for the security officers. In spite of this, security officers are provided personnel monitoring equipment and instruction to them was determined to be adequate.
7. **Allegation:** Improper security clearance for security officers.
Finding: In one instance, a security guard was dismissed from performing duties in the reactor area following a National Crime Information Center check. However, this situation did not violate any NRC requirements nor any requirements of the university security plan.

On the basis of these findings I have concluded that the allegations made by Ms. Fitzpatrick were either unsubstantiated in fact or if the facts stated in the allegations are true, they do not constitute violations of NRC regulations. Therefore, Ms. Fitzpatrick's request that the operating license for Catholic University be suspended and an order issued to the licensee to show-cause as to why its license should not remain suspended 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. A copy of

this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

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

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

Dated at Bethesda, Maryland,
this 20th day of February, 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONOFFICE OF NUCLEAR REACTOR REGULATION
Harold R. Denton, Director

In the Matter of

Docket No. 50-409
(10 CFR 2.206)DAIRYLAND POWER
COOPERATIVE(LaCrosse Boiling
Water Reactor)

February 29, 1980

In response to a petition under 10 CFR 2.206 requesting suspension of the license for the LaCrosse Boiling Water Reactor, the Director of nuclear Reactor Regulation determines that the petition does not provide an adequate basis to suspend the license at this time. However, the NRC staff supports the petitioner's concern regarding soil liquefaction, and an Order to Show-Cause was issued regarding this matter, although the Order did not immediately suspend the license. Accordingly, the petition was granted in part and denied in part.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated May 21, 1979, Ms. Anne K. Morse requested that either the Nuclear Regulatory Commission's (NRC or the Commission) Director of Nuclear Reactor Regulation or the Director of Inspection and Enforcement order suspension of Provisional Operating License No. DPR-45 issued for operation of Dairyland Power Cooperative's (the licensee or DPC) LaCrosse Boiling Water Reactor (LACBWR). This petition 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* June 26, 1979 (44 FR 37352). The licensee submitted a response to Ms. Morse's petition in a letter dated July 3, 1979.

Ms. Morse presents seven bases for her petition which she asserts show that continued operation of LACBWR is inimical to the health and safety of the public. Each of these bases is discussed in this decision. Upon review of Ms. Morse's petition, the staff has determined that Ms. Morse has not presented any new information or reasons which would provide a basis for

suspending operation of the LaCrosse facility at this time. However, as discussed in this decision, the NRC staff does support Ms. Morse's concern about the liquefaction issue involving LACBWR and has issued to the licensee an "Order to Show Cause," dated February 25, 1980, regarding this matter. Accordingly, for the reasons stated in this decision, Ms. Morse's petition has been granted in part and denied in part.

CONTAINMENT VENTING (ITEM 1)

Ms. Morse asserts that an NRC letter dated November 29, 1978, questions the safety of continuous venting of containment and that this letter directed the licensee to either cease entirely or limit containment purging to a maximum of 90 hours per year until such time as further evaluation of said practice could be completed.

The NRC November 29, 1978 letter discussed background information related to containment structures for nuclear power plants where the accident analysis that NRC has reviewed and approved assumes that the containment purge valves are closed during normal operation in contrast to the LACBWR where the ventilation dampers are normally open. The letter was a request for information that would permit NRC to conduct a generic evaluation of containment purge valve use in practice in contrast to design expectations. The letter was not an order to close ventilation dampers except for 90 hours a year. The NRC's expressed concern relates to (1) accident consequences where containment pressure increases following loss of coolant accidents could be different from the documented analysis due to large (up to 48 inch diameter) open purge valves if the original analysis assumed the valves to be closed and (2) containment purge valve tests, analysis and qualification which provide assurance that the valves will close and seat properly against the dynamic forces of a design basis loss of coolant accident.

Operation of the LACBWR plant with the ventilation dampers open as designed was reviewed and approved by the Atomic Energy Commission (AEC-the NRC's predecessor) prior to initial operation of LACBWR. The LACBWR Safeguards Report dated July 1965 states in Section 6.64 that the 20-inch containment ventilation system inlet and outlet isolation dampers are normally open. The redundant inlet and outlet dampers shut off and seal the plant's ventilating system in the event of an accident, thereby preventing the release of fission products through these containment penetrations to the atmosphere. These valves were designed to close on any of the following signals:

- (1) high activity measurement by the gaseous monitor or either particulate monitor sampling the exhaust duct air leaving the building;
- (2) high reactor pressure;
- (3) high pressure in the containment building;

- (4) remote manual operation from the control room; and
- (5) loss of electrical power supply to the solenoid valves. [Each ventilation damper has a spring-loaded air cylinder operation, two limit switches, and a three-way solenoid valve. The solenoid valves are normally energized by 115 v.d.c. to air load the damper (butterfly valve) air cylinder operators. When the solenoid valves are deenergized, the air cylinder operators are vented and the spring loading closes the butterfly valves within two seconds thereby isolating the containment ventilation system].

The following additional information related to isolation damper reliability was provided by Allis Chalmers in response to AEC questions prior to granting authorization for operation of LACBWR:

- Section 14.3.18 of the LACBWR Safeguards report of July 1965 presents the analysis of the maximum credible accident including the containment pressure transient, the assumed containment leakage and the fission product release from the containment building.
- Allis Chalmers report ACNP-66501 (January 1966) presents containment pressure and temperature effects of loss of coolant accident responsive to NRC question 1-1.
- Allis Chalmers report ACNP-66531 (April 1966) addresses containment system operation in response to NRC question IV-1.
- Allis Chalmers report ACNP-66516 (June 1966) provides analysis of containment building pressure following maximum credible accident responsive to NRC question III-11.
- Allis Chalmers report ACNP-66512 (February 1966) provides assurance that in accordance with emergency procedures the operator checks containment building dampers and the 4" vent header valves following containment isolation, for automatic closure in response to NRC question III-8.
- Allis Chalmers reports ACNP-66523 and 66525 (March 1966) states that the ability of the reactor building ventilation dampers to operate whenever the reactor building air exhaust, gaseous and particulate monitor indicates high activity will be tested twice a week as part of the radiation monitor test. This was later modified to bi-weekly for the LACBWR Operating Technical Specifications (TS 5.2.15).

The AEC's review of the LACBWR containment continuous ventilation system was completed prior to the issuance of the authorization for operation of LACBWR. Automatic closure of the redundant ventilation dampers in the intake and exhaust system (4 valves) is required by the LACBWR Technical Specification 2.1.2.5(2). In addition, the following requirements are also conditions of the LACBWR operating license:

TS - 2.10.1.4 requires radiation monitors to detect and indicate radiation levels and to cause reactor building ventilation system isolation if excessive radiation levels should occur within containment.

TS - 2.11.2.5 requires that containment building ventilation system exhaust be monitored for radioactivity prior to release through the stack.

TS - 5.2.15 items 11 and 12 require gas and particulate radiation monitor calibration at each refueling, testing every two weeks, and daily checks.

TS - Table 1 requires closure of the redundant 20 inches inlet and outlet ventilation system dampers and 4 inch vent header valve before:

Table 1, item 3 - reactor coolant pressure exceeds 1305 psig,

Table 1, item 16 - containment pressure exceeds 5 psig, and

Table 1, item 18 - radiation levels exceed the maximum permissible concentrations for continuous releases to the atmosphere as specified in Table II of 10 CFR Part 20, Appendix B.

The NRC's November 1978 request emphasized the importance of the mechanical qualification of purge and vent valves. Most facilities, including LACBWR, use butterfly valves for containment isolation because of quick closing capability. The NRC's concern centered on the capability of the containment isolation valves in the purge and vent systems, after being opened during hot standby, hot shutdown, startup, or power operation modes, to close against the fluid dynamic conditions of a postulated design basis accident condition upon receipt of an isolation signal. These fluid or aerodynamic forces originate from the pressure drop imposed across the closing valves by the ascending pressure in containment following the postulated design basis loss of coolant accident. Normally these valves will receive an isolation signal either from high radiation monitors or high pressure monitors, or both. Upon receipt of the isolation signals the valves are required to seal closed within several seconds. Potential failures affecting the purge and vent penetration valves could lead to degradation in containment integrity.

From staff studies and discussions with manufacturers involved in supplying these valves the following conclusions can be made:

1. Most valves of this type will tend to close under the dynamic forces of a LOCA, if they are operated in a partially opened position.
2. Partial opening of the valves between 30° and 50° of full open will in most cases significantly reduce dynamic loads seen by valve components.
3. Demonstration of operability for most valves of this type can be obtained through analysis and previous testing data.

Based on these conclusions, the NRC staff has developed an interim

position on use of containment isolation valves, which was sent to the licensee on October 23, 1979. In accordance with this interim position, the licensee has committed to limit the opening of the LACBWR valves to no more than 50°, later reduced to 25°, of full open (DPC letters dated December 7, 18; and 28, 1979). The licensee also reports that until the maximum valve opening can be limited to 25°, the 20-inch isolation valves will remain closed except to prevent deterioration of the containment atmosphere. In addition, for the long-term solution of this issue the licensee and Allis-Chalmers, the valve manufacturer, have conducted scale model tests of the valves simulating the LOCA accident environment. Guidelines for long-term demonstration of purge and vent valve operability have been developed and are being used to assess the valves installed in operating plants (NRC letter dated September 27, 1979). It is projected that this effort will be completed near the beginning of FY 80 and that some operating and systems modifications will be required. The licensee will assess the long-term operability of the plant's valves utilizing these guidelines and the information gained through testing recently completed. Based on the aforementioned data there is reasonable assurance, during the interim, that these valves will operate during a design basis accident.

NRC is continuing to evaluate the information provided by the licensee regarding reactor containment purging and ventilation as well as the information provided by the licensees of all other operating reactors to determine what, if any, changes may be necessary to further reduce the risk of accidental release of radioactivity that could affect the health and safety of the public.

Based on our review to date, I would not order suspension of License No. DPR-45 because of containment venting.

LIQUEFACTION ANALYSIS CENTER (ITEM 2)

The NRC staff and its consultant, the U. S. Army Corps of Engineers Waterways Experiment Station (WES) have completed their review of the licensee's investigation of the liquefaction potential at the LACBWR site. The reviewed report is entitled "Liquefaction Potential at LaCrosse Boiling Water Reactor (LACBWR) Site near Genoa, Vernon County, Wisconsin" by Dames and Moore dated August 10, 1979. During a meeting with the NRC staff on October 17, 1979, the licensee submitted the final report, dated September 28, 1979, which contains only minor modifications to the August 10 draft. The licensee's consultant, Dames and Moore, has concluded "that the threshold liquefaction resistance at the LACBWR site occurs for a design SSE which yields a maximum ground surface acceleration greater than 0.18g and less than 0.20g."

Based on review of this report, we conclude that if sustained strong ground

motion with peak accelerations of .12g or higher occurs (normally associated with a magnitude 5 or greater earthquake) liquefaction can occur down to a depth of 40 feet. Below .08g, we conclude that there is little potential for liquefaction. These conclusions are based on our comparison of this site with other sites where liquefaction has occurred and on the use of laboratory strength data as interpreted by the staff and our consultant Dr. William Marcuson, a WES geotechnical engineer. WES has provided a letter dated October 19, 1979, which further defines the basis for this conclusion. In summary, based on judgment concerning the density and strength data and on empirical correlations WES concludes that the foundation material below the water table down to a depth of 40 feet is not safe against liquefaction if the licensee designated safe shutdown earthquake with a peak acceleration of 0.12g occurs.

In our opinion, the more recent investigations, report dated August 10, 1979, undertaken by the licensee's consultant Dames and Moore, Inc. confirm the previous conclusion that the soils at the La Crosse site could strain badly during a postulated earthquake producing a surface level peak acceleration of 0.12g as noted by WES in "Liquefaction Analysis for LaCrosse Nuclear Power Station," dated December, 1978. A final version of the WES report was issued as Paper GL-79-11, dated June, 1979. Although the staff's evaluations to date indicate that there is a relatively low seismic hazard at the LACBWR site (discussed *infra*), our current evaluations suggest that soil liquefaction could occur if ground motion at the .12g level occurred during an earthquake at the site.

The staff further discussed the liquefaction issue with the licensee in a meeting on November 2, 1979. At that meeting the licensee agreed to consider remedial measures to preclude liquefaction at the site. On November 29, 1979, the licensee submitted for the NRC staff's review its conceptual design for a dewatering system to preclude liquefaction. The staff's preliminary review of the proposed dewatering system indicates that the system is a feasible solution to the potential liquefaction problem at the LACBWR site. The staff is unable to determine conclusively at this time, however, that the proposed system will preclude liquefaction with reasonable certainty during potential earthquakes with peak accelerations of .12g or less, because the final design of the system has not yet been developed by the licensee and submitted to the NRC for review.

I have, therefore, issued the attached Order, which requires the licensee to show-cause why it should not submit by May 27, 1980, a detailed design proposal for a site dewatering system and why it should not implement such system, after the NRC approves it, or shut-down the LACBWR facility by February 25, 1981.

Because the seismic hazard associated with the LACBWR site is relatively low, the Order does not require shutdown of the LACBWR during the

development and implementation of the site dewatering system. As discussed in the Order, the staff has made an initial estimate of the probability of exceeding a range of peak accelerations at the La Crosse site in order to make an estimate of the hazard associated with the liquefaction potential. In doing so, we utilized all readily available estimates of earthquake probability that included the site region. These were estimates taken from Milne and Davenport (1969), Algermissen and Perkins (1976), the Applied Technology Council (1978), the Haven Site Preliminary Safety Analysis Report (1978), and preliminary results from the Systematic Evaluation Program (SEP) probabilistic study of the La Crosse site.

The Safe Shutdown Earthquake (SSE) free field ground motion designated by the licensee in the full-term license application is .12g anchored to a Regulatory Guide 1.60 spectrum. Based on our review of probabilistic studies listed above, the return period for .12g would be at least 1,000 years. This peak acceleration (.12g) is equivalent to Intensity VII when utilizing the relationship of Trifunac and Brady (1975). The return period for .08g would be at least 400 years. These values are based upon the minimum return period calculated in the above studies. While these values should not be interpreted as absolute minimums, the actual return period could be an order of magnitude larger. As mentioned above, these estimates are preliminary and only serve to indicate the general level of seismic hazard at the site.

As part of the SEP Program, we are currently evaluating the SSE seismic design at La Crosse. Based upon limited consideration of current Standard Review Plan procedures, the La Crosse site lies in an area of low seismicity in the Central Stable Region Tectonic Province. The highest intensity near the site historically was estimated to be Intensity V due to the 1811-1812 New Madrid earthquakes, 800 kilometers from the La Crosse site. The 1909 Beloit earthquake on the Wisconsin-Illinois border probably produced Intensity II to IV at the site. The site is not located near any known localizers of seismicity. Based on a recent staff decision for the Tyrone construction permit application, the SSE intensity could be VII or VII-VIII for the general region including the La Crosse site. Using the Trifunac and Brady (1975) relationship, the free field ground motion corresponding to Intensity VII would be .13g and Intensity VII-VIII would be .20g, which would be used as the high frequency anchor to the Regulatory Guide 1.60 response spectrum.

Based on the estimates of return periods of earthquakes with potential .12g ground acceleration the staff has concluded that the general level of seismic hazard at the LACBWR site is sufficiently low that operation of the plant for the next twelve months would not endanger the health and safety of the public. To the extent that Ms. Morse's petition requests suspension of operation of the LACBWR plant while the liquefaction issue is being resolved, her petition is denied.

APPENDIX J REQUIREMENTS (ITEM 3)

10 CFR 50.54(0) of the Commission's regulations requires that primary reactor containments for water cooled reactors shall be subject to the requirements set forth in Appendix J. Appendix J to 10 CFR Part 50 specifies the requirements for testing procedures, testing frequency, and testing method. Appendix J also specifies the leakage limits for determining test failures, and associated reporting procedures for such failures including corrective action plans to effect the repairs. The intent of periodic containment leak tests is to detect the leaks so that prompt corrective action can be taken to restore leak tightness and prevent gradual deterioration. If significant containment leaks are found, the plant will be shut down until containment integrity is restored and demonstrated by successful and more frequent tests.

Contrary to Ms. Morse's suggestion, the licensee has complied with the intent of Appendix J. The licensee has been conducting its containment leak test in accordance with the approved requirements contained in the Technical Specifications (Section 5.2.1) and has also been reporting all test failures and associated corrective actions for repairs as required by Appendix J.

The fact that some electrical penetrations have failed the leak tests does not provide a basis for suspending operation of the LaCrosse facility. Moreover, the licensee has taken appropriate corrective action where necessary upon failure of any leak test. There is no indication that the licensee will not continue to take such corrective action or that the result of the licensee's tests thus far indicate a safety problem that justifies suspension of operation of the LACBWR facility.

FORCED CIRCULATION (ITEM 4)

LACBWR has had several instances during its commercial operation where a reactor coolant forced circulation pump had to be removed from service because of problems with the pump shaft seals. The shaft sealing arrangement consists of four sections comprised of mechanical seals, seal rings, a buffer-type seal, and a labyrinth bushing to backup the mechanical seal. Tolerances between the pump shaft and the seals exist to permit seal injection water to cool and lubricate the rotating seal members. The seal water injection system operates at a higher pressure than the reactor coolant system, maintaining a pressure differential between the two that ensures reactor coolant will not pass our through the seals. Normal seal leak-off water is returned to the seal water injection pump reservoir. The seal water injection system has several alarms and protective circuits which alert the operator of abnormal conditions and trip the reactor's forced circulation pump if the anomalies are not corrected. These protective features are designed to

minimize the loss of primary coolant and to protect the pump from excessive damage due to improper seal cooling and lubrication. The alarms and associated pump trips are actuated by diverse parameters such as low differential pressure, high differential pressure, high temperature in the leak-off lines, low flow in the inlet lines, high or low flow in the leak-off lines. The seal water injection system's protective features mitigate the severity of damage and potential radiological consequences associated with a malfunction of a seal or the seal water injection system.

LACBWR's forced circulation pump seals have caused the seal water injection system to actuate a pump trip due to excessive flow created by seal degradation. In every instance, the system performed as intended without loss of primary coolant or damage to the pump. The latest pump seal failure in December 1978 caused the licensee to operate the facility for a period of approximately two months with one recirculation pump and its associated loop out of service before repairs could be performed. On previous occasions, the pump was placed out of service, repairs made, and the pump returned to service without the need to operate in the single loop configuration since this repair was made during a scheduled reactor shutdown for refueling or maintenance and there was no benefit in continuing operation with only one loop in service.

Dairyland Power Cooperative has investigated the cause of the seal degradation and has attributed it to a change in the seal material which was not as durable as that used by the original pump vendor. The change in the hardness of the seal material lead to faster degradation. Dairyland Power Cooperative has replaced the seals in both forced circulation pumps with an improved seal material. The pumps have since operated for two months without failures. Past seal failures have typically occurred in a matter of days after pump startup. This operating problem appears to have been resolved.

The NRC approved LACBWR Operating Technical Specification 4.2.2.9 permits reactor operation with only one of the two forced circulation loops in service at power levels up to 82.5 MWt. By letter dated April 19, 1979, the NRC staff transmitted to Dairyland Power Cooperative a safety evaluation performed by the Systematic Evaluation Program staff supporting operation with less than all loops in service. The NRC review considers such things as impact on normal operation, the potential for accidents not previously evaluated, and the calculated effect on previously analyzed accidents and transients. Based on our review, we conclude that operation with less than all loops in service at LACBWR continues to be acceptable in accordance with the limits of Technical Specification 4.2.2.9.

OPERATIONAL RESTRICTIONS (ITEMS 5 AND 6)

Operational restrictions were placed on LACBWR¹ as a result of gross fuel failures experienced in Cycle 4. These restrictions were intended to provide a means of monitoring and limiting the progression of fuel failures. The limits were primarily set to preclude the severity and number of fuel failures to levels lower than experienced in Cycle 4. These limits are well below fuel damage limits which would be inimical to the health and safety of the public.²

The LACBWR Technical Specification implemented for Cycle 5 limited offgas activity to a maximum specified value which included a ratio factor to account for changes in power level. Also included was a term allowing for offgas activity which may be generated from the residual activity leftover from the gross failures of Cycle 4. The allowable offgas due to the residual activity was measured by the licensee during startup for Cycle 5. The licensee did not exceed the offgas Technical Specification limits at any time during Cycle 5 operation. However, a high residual activity term allowed LACBWR to operate with a higher offgas activity limit than the limit set for Cycle 6. This occurred because the reactor water cleanup system effectively removed the residual uranium which resulted in less offgas due to the residual activity, thus allowing more offgas activity from damaged fuel. To better account for the effectiveness of the reactor water cleanup system, we requested and the licensee agreed to change the LACBWR Technical Specifications to reduce the allowable residual activity term to 10 percent of the initial value in 50 days³. (This was based on alpha activity graphs from Cycle 5 which provide a good indication of removal rates of the residual uranium). The new limits make the offgas technical specifications more restrictive in that permitted fuel damage during Cycle 6 will be well below that allowed for Cycle 5 because the total offgas limit will be reduced due to the reduction in the residual offgas limit.

The reactor coolant water exceeded the gross alpha activity limit on 5 occasions during the early days of Cycle 5. In each case reactor power level was reduced as required by the Technical Specifications. These incidents were the result of residual activity from Cycle 4 and not as a result of new failures. On each occasion the activity returned to within the Technical Specification limits (as verified by samples) in approximately 10 hours. After these early incidents, the licensee operated the remainder of Cycle 5 without exceeding Technical Specification limits.

¹ Amendment No. 11 to License No. DPR-45, dated March 3, 1978.

² Enclosure 2 to the Commission's transmittal letter for Amendment No. 11, dated March 3, 1978, titled "Analysis of LACBWR Fuel Failures," dated February 1978.

³ Amendment No. 16 to License No. DPR-45, dated May 25, 1979.

Whereas fuel damage was predicted for Cycle 5, the severity and numbers of damaged fuel was maintained well below that experienced in Cycle 4.¹ The end-of-Cycle 5 (EOC-5) fuel inspections indicated that less than 0.3% of the core sustained damage. This was in good agreement with the predicted results. As it is impossible to assure 100 percent fuel integrity, the 99.7 percent fuel integrity obtained during Cycle 5 is considered acceptable, and represents a damage limit that does not pose a threat to the health and safety of the public.²

The NRC expects that fuel failures during Cycle 6 operation will be significantly less than the failures experienced during Cycle 5. This is due to (1) the reduced number of Allis Chalmers fuel assemblies that remain in the core, (2) the remaining Allis Chalmers fuel assemblies being positioned at low power locations, and (3) local power peaking in the fuel assemblies as a result of control rod movements being minimal for Cycle 6 locations of the Allis Chalmers fuel assemblies.

Based on our evaluations and the revised Technical Specifications we have concluded that there will be fewer fuel rod failures in Cycle 6 than Cycle 5 and that there is no increased risk to the health and safety of the public that would justify an order to shut down the LACBWR plant.

SPENT FUEL STORAGE POOL (ITEM 7)

There is no NRC requirement for licensees to maintain space in the spent fuel pool for a full core offload. It is the NRC's position that the health and safety of the public is not impaired by leaving a core in the reactor vessel. Thus, if some time in the future the Dairyland Power Cooperative does not have storage capacity in the spent fuel storage pool, the spent fuel assemblies may be stored in the reactor vessel. Therefore, I find no basis to order the suspension of operation of the plant because of an impending shortage of storage space for spent fuel.

CONCLUSION

Based on the foregoing discussion and the provisions of 10 CFR 2.206, I have determined that there is no adequate basis for suspending Dairyland Power Cooperative's License No. DPR-45 for the LACBWR plant. However, as discussed in this decision, the NRC staff does support Ms. Morse's concern about the liquefaction issue involving LACBWR and has issued to the licensee

¹ DPC letter dated May 9, 1979.

² Amendment No. 11 to License No. DPR-45, dated March 3, 1978; Enclosure 2 to the Commission's transmittal for Amendment No. 11, dated March 3, 1978, entitled "Analysis of LACBWR Fuel Failures," dated February 1978.

an "Order to Show Cause," dated February 25, 1980, regarding this matter. The request of Ms. Anne K. Morse is, therefore, granted in part and denied in part.

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 LACBWR Plant, located at the La Crosse Public Library, 800 Main Street, La Crosse, Wisconsin 54601. A copy of this decision will also be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

As provided in 10 CFR 2.206 (c) of the Commission's regulations, this decision will constitute the final action of the Commission 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 29th day of February, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

**VIRGINIA ELECTRIC
POWER COMPANY**

**Docket Nos. 50-280
50-281**

**(Surry Nuclear Power Station,
Units 1 and 2)**

**For Relief Under
10 CFR 2.206**

March 4, 1980

Upon *sua sponte* review of the denials by the Director of the Office of Nuclear Reactor Regulation of three petitions requesting the staff to prepare an environmental impact statement on the proposed steam generator repairs at the Surry facility, the Commission determines that such a statement should be prepared on the proposed repair at Unit 1.

MEMORANDUM AND ORDER

The Commission has before it for *sua sponte* review three decisions by the Director of the Office of Nuclear Reactor Regulation on petitions¹ filed under 10 CFR 2.206 involving the steam generator repair at the Surry Nuclear Power Station. On January 29, 1980, the Commission, pursuant to 10 CFR 2.206(c)(1), took review of the three decisions on the issue of the need for an environmental impact statement regarding the proposed repair.

¹ The three petitions are from the North Anna Environmental Coalition (filed December 29, 1978; denied February 1, 1979); the Environmental Policy Institute (filed February 20, 1979, denied April 4, 1979); and the Potomac Alliance, Citizens Energy Forum, Inc., Truth in Power, Inc., and the Virginia Sunshine Alliance (filed April 18, 1979, denied October 24, 1979).

The primary issue presented by the repair,² and the sole issue considered on the merits in this Commission review, is whether the NRC's action in approving the repair is one "significantly affecting the quality of the human environment" for purposes of the National Environmental Policy Act (NEPA),³ and therefore one that requires an environmental impact statement. This admittedly vague test, and the lack of definitive criteria that can be used in applying it, leaves the Commission and its Staff with a difficult decision in many cases. The circumstances of this case presented the Director with just such a difficult decision.

Our review has focused on the occupational radiation exposure that the repair program will entail because we believe that this adverse environmental impact is the only one associated with the repair program that might be considered significant. We have carefully examined the Director's Decisions and the bases therefor, and are unable to determine from the data and arguments presented by the Director whether the occupational radiation exposure involved here is significant. The Director's Decisions rest essentially on a comparison of the impact of the radiation exposure resulting from the repair with the net savings in total occupational exposure resulting from operation using repaired steam generators instead of defective ones, and a comparison with the incidence of cancer for the worker population due to causes other than the repair at Surry. The first comparison is relevant to the question whether the expected benefits of the action outweigh the environmental costs, which is distinct from the question whether the expected environmental impact of a federal action is sufficiently great to require an impact statement. Even if on balance the result of the federal action is beneficial, the proper criterion on which to base the decision whether to prepare an EIS is the significance of the action.⁴ Hence, the fact that the occupational exposure at Surry (2070 man rems for the repair at each unit) is expected to be less than the occupational exposure resulting from continued operation with defective steam generators over a period of four years is a valid consideration in assessing the merits of the repair once the requirements of NEPA have been satisfied, but has no bearing in determining the

² When this issue first arose, both units at Surry were the subject of the petitions. At this point however, repairs at Unit 2 are essentially completed and the repairs at Unit 1 are scheduled to begin in June of 1980. Hence, the need for an environmental impact statement for the Unit 2 repairs is moot. However, the issue of the need for a statement for the Unit 1 repair is very much alive and is the focus of this Commission review.

³ The National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 as amended by Pub. L. 94-83, 89 Stat. 424, 42 U.S.C. Section 4321 *et seq.*

⁴ See Regulations For Implementing The Procedural Provisions of NEPA, 40 CFR 1508.27(b)(1).

threshold question of the "significance" of the exposure and the attendant decision whether to prepare an environmental impact statement.

The Director's second basis, comparing the occupational exposures to the number of worker deaths due to cancer from risks unrelated to the repair, necessarily entails a judgment regarding the significance of these other risks. More specifically, it implies the proposition that these other risks are either not significant or that a small percentage of them is not significant. However, nothing in the Director's Decisions establishes this proposition. Thus the comparison, without more, does not enable us to determine whether the exposures here are significant.

Given this, and given the controversy in the scientific community as to the effects of such exposures, we are unable to determine whether the environmental impacts here are significant. Therefore, we believe that the preferable course of action in the circumstances of this case is to prepare an environmental impact statement on the repair.

Accordingly, we hereby direct the Staff to expeditiously prepare and issue an environmental impact statement on the proposed repair at Unit 1.

Chairman Ahearne and Commissioner Hendrie dissent from this decision.⁵

IT IS SO ORDERED.

FOR THE COMMISSION

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 4th day of March, 1980.

⁵ Section 201 of the Energy Reorganization Act, 42 U.S.C. Section 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Had Commissioner Gilinsky been present at the meeting he would have voted with the majority. To enable the Commission to proceed with this case without delay, Chairman Ahearne, 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 two to one in favor of the decision.

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

**METROPOLITAN EDISON
COMPANY**

Docket No. 50-289

**(Three Mile Island Nuclear Station,
Unit No. 1)**

March 6, 1980

The Commission issues further guidance regarding the matter of management competence which the Board is to hear in this proceeding on restart of the facility.

ORDER

After reviewing its Order and Notice of Hearing of August 9, 1979, and the Licensing Board's First Prehearing Conference Order, the Commission has decided to provide the Board with further guidance regarding the management competence issues which the Board is to hear in this proceeding. In determining whether Metropolitan Edison is capable of operating Unit 1 safely, the Board is directed to examine the following broad issues: (1) whether Metropolitan Edison's management is sufficiently staffed, has sufficient resources and is appropriately organized to operate Unit 1 safely; (2) whether facts revealed by the accident at Three Mile Island Unit 2 present questions concerning management competence which must be resolved before Metropolitan Edison can be found competent to operate Unit 1 safely; and (3) whether Metropolitan Edison is capable of operating Unit 1 safely while simultaneously conducting the clean-up operation at Unit 2.

In the course of examining these broad questions, the Licensing Board should examine the following specific issues:

- (1) Whether Metropolitan Edison's command and administrative structure, at both the plant and corporate levels, is appropriately organized

- to assure safe operation of Unit 1;
- (2) whether the operations and technical staff of Unit is qualified to operate Unit 1 safely (the adequacy of the facility's maintenance program should be among the matters considered by the Board);
 - (3) What are the views of the NRC inspectors regarding the quality of the management of TMI Unit 1 and the corporate management, staffing, organization and resources of Metropolitan Edison;
 - (4) whether the Unit 1 Health Physics program is appropriately organized and staffed with qualified individuals to ensure the safe operation of the facility;
 - (5) whether the Unit 1 Radiation Waste system is appropriately staffed with qualified individuals to ensure the safe operation of the facility;
 - (6) whether the relationship between Metropolitan Edison's corporate finance and technical departments is such as to prevent financial considerations from having an improper impact upon technical decisions;
 - (7) whether Metropolitan Edison has made adequate provision for groups of qualified individuals to provide safety review of and operational advice regarding Unit 1;
 - (8) what, if any, conclusions regarding Metropolitan Edison's ability to operate Unit 1 safely can be drawn from a comparison of the number and type of past infractions of NRC regulations attributable to the Three Mile Island Units with industry-wide infraction statistics;
 - (9) what, if any, conclusions regarding Metropolitan Edison's ability to operate Unit 1 safely can be drawn from a comparison of the number and type of past Licensee Event Reports ("LER") and the licensee's operating experience at the Three Mile Island Units with industry-wide statistics on LER's and operating experience;
 - (10) whether the actions of Metropolitan Edison's corporate or plant management (or any part or individual member thereof) in connection with the accident at Unit 2 reveal deficiencies in the corporate or plant management that must be corrected before Unit 1 can be operated safely;
 - (11) whether Metropolitan Edison possesses sufficient in-house technical capability to ensure the simultaneous safe operation of Unit 1 and clean-up Unit 2. If Metropolitan Edison possesses insufficient technical resources, the Board should examine arrangements, if any, which Metropolitan Edison has made with its vendor and architect-engineer to supply the necessary technical expertise;
 - (12) whether Metropolitan Edison possesses the financial resources necessary to safely operate Unit 1 in addition to cleaning up Unit 2; and
 - (13) such other specific issues as the Board deems relevant to the resolution of the issues set forth in this order.

In proposing these questions, the Commission recognizes that it has not

established definitive standards for management organization and operation for nuclear power plants. Nevertheless, in this case the Commission considers these questions pertinent. The Board should apply its own judgment in developing the record and forming its conclusions on these questions. With the record developed and the Board's conclusions in hand, the Commission will be greatly aided in reaching a final decision on the restart issue.

Chairman Ahearne and Commissioner Kennedy dissent.¹

IT IS SO ORDERED.

FOR THE COMMISSION

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 6th day of March, 1980.

¹ Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had Commissioner Gilinsky been present he would have voted with the majority; Commissioner Kennedy would have dissented. Accordingly, the formal vote of the Commission is 2-1.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

**PACIFIC GAS AND
ELECTRIC COMPANY**

**Docket Nos. 50-275 OL
50-323 OL**

**(Diablo Canyon Nuclear Power Plant,
Units 1 and 2)**

March 6, 1980

Responding to intervenors' motions requesting the disqualification of two Commissioners from this opening license proceeding, the Commission rules that the decision regarding disqualification of a Commissioner from a proceeding resides exclusively in the challenged Commissioner, whose decision is not reviewable by the Commission. The Commission notes that if a challenged Commissioner decides against disqualifying himself, that decision will not be made without first giving the parties an opportunity to present information which may bear on that decision.

ORDER

On October 24 and 26, 1979, Joint Intervenors filed motions with the Commission requesting that Commissioners Kennedy and Hendrie disqualify themselves from the Diablo Canyon operating license proceeding because of off-the-record meetings these officials held on October 19, 1979, with officials of the applicant, Pacific Gas and Electric Company. If they do not elect to disqualify themselves, the Joint Intervenors requested that the Commission institute a proceeding, complete with the rights of discovery and cross-examination, to determine whether Commissioners Kennedy and Hendrie should be disqualified.

Consistent with the Commission's past practice, and the generally accepted practice of the federal courts and administrative agencies, the Commission has determined that disqualification decisions should reside exclu-

sively with the challenged Commissioner and are not reviewable by the Commission. Commissioners Kennedy and Hendrie are now considering the Joint Intervenors' request. If they are not inclined to disqualify themselves, before making a final decision they will provide the parties to this proceeding with an explanation of their proposed course of action and will afford the parties an opportunity to present any information to them which may bear on their disqualification decision.

Commissioner Bradford dissents from this order. He would have preferred at least to allow depositions after which the two Commissioners would make the first decision and, in the event of an appeal, the full Commission would review the fairness of the result.¹

IT IS SO ORDERED.

FOR THE COMMISSIONER

**Samuel J. Chilk
Secretary of the Commission**

**Dated at Washington, D.C.,
this 6th day of March, 1980.**

¹ Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present they would have voted with the majority. Accordingly, the formal vote of the Commission is 2-1.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

**ATLANTIC RESEARCH
CORPORATION**

Docket No. BML 45-02808-04

Alexandria, Virginia

March 14, 1980

Ruling that the Appeal Board had utilized erroneous factors in mitigating entirely the civil penalties assessed the licensee by the Director, Office of Inspection and Enforcement, and subsequently upheld by the Administrative Law Judge, the Commission vacates the Appeal Board's decision in ALAB-542 and remands the matter to that Board for further consideration of the issue of mitigation.

ATOMIC ENERGY ACT: CIVIL PENALTIES

The Commission's authority to impose civil penalties upon licensees under Section 234 of the Atomic Energy Act is not limited to situations in which management malfeasance, nonfeasance, or misfeasance contributed to the license violations or in which the licensee failed to take prompt corrective action to obviate a repetition of the occurrence. A civil penalty is within the scope of Section 234 if there is a license violation and the imposition of a civil penalty has a rational relationship to potential improvement of conduct by the licensee or any other person in furtherance of the purposes of the Atomic Energy Act.

ATOMIC ENERGY ACT: CIVIL PENALTIES

Where a license violation has been established, a civil penalty may positively affect the conduct of the licensee or other similarly situated persons in accord with the policies in the Atomic Energy Act, and the penalty is not disproportionate to the gravity of the offense, the Commission has the au-

thority under Section 234 to impose a civil penalty as a sanction for the violation.

DECISION

This case addresses an important question about the application of Commission authority to impose civil penalties under Section 234 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2282.¹ Atlantic Research Corporation (Byproduct Material License No. 45-02808-04 was assessed a civil penalty of \$8,600 by the Director of the Office of Inspection and Enforcement (OIE). The instant case concerns whether this particular civil penalty can be imposed under Section 234 in the absence of a specific finding either that management malfeasance, nonfeasance, or misfeasance contributed to the license violations committed by an employee or that the licensee failed to take prompt corrective action to obviate a repetition of the occurrence. The Atomic Safety and Licensing Appeal Board reasoned that without such a finding these civil penalties were punitive and therefore beyond the scope of Section 234. We vacate that decision and remand the case to the Appeal Board for further proceedings.

I.

The underlying facts are undisputed, established by stipulations, testimony and documentary evidence presented before the Administrative Law Judge, and are reflected in the decisions of the Administrative Law Judge (ALJ-77-2, 6 NRC 702 (1977), ALJ-78-2, 7 NRC 701 (1978)) and the Atomic Safety and Licensing Appeal Board (ALAB-542, 9 NRC 611 (1979)).

Atlantic Research Corporation is the holder of Byproduct Material License No. 45-02808-04, which authorizes the licensee to perform industrial radiography in accordance with conditions specified in the license and the Commission regulations. The license was issued originally on September 6, 1974 and is currently under a pending application for renewal.

On December 12, 1976, a radiographer-employee of the licensee employed at the licensee's cobalt-60 radiographic facility committed what were later found by the Office of Inspection and Enforcement to be seven items of noncompliance with the byproduct material license and NRC regula-

¹ Section 234 reads, in pertinent part:

Any person who (1) violates any licensing provision of section 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 or any rule, regulation, or order issued thereunder, or any term, condition, or limitation of any license issued thereunder, or (2) commits any violation for which a license may be revoked under section 186, shall be subject to a civil penalty, to be imposed by the Commission, of not to exceed \$5,000 for each such violation . . .

tions. The most serious of these items of noncompliance was the very high exposure to the radiographer and to a non-radiographer employee who accompanied him. There is no dispute that the radiographer's conduct violated terms of the byproduct material license and that the items of noncompliance were committed during the radiographer's performance of radiographic activities within the scope of employment. The record indicates that the radiographer employee was engaged in precisely the type of corner-cutting that the Commission regulations are designed to discourage. The facts leading up to the incident are as follows:²

An employee-radiographer of the Atlantic Research Corporation, the corporate licensee, was assigned to perform certain radiographic operations for the Licensee at the Licensee's cobalt-60 radiographic facility during the early hours of Sunday, December 12, 1976. The radiographer entered the radiographic facility, without wearing a film badge, pocket chamber, or pocket dosimeter, tested the alarm system, set up the first shot, and then opened the interlocked door because the room was uncomfortably warm. The radiographer was accompanied by another employee, a technician working on the project, who was not a radiographer and who had not been issued a film badge, a pocket chamber, or pocket dosimeter. Because the interlocked door had been propped open, the alarm system horn sounded as designed; the radiographer turned off the alarm system at the control panel because the sound of the horn annoyed him.

The radiographic exposures continued with the alarm system turned off. At the end of the fifth shot, the radiographer inadvertently failed to crank the source into the shielded position. Both individuals then reentered the radiographic cell, replaced the exposed film with a new cassette, set up another shot, and returned to the control room for the sixth and final shot. The total time in the cell with the unshielded source was about 60 seconds. A survey meter was apparently taken into the cell between radiographic exposures but the radiographer could not recall observing the meter reading.

At the beginning of the sixth shot, the radiographer realized from the source crank position that the Co-60 source had been unshielded during the last entry. He also realized that he and the project technician were not wearing film badges or any other type of personnel monitoring device. The radiographer then notified his supervisor, finished the last exposure, secured the facility and returned to the radiation safety office. The radiographer did not record his name and the date of the radiographic operation tests he conducted in the utilization log. He also did not record the final radiation survey when the source was secured after

² This excerpt is from the NRC Staff Brief to the Commission, at 1-3.

the last radiographic exposure. Due to the lack of dosimetry during the incident, doses were estimated using T.L.D. (thermoluminescent dosimeter) measurements. These measurements showed the radiographer received $1,250 \pm 15\%$ rem dose to the left thumb and $9.2 \pm 15\%$ rem dose to the whole body (lens of eyes). The project technician received a dose to the whole body (lens of eyes) of $4.4 \pm 15\%$ rem. The extremity dose to the radiographer was later substantiated with the development of erythema to the left thumb and first two fingers, and dry desquamation of the tip of the left thumb [footnotes omitted].³

After an investigation of the incident on February 14, 1977, the Director, OIE, pursuant to Section 234 of the Atomic Energy Act and 10 CFR 2.205 of the Commission regulations, served a Notice of Violation and a Notice of Proposed Imposition of Civil Penalties on the licensee. These documents charged that the licensee was responsible for eight separate items of noncompliance with the Commission's regulations and the byproduct material license as a result of the radiographer's conduct. On February 28, 1977, the licensee answered the Notice of Proposed Imposition of Civil Penalties. After consideration of this answer, on March 28, 1977, the Director issued an order imposing civil penalties against the licensee in the amount of \$8,600 for seven items of noncompliance and remitted the proposed penalties for one item.⁴ Thereupon, by letter dated March 30, 1977, the licensee requested a hearing. Following that hearing, the Administrative Law Judge affirmed the Director's decision. ALJ-77-2, 6 NRC 702 (1977). Subsequently, the Administrative Law Judge denied the licensee's request for mitigation of the penalties. ALJ-78-2, 7 NRC 701 (1978). The Appeal Board reversed the Administrative Law Judge's decision. *Matter of Atlantic Research Corporation* (Byproduct Material License No. 45-02808-04), ALAB-

³ See also ALJ-77-2, 6 NRC 702, 704 (1977).

⁴ The seven items of noncompliance charged by the Director are described in the Initial Decision, ALJ-77-2, 6 NRC 702, 705-706 (1977) and are summarized as follows: (1) Very high exposure of radiation (a radiographer received approximately 1250 rems to portions of one hand and approximately 9.2 rems to the whole body; another non-radiographer employee received a whole body dose of approximately 4.4 rems), a violation, in noncompliance with 10 CFR 20.101(a) (\$2,000 civil penalty); (2) radiographer's failure to make surveys to determine that the source was returned to its shielded position prior to entering the radiographic cell, a violation, in noncompliance with 10 CFR 34.43(b) (\$2,000 civil penalty); (3) radiographer's intentional defeat of the automatic alarm system, a violation, in noncompliance with license condition 16, procedures 6a, item 3 (\$2,000 civil penalty); (4) radiographer's failure to wear and (5) to require the non-radiographer to wear either a film badge or a pocket dosimeter (or pocket chamber), both infractions, in noncompliance with 10 CFR 34.33(a) and license condition 16, procedure 6(d) respectively (\$1,000 each civil penalty); (6) radiographer's failure to maintain the "utilization logs"; and (7) radiographer's failure to make a record of the required surveys, both deficiencies, in noncompliance with 10 CFR 34.27, 10 CFR 34.43(d) and license condition 16, operating procedure 9.1.2(c) respectively (\$300 each civil penalty). See also Transcript of Hearing at 42-44, 86-102 (January 31, 1978).

542, 9 NRC 611 (1979). The Commission granted a petition for review filed by the NRC staff and phrased the question for review as:

The issue presented for review is whether the Appeal Board properly reversed the Administrative Law Judge's decision, affirming imposition of a \$8,600 civil penalty assessed against Atlantic Research Corporation (Byproduct Material License No. 45-02808-04), in the absence of the Administrative Law Judge's finding either (1) that management malfeasance, misfeasance, or nonfeasance contributed in any way to the license violations committed by an employee or (2) that the licensee failed to take prompt corrective action to obviate a repetition of the occurrence.⁵

II.

The Appeal Board did not disturb the Administrative Law Judge's finding that the seven items of noncompliance had been committed by the radiographer-employee. However, the Board found that the imposition of civil penalties in this case was improper and mitigated the civil penalties in their entirety. As we read the Appeal Board's decision, this result was based principally on its interpretation of the legislative history of Section 234. The Board found that the provision requires that a "remedial" or "deterrent" purpose, as opposed to a solely "punitive" one, must necessarily be served in the imposition of civil penalties under Section 234.⁶ The Board interpreted "remedial" as having "the effect of deterring future violations of regulatory requirements by this or other licensees (or their employees);"⁷ and reasoned that the determination of whether a civil penalty is remedial or punitive depends upon a specific finding that the violations committed by the employee were "at least influenced by licensee action (or inaction)" or "the licensee either failed promptly to institute appropriate measures to avoid a repetition."⁸ The Board concluded that because neither finding was made by the Administrative Law Judge, and because the Director, OIE conceded during the hearing that the licensee's management had taken

⁵ See Order dated August 1, 1979.

⁶ In reaching this result, the Appeal Board cited several references in the *Hearings before the Joint Committee on Atomic Energy on AEC Omnibus Legislation - 1969*, "AEC Omnibus Legislation," 91st Cong., 1st Sess. 39 (1969) which indicate that a "deterrent effect" is to be pursued in civil penalty actions. 9 NRC 611, at 615-616. However, there is no indication in those passages that civil penalties must not have any punitive effect. Thus, it is apparent that the Board, in finding that a punitive effect could vitiate a civil penalty under Section 234, relied heavily on the phrase found in the JCAE's Report stating that "[t]he penalties authorized are civil only and are remedial in nature as opposed to punitive." S. Rept. No. 553, 91st Cong., 1st Sess., at 16 (1969). See also ALAB-542, 9 NRC, at 616. For reasons to be discussed, *infra*, we believe that the Appeal Board has misconstrued this phrase.

⁷ 9 NRC, *supra*, at 618.

⁸ *Id.*

every reasonable precaution prior to the incident and every reasonable mitigating action afterward,⁹ the penalties were “punitive” and were therefore outside the scope of Section 234.

In its brief to us, the NRC staff submits that the Appeal Board decision is erroneous and that the imposition of civil penalties under Section 234 does not require a finding of some concomitant management dereliction.¹⁰ The staff further submits that such a result would be contrary to the Commission’s longstanding policy of holding licensees responsible for activities conducted by both its management and its employees, and that such a decision would be against sound enforcement policy.¹¹ Staff contends that these penalties serve a deterrent purpose in that “they bring forcefully to the attention of the licensee and its employees (and, incidentally other licensees similarly situated) the seriousness of the cited violation and the need to prevent their future occurrence.”¹² The licensee counters with arguments that follow the Appeal Board’s reasoning below, *i.e.*, these penalties are “punitive” and therefore outside the scope of Section 234.¹³

⁹ The Director, OIE, at the mitigation hearing, adopted a statement of the ALJ that, insofar as the Director’s investigation had disclosed, “management had done reasonably what could be expected for them to carry out their obligations” (Tr. 87). The Appeal Board attached considerable weight to this remark. See ALAB-542, 9 NRC, at 621-22. However, we do not share the Appeal Board’s view of this exchange. The record reflects that the Director was simply acknowledging that the licensee had a good record of compliance and a good attitude toward assuring future compliance, and that there was no evidence of direct management involvement in the violations (Tr. 87). Clearly, the Director’s remark was not meant to completely absolve the management from culpability since these remarks were qualified by comments (which immediately followed) implying that the Director did not believe that the violations that were detected were the only ones that had ever occurred at the licensee’s facility. The Director stated:

The fact that he (the radiographer) purposely voided an alarm, turned the alarm off, which was a very significant noncompliance, and then the fact that on top of that he did not wear any kind of film badge or dosimeter, nor did he ask or provide for his visitor to wear similar dosimeter, worries me a great deal. It makes me wonder if this was a one of a kind. If just on this particular day, he did all of those things wrong.

Now, your honor, we only have a few inspectors compared to the Licensees we have. There are 11,000 Licensees and we can’t go back and check these people on a weekly basis, on a monthly basis, on a yearly basis. We have got to rely on the Licensee management to do that checking. And, therefore, when we find noncompliance, then we have got to come down very firmly to make sure that their own system is correcting the problems, so it won’t occur again (Tr. at 88-89).

¹⁰ Staff’s Brief, at 9.

¹¹ For this proposition, staff specifically relies on *Coastwise Marine Disposal Company*, 1 AEC 619 (1961) and *Virginia Electric and Power Company* (North Anna Power Station, Units 1 and 2), CLI-76-22, 4 NRC 480 (1976). Staff’s Brief, at 15, 16.

¹² Staff’s Brief, at 5.

¹³ Licensee’s Brief, at 15, 17, 18, and 19.

III.

The Appeal Board's result in this case was not controlled by either NRC or judicial precedents interpreting Section 234. This case presents an important policy issue of first impression. In our view the Appeal Board applied a proper method of analysis but gave too broad a scope to the term "punitive," and too narrow a scope to the terms "remedial" and "deterrent" in reaching its result.

Neither the legislative history nor the plain language of the statute compel the restriction that the Appeal Board would place on the NRC's discretion to impose civil penalties under Section 234. The Appeal Board's decision circumscribed the NRC's discretion in the civil penalty area creating a punitive/remedial dichotomy in NRC's civil penalty authority where none exists. In our view, the Board misinterpreted the term "punitive" in the context of Section 234, and thought that Congress meant that a civil penalty can have no punitive overtones. We believe that the legislative history of Section 234 shows that in characterizing civil penalties Congress in effect equated "punitive" with "criminal."¹⁴ Thus, the statement that "[t]he penalties authorized [by Section 234] are civil only and are remedial in nature as opposed to punitive" was intended to do no more than emphasize that there is a distinction between civil and criminal penalties. Congress certainly did not say, and could not reasonably have intended to say, that civil penalties cannot contain any aspect of "punishment," since it is the avoidance of "punishment" that provides the remedial incentive for the improved conduct which is the goal of a civil penalties enforcement program.

We have neither found nor been cited to any decisions where a court has invoked a punitive/remedial distinction in order to restrict an agency's power to impose penalties clearly labelled "civil" by Congress. Rather, the trend of recent court decisions has been to uphold civil penalties against challenges that would burden them with procedural restrictions borrowed from criminal law.¹⁵ At the same time, the courts have recognized that in

¹⁴ For example, the Committee Report accompanying the amendments which added Section 234 noted with regard to other enforcement sections in the Atomic Energy Act:

"Clearly the violations covered by Section 223 and the penalties therefor prescribed by that section are punitive, i.e., criminal in nature."

S. Rept. 91-553. Amendments to the Atomic Energy Act of 1954, As Amended. Report by the Joint Committee on Atomic Energy [to accompany S. 3169], 91st Cong., 1st Sess. 13 (1969).

The Supreme Court has on occasion also used "punitive" as equivalent to "criminal" in analyzing whether particular sanctions imposed by Congress invoke the procedural safeguards of a criminal prosecution. See e.g., *Kennedy v. Mendoza-Martinez*, 372 U.S. 144, at 168 *et seq.* (1963).

¹⁵ See, e.g., *Atlas Roofing Company v. Occup. Safety Comm'n*, 430 U.S. 442 (1977); *Frank Irey, Jr., Inc. v. Occupational Safety and H.R. Com'n*, 519 F.2d 1200, 1204 (3d Cir. 1975). See generally, *Helvering v. Mitchell*, 303 U.S. 391 (1938); *Rex Trailer Co. v. United*, 350 U.S. 148 (1956); K. Davis, *Administrative Law Treatise*, 2.13, pp. 134-135 (1958).

nature and impact, though not in statutory origin, the civil penalty has much in common with the criminal penalty. Efforts at making a "remedial"- "punitive" distinction between the two were dismissed by Justice Frankfurter as "dialectical subtleties . . . for purposes of explaining away uncritical language of earlier cases." *United States ex rel. Marcus v. Hess*, 317 U.S. 537, 554 (1943) (Frankfurter, J., concurring). Justice Frankfurter observed: "Punitive ends may be pursued in civil proceedings, and, conversely, the criminal process is frequently employed to attain remedial rather than punitive ends." *Id.*

We believe that so long as a person violates the portions of the Atomic Energy Act referenced in Section 234 and the NRC can rationally relate imposition of a civil penalty against that person to potential improvement of conduct, either by the licensee or any other person, in furthering the purposes of the Atomic Energy Act, then the penalty is within the scope of our Section 234 authority, whether or not the fine might also be called "punitive."¹⁶ All penalties are punitive in the view of the offender who pays them.¹⁷ From the standpoint of the imposing authority the penalty is "remedial" if it aims to improve conduct¹⁸ and is not motivated solely by a desire to inflict punishment for its own sake, *i.e.*, as retribution. Whenever the conduct-affecting motive is present, a civil penalty is "remedial" and there should not be any semantic limitation on the NRC's power to impose it. In the instant case, the very fact that the licensee has instituted procedures that are designed to obviate a repetition of the incident implies quite strongly

¹⁶ The Appeal Board recognized this concept, but it chose to impose a remedial/punitive dichotomy, 9 NRC, at 616:

A Conference recommendation in 1972 that Federal agencies consider the increased use of civil penalties as a means of enforcing regulatory requirements was accompanied by a report prepared by Professor Harvey J. Goldschmid of the Columbia University Law School. Taking note of the tenuous line between civil and criminal sanctions, Professor Goldschmid observed that a monetary penalty designated as "civil" by Congress should be beyond serious challenge if it is rationally related to a regulatory scheme; does not deal with offenses which are *mala in se*; and may be expected to have a prophylactic or remedial effect. He added: "This last item is important. It emphasizes that money penalty provisions may permissibly be aimed at preventing disapproved conduct—in this sense, at having a deterrent effect. Exclusive use of the 'remedial' label creates needless confusion. Deterrence is not solely a value of the criminal law, but has long played a role in civil law too (*e.g.*, treble damages in antitrust and punitive damages in tort law)." [Footnotes omitted].

¹⁷ "It is customary to use the terms 'remedial' and 'penal' as if they referred to separate and distinct statutory provisions, and as if a single provision had to be exclusively one or the other. In reality, however, the same provision may appear either penal or remedial according to the way in which different parties are affected by it." 3 *Sutherland Statutory Construction*, Chapter 60, "Remedial Legislation," Subsection 60.03, p. 34 (4th ed. 1974).

¹⁸ The target for improvement need not only be the current offender, for whom the penalty is arguably rehabilitative, but may include as well persons as yet unoffending, for whom the penalty may serve as an exemplary deterrent.

that the prospect of imposition of penalties in this case has already served a deterrent purpose.¹⁹ Furthermore, the circumstances of this case are such that we believe that imposition of penalties might influence other licensees in similar positions to take whatever measures necessary to assure compliance with the Commission's safety regulations and to prevent similar incidents. We find that it is neither necessary nor helpful to belabor whether a proposed penalty is "remedial" or "punitive." So long as a violation has been established, that civil penalties may positively affect the conduct of the licensee or other similarly situated persons in accord with the policies in the Atomic Energy Act, and that civil penalties are not grossly disproportionate to the gravity of the offense, we find that this Commission has discretion to use a civil penalty as prescribed by Section 234 as a sanction for the violation.²⁰

IV.

The policy described above is consistent with sound enforcement policy and with the practices of other agencies with similar responsibilities. The effect of the Appeal Board's decision is that where no specific conduct by a licensee contributed to the commission of a violation, imposition of a civil penalty is punitive, and the licensee is necessarily free from any culpability and the imposition of any civil penalties. Under that approach, the respon-

¹⁹ See *Tr.* 88. Of course, we emphasize that we are not using the licensee's subsequent improvements of its procedures to establish culpability but we are taking note of it as further evidence that conduct may be improved in general in response to strong enforcement actions such as that proposed here.

²⁰ Nothing in the legislative history restricts the use of this discretion. Other than making clear that penalties under Section 234 would be "remedial" in nature and were to be used as "effective deterrents" to violations, Congress did not see fit to specify further what particular actions are within the scope of a civil penalty action. See *Hearings before the Joint Committee on Atomic Energy*, *supra* note 6, at 39-40. Since Congress did not provide any further guidance in this area, the question of how to exercise that authority has been left to agency discretion. See *Securities and Exchange Commission v. New England Electric System*, 384 U.S. 176, 184 (1966). It is well settled that NRC has been given an incomparable degree of discretion. *Siegel v. Atomic Energy Commission*, 400 F.2d 778, 783 (D.C. Cir. 1968); see *Power Reactor Development Company v. International Union of Electrical Workers*, 367 U.S. 396, 408 (1961); *Westinghouse Electric Corporation v. United States Nuclear Regulatory Commission*, 598 F.2d 759 (3d Cir. 1979); *North Anna Environmental Coalition v. United States Nuclear Regulatory Commission*, 533 F.2d 655 (D.C. Cir. 1976). Civil penalty authority is one area recognized as committed to agency discretion. See *Atlas Roofing v. Occup. Safety Comm'n*, 430 U.S. 442, 472 (1977). ("Congress has often created new statutory obligations, provided for civil penalties for their violations, and committed exclusively to an administrative agency the function of deciding whether a violation has in fact occurred.") We see no reason why NRC's regulatory authority should not be similarly interpreted. See *Mixed Oxide Fuel* (Statement of Reasons for GESMO Termination), CLI-78-10, 7 NRC 711, 726-28 (1978), *aff'd sub nom. Westinghouse Electric Corp. v. NRC*, *supra*.

sibility for infractions of license provisions or Commission regulations would be divided between the licensee's management and its employees. We believe that this would be an unsound enforcement policy because management's freedom from culpability could be interpreted as freedom from responsibility.²¹ In the worst case, this might lead to a situation where a licensee may choose a course which minimizes the potential for culpability even though some alternative would better protect the public health and safety. We find that such a division of responsibility between a licensee and its employees has no place in the NRC regulatory regime which is designed to implement our obligation to provide adequate protection to the health and safety of the public in the commercial nuclear field. In general, we believe a strong enforcement policy dictates that the licensee be held accountable for all violations committed by its employees in the conduct of the licensed activity.

In its brief, the licensee relies on cases interpreting various statutes, primarily those under the Occupational Safety and Health Act of 1979 (OSHA), 29 U.S.C. 651, *et seq.*, which limit the employer's culpability for civil penalty actions resulting from the acts of employees.²² Neither the OSHA nor the other statutes referred to by the licensee are analogous to the Atomic Energy Act in spirit or in letter. Indeed, OSHA specifically provides that "employers and employees have separate but dependent responsibilities and rights with respect to achieving safe and healthful working conditions." 29 U.S.C. 651(b)(2). *See Brennan v. OSHRC*, 511 F.2d 1139, 1144 (9th Cir. 1975). No similar provision is found in the Atomic Energy Act, and in view of the unique nature of atomic energy and its regulation we have no reason to believe that any such division of responsibility was intended in the Atomic Energy Act.

Moreover, the OSHA specifically provides that an employer cannot be found guilty of a "serious" violation unless it knew or could have known "with the exercise of reasonable diligence," of the presence of the violation, *i.e.*, a statutory *scienter* requirement. 29 U.S.C. 666(j). *See Getty Oil Company v. OSHRC*, 530 F.2d 1143, 1145 (5th Cir. 1976); *Ocean Electric Corp. v. Secretary of Labor*, 594 F.2d 396 (4th Cir. 1979); *Horne Plumbing and*

²¹ As staff points out, licensees facing NRC enforcement actions have already begun to argue, citing ALAB-542, that they should not be held accountable for the acts of their employees. Brief at p. 18, fn. 37. (Letter from Niagara Power Corp. (Nine Mile Point) to John Davis, Appendix B (June 22, 1979) (NRC Public Document Room, Docket No. 50-220); letter to V. Stello from S. Ragone, President of VEPCO (September 4, 1979) (Docket No. 50-281)).

²² The licensee cites, at 9-10 of its brief, cases interpreting OSHA: *Brennan v. OSHRC*, 511 F.2d 1139 (9th Cir. 1975); *National Realty and Construction Company v. OSHRC*, 489 F.2d 1257 (D.C. Cir. 1973); *Horne Plumbing and Heating Company v. Occupational Review Board*, 528 F.2d 564 (5th Cir. 1976). The licensee also cites in its brief at 11: *SEC v. Geon Industries, Inc.*, 531 F.2d 39 (2d Cir. 1976); *United States v. Harry L. Young & Sons, Inc.*, 464 F.2d 1295, 1297 (10th Cir. 1972).

Heating v. OSHRC, 528 F.2d 564 (5th Cir. 1976).²¹ Our decision in *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), CLI-76-22, 4 NRC 480, 486 (1976), *aff'd sub nom. VEPCO v. NRC*, 571 F.2d 1289 (4th Cir. 1978), has already settled that the Commission will not place a *scienter* requirement on Atomic Energy Act civil penalties provisions where none was intended by Congress. The other statutory provisions cited by the licensee are also distinguishable from Section 234.²⁴

Thus, it is clear that the statutory provisions—and cases interpreting those provisions—of the agencies that the licensee has cited are inapplicable as persuasive authority in this situation. However, judicial interpretation of the statutory provisions of certain other agencies, namely the Federal Aviation Administration (“FAA”), the Federal Communications Commission (“FCC”) and the Federal Trade Commission (“FTC”), are enlightening since the legislative history of Section 234 indicates that Section 234 was modeled after similar provisions contained in those statutes. See S. Rept. No. 91-553 (Joint Committee on Atomic Energy) to accompany S. 3169, 91st Cong. 1st Sess., at 9 (1969). In *United States v. Lockheed Aircraft Service International, Inc.*, cited by the NRC staff, which involved the application of 49 U.S.C. 621, the predecessor of 49 U.S.C. 1471 (the current civil penalty authority of the Federal Aviation Administration), the court examined the Civil Aeronautics Administration’s (predecessor of the FAA) authority to determine whether CAA licensees were responsible for the acts of their employees in civil penalty actions. 202 F.Supp. 665 (E.D.N.Y. 1962).²² The court rejected the licensee’s claim that by holding it responsible for “the nonfeasance or misfeasance of its duly licensed aircraft mechanic carries the regulation beyond the reaction of the Congressional enactment . . . ,” and asked “what avail would the statutes and the regulations promulgated thereunder in the public interest be if a licensed service

²¹ The *scienter* requirement for “serious” violations under 29 U.S.C. 666(j) has been extended to “non-serious” violations under 29 U.S.C. 666(c), even though the statute is silent on the need for employer knowledge of “non-serious” violations. *Brennan v. Occupational Safety & Health Review Commission (OSHRC)*, 511 F.2d 1139, 1144 (9th Cir. 1975).

²⁴ *SEC v. Geon Industries, Inc.*, 531 F.2d 39 (2d Cir. 1976) is based on specific language in the Securities Exchange Act of 1934, which requires that, before liability is imposed, there must be a finding that management failed “reasonably to supervise” subordinate employees, 15 U.S.C.A. 78(b), 78o(b)(5)(E). In that case, such a finding was not made. *But see SEC v. Management Dynamics*, 515 F.2d 801 (2d Cir. 1975). See also *Virginia Electric and Power Company*, 4 NRC *supra* at 487, fn. 5. The Interstate Commerce Commission statute of concern in *United States v. Young*, 464 F.2d 1295 (10th Cir. 1972), is also inapposite since that act calls for a criminal sanction, not a civil penalty. 18 U.S.C.A. 834(f).

²² *Accord, United States v. Garrett*, 296 F.Supp. 1302, 1305 (N.D. Ga.), *aff'd. per curiam*, 418 F.2d 1250 (5th Cir. 1969), *cert. denied*, 399 U.S. 927 (1970). See Staff’s brief at 11, n. 27.

operator . . . could not be penalized for infractions thereof? How else could it act except by and through its employees?" *Id.* at 667.²⁶

Another illustration of this principle is in *United States v. Johnson*, in which the United States brought suit, pursuant to 15 U.S.C. 45(1), for civil penalties for twenty violations of a cease-and-desist order issued by the Federal Trade Commission and for an injunction requiring compliance with that order. 541 F.2d 710 (8th Cir. 1976). In rejecting the argument that the FTC order had been complied with in good faith, the court held, 541 F.2d, *supra* at 712:

In any case the good faith effort of the person to whom the cease and desist order is addressed to assure compliance with that order is generally not a defense to an action for civil penalties for violation. [Citations omitted]. The Federal Trade Commission Act was designed to protect the public from unfair trade practices. Where such practices have occurred, liability for civil penalties arises without a need for any showing that the practices were intentional

We think these examples more appropriate to our own regulatory system and more consistent with the thrust of Section 234.

V.

To be sure, our *North Anna* decision does not control this case since it concerned the Commission's assessment of civil penalties under Section 186 of the Atomic Energy Act for making material false statements with regard to a construction permit application. CLI-76-22, 4 NRC 480 (1976). However, several policy aspects of that decision are helpful and relevant here. In that case we rejected the utility's argument that liability under Section 186 attaches only if a statement is known by its maker to be false on the grounds that adoption of such a rule would be inconsistent with the Commission's obligation to protect the public health and safety. We said, 4 NRC, *supra* at 486:

If an applicant were liable only for statements it knew to be false, that applicant would have a reduced incentive to insure that its consultants, contractors, and employees were meeting the highest standards in their work. The less the applicant knew, the less its vulnerability to civil pro-

²⁶ The FCC interpretation of its organic statute is similar. See, e.g. *Matter of Howard Steven Strouth v. Western Union Telegraph Company*, (Docket No. 20831), 66 FCC 2d 117 (1977). That case involved violations of 47 U.S.C. 6050 by employees of Western Union who disclosed private contents of a telegram. Complainants, Strouth *et al.*, sought monetary damages under the FCC civil penalty provision from the employer, Western Union, for the violation. The FCC held that "those employees of Western Union who disclosed information concerning the telegram were bound by the restrictions of Section 605 and that Western Union is thereby liable if any unlawful acts were committed by them in doing so." *Id.* at 509. An appeal of that case is now pending in the D.C. Circuit.

ceedings. In short, forgiving innocent mistakes puts a premium on innocence. We require instead a regime in which applicants and licensees have every incentive to scrutinize their internal procedures to be as sure as they possibly can be that all submissions to this Commission are accurate.

We require no less exacting care from licensees using nuclear materials in commercial activities.

In sum, we continue to believe that, given the highly technical and potentially dangerous nature of nuclear energy and its applications, when one becomes a licensee of this Commission he must accept and be held to an extraordinary responsibility for safety. The Commission's safety regulations and license conditions reflect the Commission's considered judgment as to what is required to protect the public as well as licensees' employees from the hazards inherent in the industrial use of radioactive byproduct material. Civil penalties are one appropriate tool for emphasizing the importance of that strict compliance, for stimulating the taking of prompt corrective action, and for deterring future noncompliance.

VI.

Since the Appeal Board in this case found that the licensee was not liable, it had no occasion to consider whether the circumstances of this case would justify mitigation of the amount of the penalty. Accordingly, although the \$8,600 civil penalty was not the largest that might have been levied and could be viewed as small due to the employee's deliberate disregard for safety systems, we vacate and remand this matter to the Appeal Board for further consideration solely on the issue of mitigation.

Commissioner Kennedy dissents from this Order.²⁷

IT IS SO ORDERED.

FOR THE COMMISSION

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 14th day of March, 1980

²⁷ Section 201 of the Energy Reorganization Act, 42 U.S.C. § 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Had Commissioners Hendrie and Bradford been present at the meeting they would have voted with the majority. Accordingly, the formal vote of the Commission was 2-1 in favor of the decision.

CONCURRING OPINION OF COMMISSIONER HENDRIE

In concurring with the result reached by the majority, I feel compelled to provide some separate views. I find that both the Commission's majority position and the Appeal Board's position are consistent with the statutory framework of NRC's civil penalty authority.¹ Consequently, in the absence of controlling precedent or statutory proscription I believe the issue presented and decided is primarily a matter of policy. I believe the majority position adopts an interpretation of the law which reaches the correct result in terms of sound enforcement policy.

NRC's civil penalty authority is not to be exercised or used for the purpose of revenge or retribution but is intended to encourage licensees to improve their conformance with license conditions and regulations. I find myself in sympathy with those aspects of the Appeal Board decision which warn against the imposition of civil penalties for solely punitive purposes.² As a matter of enforcement policy, however, that decision goes too far in that it would require the regulatory staff to prove in every instance the malfeasance, misfeasance, or nonfeasance of licensee's management, as distinguished from the licensee's employee, in order to impose a civil penalty.

As a general matter, licensees have to be held accountable for serious violations committed by employees while conducting the licensed activity. Licensee management has control over the licensed activities, and has the right to order and direct its employees' physical activities in the performance of those licensed activities. While the licensee has responsibility and is accountable for all violations, it need not be subject to civil penalties in every circumstance. I do not read our decision today as being governed by principles of strict liability, without reference to the facts of the case, including all of the licensee's actions, being considered. While I believe that Congress intended that we exercise broad civil penalty authority, such authority is not without limit. Thus, for example, it does not seem to me that NRC should impose civil penalties in an instance where an employee commits violations intentionally in order to injure the reputation or property of a licensee and the licensee had exercised reasonable measures to select, instruct, and supervise the employee, or in a situation in which an "Act of God" made it physically impossible for a licensee to comply with NRC regulations.

The record in this case reflects that the licensee's prior record has been good, that the items of noncompliance were not repetitive of previous incidents, and that prompt corrective action was taken by the licensee. Where licensee management has taken proper steps to assure that employees observe license conditions and regulations and a violation occurs, I believe

¹ 42 U.S.C. Subsection 2282 (1970).

² ALAB-542, 9 NRC 611, 618, 619, 621 (1979).

that the licensee's efforts should be recognized in terms of any civil penalty which may be assessed. I expect that the Appeal Board will do that in this case. I also emphasize that effective NRC regulation depends on licensee performance as the first line of public protection. As has always been the case in our regulatory program, we must insist upon the highest standards from our licensees. Therefore, given the severity of the occurrence in this case, I have concluded that use of our civil penalty authority is appropriate, and I concur in the result reached in this case.

DISSENTING OPINION OF COMMISSIONER KENNEDY

The opinion announced today signals an unwarranted and unfortunate change in this agency's policy regarding the use of civil penalties. The majority has ruled that civil penalties may be imposed under section 234 of the Atomic Energy Act in the absence of a finding of malfeasance, nonfeasance, or misfeasance on the part of licensee management, or of a showing that the licensee failed to take prompt corrective action. In so deciding, the majority has adopted an interpretation of the law so expansive as to exceed both our statutory mandate and the dictates of sound policy. Accordingly, I would affirm the decision of the Appeal Board, and respectfully dissent from the decision of the Commission majority.

I.

Section 234 of the Atomic Energy Act provides, in pertinent part, that:

Any person who (1) violates any licensing provision of section 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 or any rule, regulation, or order issued thereunder, or any term, condition, or limitation of any license issued thereunder, or (2) commits any violation for which a license may be revoked under section 186, shall be subject to a civil penalty, to be imposed by the Commission of not to exceed \$5,000 for each such violation . . .¹

Whether this agency can impose a civil penalty under section 234 absent a finding either (1) that management malfeasance, misfeasance, or nonfeasance contributed in any way to the violations, or (2) that the licensee failed to take prompt corrective action to obviate a repetition of the occurrence, is an issue of first impression which raises fundamental policy questions directly bearing on the nature and permissible scope of this agency's enforcement authority. Because this is an issue of first impression, this case affords the Commission the infrequent luxury of addressing and resolving a

¹ 42 U.S.C. 2282 (1970).

critical question of interpretation unrestrained by administrative or judicial precedent.² This is not to say, however, that our slate is *tabula rasa*. Indeed, much has been written and said by those members of Congress responsible for the enactment of section 234 which directly bears on the issues raised in this case. In addition, the legislative history of this provision is replete with statements by the then Atomic Energy Commission about the nature and scope of the enforcement authority proposed for this agency under section 234.

II.

As this agency's predecessor, the Atomic Energy Commission, emphasized in testimony before the Joint Committee on Atomic Energy, "the purpose of imposing civil penalties is remedial to deter persons from violating licensing provisions of the Act and terms and conditions of licenses."³ To be sure, one finds no disagreement with this fundamental proposition in the majority opinion. Rather, the crucial question, on which I disagree with the majority, concerns the intended scope of "remedial or deterrent." "Remedial or deterrent," which all parties agree is a prerequisite purpose that must be served by the imposition of a civil penalty under section 234, is interpreted by the majority to mean that

so long as a violation has been established, that civil penalties may positively affect the conduct of the licensee or other similarly situated persons in accord with the policies in the Atomic Energy Act, and that civil penalties are not grossly disproportionate to the gravity of the offense,

² The majority opinion declares that *Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2)*, 4 NRC 480 (1976), *aff'd sub nom. VEPCO v. NRC*, 571 F.2d CLI-76-22 1289 (4th cir. 1978), "has already settled that the Commission will not place a *scienter* requirement on the Atomic Energy Act civil penalties provisions where none was intended by Congress" (majority opinion at 422-423). The majority's analysis of *North Anna* is singularly unpersuasive and results in misplaced reliance on the holding in that case. As the Appeal Board in the instant case was careful to note, "there was certainly neither agreement among the parties nor a finding that the utility had done everything that could have been reasonably expected of it to insure that the representations it made to the Commission were accurate and complete" ALAB-542, 9 NRC 611, 621-22 (1979). Indeed, the majority opinion at the outset of Part V substantially tempers the categorical reach of its earlier statement and eschews reliance on the *North Anna* holding by noting that:

To be sure, our *North Anna* decision does not control this case since it concerned the Commission's assessment of civil penalties under section 186 of the Atomic Energy Act for making material false statements with regard to a construction permit application. CLI-76-22, 4 NRC 480 (1976). However, several policy aspects of that decision are helpful and relevant here (majority opinion at 424).

Given the fundamentally distinguishable set of facts involved here, *North Anna* is simply not relevant.

³ *Hearings Before the Joint Committee on Atomic Energy*, "AEC Omnibus Legislation," 91st Cong., 1st Sess. 40 (1969).

we find that this Commission has discretion to use a civil penalty as prescribed by section 234 as a sanction for the violation.⁴

This interpretation, however, begs the determinative question that must be addressed: When does a civil penalty rationally relate to potential improvement of conduct?

According to the Appeal Board, imposition of a civil penalty serves a remedial or deterrent purpose where it is found either:

- (1) that management malfeasance, misfeasance, or nonfeasance contributed in any way to the license violations; or
- (2) that the licensee failed to take prompt and corrective action to obviate a repetition of the occurrence.

In my view, the Appeal Board holding describes a realistic and workable standard to apply in deciding when section 234 penalties are appropriate. Not only is the Appeal Board's approach to section 234 consistent with the legislative history, it also affords the Commission a flexible enforcement policy capable of accommodating a wide range of different policy considerations.⁵ The majority, on the other hand, has concluded that "the very fact that the licensee has instituted procedures that are designed to obviate a repetition of the violation-causing incident implies quite strongly that the prospect of imposition of penalties in this case has already served a deterrent purpose."⁶ The logic is faulty in three respects. First, it is clear that the licensee instituted the additional procedures necessary to avoid a repetition

⁴ Majority opinion at 421-422.

⁵ The majority contends that under the Appeal Board's approach, the responsibility for infractions of license provisions or Commission regulations would be divided between the licensee's management and its employees. We believe that this would be an unsound enforcement policy because management's freedom from culpability could be interpreted as freedom from responsibility. In the worst case, this might lead to a situation where a licensee may choose a course which minimizes the potential for culpability even though some alternative would better protect the public health and safety.

Majority opinion at 422-423 (footnotes omitted).

This potential bifurcation of licensee responsibility posited by the majority clearly will not occur if the Commission interprets "management misfeasance, malfeasance, or nonfeasance" in such a manner as to encourage management responsibility for a broad range of action (i.e., "management misfeasance, malfeasance, or nonfeasance" could be interpreted to require knowledge of, and hence responsibility for, virtually every aspect of a licensee's operation, with the possible exception of Acts of God or intentional violations committed by an employee in order to injure the reputation or property of a licensee). Given this Commission's long-standing interest in requiring a high degree of management accountability, I find the danger of bifurcated licensee responsibility extremely unlikely.

⁶ Majority opinion at 421.

of the incident immediately after the violation occurred, and *before* the civil penalty was imposed. As the Appeal Board noted in its decision,

the Director of Inspection & Enforcement [expressly acknowledged] . . . that, once the radiographer's misconduct came to its attention [immediately after it took place], the licensee both manifested its awareness of the gravity of that misconduct and took suitable action to avoid a repetition of it: the demotion of the employee and his permanent debarment from the performance of any activities covered by the by-product material license.⁷

Thus, the civil penalty had very little, if any, relationship to the actions taken by the licensee immediately after the violation. Second, the majority's logic eliminates the possibility that the licensee instituted the additional procedures simply to prevent further irradiation of other employees. (This may in fact be the more plausible explanation, given the licensee's previously unblemished performance record.) Third, if one assumes (indeed, the staff *concedes*) that "the licensee had done everything that might have been reasonably expected of it (before the violation) to insure that its employees would comply fully with the terms of its license,"⁸ simple logic leads one to conclude that no amount of civil penalties whatsoever will deter a licensee from committing a violation where the licensee is neither aware of nor has any reason to be aware of the potential violation. Therefore, a civil penalty can only be either remedial or deterrent if a licensee is aware of the violation or should have been aware of the potential for violation before it occurred, so that he might conform his conduct to regulatory requirements and avoid the risk of a civil penalty under section 234.⁹

The majority further contends that "imposition of penalties [in this case] might influence *other* licensees in similar positions to take whatever measures necessary to assure compliance with the Commission's safety regulations and to prevent similar incidents."¹⁰ To be sure, the civil penalty imposed on this licensee may, in fact, result in the effect on other licensees, albeit tangential, posited by the majority. It does *not* follow, however, that actions taken by other licensees in response to a civil penalty in a given case serve to satisfy the "remedial-deterrent" requirement. A licensee who takes

⁷ ALAB-542, 9 NRC 611, 618-19 (1979).

⁸ *Id.* An essential concomitant of this assumption is that the licensee was neither aware of nor should have been aware of the potential violation.

⁹ Indeed, imposition of a civil penalty may provide a disincentive for licensees to take remedial action immediately after the violation if the Commission takes the posture that such action is evidence of the penalty's deterrent effect.

¹⁰ Majority opinion at 12 (emphasis added).

certain actions in response to the imposition of a civil penalty on another licensee does so because he is *now* aware of the potential for violation and seeks to avoid imposition of a civil penalty. In a sense, then, the penalty imposed upon the first licensee is imposed on the basis of strict liability and serves as an example to all other licensees that corrective action may be in order. It is precisely this kind of "whipping boy" mentality which has no place in our regulatory framework. Just law and just regulation do not punish the guiltless as a warning to others.

We therefore are left with determining what possible remedial or deterrent effect the penalty in the immediate case might serve in light of the staff's position that "management had done reasonably what could be expected for them to carry out their obligations" (Tr. 87). Moreover, staff agrees that "the licensee here had promptly reported the situation to the Commission, and had kind of stepped right in to do all they could, to adopt all the corrective action that should be taken" (Tr. 87). Finally, we have the staff's concession that "*before* the event the licensee had done everything that might have been reasonably expected of it to insure that its employees would comply fully with the terms of its license,"¹¹ and "once the radiographer's misconduct came to its attention (immediately after it took place), the licensee both manifested its awareness of the gravity of that misconduct and took suitable action to avoid a repetition of it"¹² The evidence adduced overwhelmingly supports the position taken by the Appeal Board, a position consistent with the legislative history of section 234. Indeed, given the paucity of evidence introduced by the staff in support of its position that the civil penalties imposed here serve some remedial or deterrent purpose, I find it most inappropriate that this Commission has nevertheless decided that section 234 authorizes the imposition of a civil penalty.

One must wonder whether this decision is motivated solely by an abiding interest in assuring protection for the public health and safety, or whether there is an ingredient of agency image-making involved. Is this yet another example of an agency expanding its organic jurisdiction to prove to itself and to the public its own worth, seeking to repair a tattered image by an appearance of toughness beyond a reasonable and justifiable level? The effect of this decision may well be to foster the development by the licensee of surveillance systems so pervasive as to be morally repugnant, if not of questionable legality. How is an employer to protect himself from acts contravening his own directions and rules, undertaken not only without his consent and acquiescence, but without his knowledge as well? The doctrine announced here today clearly suggests that only at his own peril does an

¹¹ ALAB-542, 9 NRC 611, 613 (1979).

¹² *Id.*

employer forego the imposition of controls governing the conduct of his employees, controls which are commonly found in societies entertaining values markedly different from those pervasive in the free world.

As I have indicated, I believe that the decision of the Appeal Board was correct both as a matter of law and of policy. I believe it undermines the fairness and rationality of our enforcement scheme if a licensee can be penalized in circumstances in which it concededly took all reasonable precautions in advance of the incident, and all appropriate corrective measures afterwards. To say this is not to condone laxity on the part of licensees or of regulators. Rather, it is to assert that regulation, to be effective, must be both fair and reasonable—objectives that must never be subordinated to the desire of a regulatory agency to project an image of Draconian strictness. Public acceptance should not—and in the end, cannot—be purchased by evading responsibility as a Commission to apply our regulations with firmness, justice, and reason. Accordingly, I would affirm the decision of the Appeal Board mitigating the assessed penalties in their full amount.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

PUBLIC SERVICE COMPANY
OF OKLAHOMA,
et al.

Docket Nos. STN-50-556
STN-50-557

(Black Fox Station,
Units 1 and 2)

March 21, 1980

The Commission vacates and remands to the Appeal Board for further proceedings that portion of the decision in ALAB-573 dealing with the consideration of Class 9 accidents.

MEMORANDUM AND ORDER

In ALAB-573, 10 NRC 775 (December 7, 1979), the Appeal Board affirmed, with two exceptions, the issuance of a Limited Work Authorization for the Black Fox Station. This Memorandum and Order deals with one of the exceptions, the consideration of Class 9 accident issues in the Black Fox proceeding.¹ In ALAB-573, the Appeal Board interpreting the decision in *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257 (1979)[hereinafter referred to as *Offshore Power*], directed the NRC staff to file its views on whether Class 9 accidents should be considered at Black Fox and permitted other parties to file their views within 30

¹ The other exception was the radon issue over which the Appeal Board retained jurisdiction pending a resolution of separate proceedings. ALAB-573, 10 NRC 775, 807, (Dec. 7, 1979). See *Philadelphia Electric Company, et al.* (Peach Bottom Station, Units 2 and 3, et al.), ALAB-480, 7 NRC 796 (1978), ALAB-562, 10 NRC 437 (1979). In addition, the Commission accepted a question certified to it by the Board concerning an interpretation of 10 CFR Part 50, Appendix I. Order dated February 20, 1980 (accepting certified question).

days thereafter. The Commission believes that the Appeal Board has misinterpreted the decision in *Offshore Power*. Accordingly, the portion of ALAB-573 captioned "Consideration of 'Class 9 Accidents'" is vacated and remanded to the Appeal Board for further consideration.

In *Offshore Power* the Commission faced a question certified by the Appeal Board concerning "whether the probability and consequences of a so-called 'Class 9' accident at [a floating nuclear plant] are proper subjects for consideration in the Commission's environmental analysis of Offshore's application." 10 NRC, at 257-58. In that case the Commission decided that they were properly included in the Offshore environmental analysis, based on the Commission's interpretation of its responsibilities under the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321. However, the Commission found it "neither necessary nor appropriate . . . to employ this particular adjudicatory proceeding to resolve the generic issues of consideration of Class 9 accidents at land-based reactors." 10 NRC, at 262 [footnote omitted]. The Commission stated its intention to complete rule-making and policy development in that area [*id.*]. Neither of these activities have been completed. The Appeal Board in ALAB-573 correctly noted that while the Commission did not set aside existing policy regarding treatment of Class 9 accidents generally,² it "reserved . . . the right to decide whether such matters are to be considered in any given case until it adopts a new general policy." ALAB-573, p. 791. In the interim, the staff was directed to "bring up [the Commission's] attention, any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered." *Offshore Power, supra*, 10 NRC, at 263.

Because the existing policy on Class 9 accidents was not displaced in *Offshore Power* and would not be displaced pending generic consideration of Class 9 accident situations in policy development and rulemaking, the Commission envisioned that the staff would bring an individual case to the Commission for decision only when the staff believed that such consideration was necessary or appropriate prior to policy development. The Commission did not expect that such discretion was to be exercised without reference to existing staff guidance on the type of *exceptional* case that *might* warrant additional consideration: higher population density, proximity to man-made or natural hazard, unusual site configuration, unusual design features, etc., *i.e.*, circumstances where the environmental risk from such an accident, if one occurred, would be substantially greater than that for an

² The Commission's current policy on Class 9 accident considerations is set out in its *Offshore Power* opinion and in the Appeal Board opinion in that case, ALAB-489, 8 NRC 194 (1978) and need not be restated here.

average plant.³ The broad issue of consideration of Class 9 accidents at land-based reactors was not before the Commission in *Offshore Power* and we did not believe that the NRC's generic policy on consideration of Class 9 accidents would properly be developed ruling on a case-by-case basis. Such piecemeal consideration is not appropriate to such an important policy area, and we decline to adopt such an approach now.

Therefore, the portion of the Appeal Board's decision in ALAB-573 captioned "Consideration of 'Class 9 Accidents' " is vacated and remanded to the Board for further proceedings not inconsistent with this opinion. Because this matter has been resolved on this threshold issue, the various motions and requests contained in the pleadings filed with the Commission are moot. Finally, the staff is reminded that this generic issued is important for the Commission and that we expect to be kept informed of any individual cases in which the staff believes that further consideration of Class 9 accidents would be appropriate. We have just received the staff's proposed statement of interim policy on Class 9 accident considerations. We will consider the staff's recommendation and provide further guidance in the near future.

Commissioners Gilinsky and Bradford dissent ⁴ from this decision, and would affirm the Appeal Board's decision on this issue in ALAB-573, 10 NRC 775 (December 7, 1979).

IT IS SO ORDERED.

FOR THE COMMISSION

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, DC,
this 21st day of March, 1980.

³ We do not intend to influence the staff's choices of cases where it believes further consideration to be appropriate. Indeed, if the staff believed that such further action was necessary in a majority of cases, it was to seek our permission to consider such accidents in those cases. We express no opinion, in advance of receiving the staff's proposed new policy for accident consideration and other generic considerations, on whether or to what extent it will be necessary to supplement the environmental record in each case. Our decision here is only to vacate the Appeal Board's misinterpretation of *Offshore Power*.

⁴ Section 201 of the Energy Reorganization Act, 42 U.S.C. § 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 Commission Meeting when this Order was affirmed. Had he been present he would have voted with the majority. In order that the decision of the Commission majority could be executed, Commissioner Bradford who was a member of the minority, did not participate in the vote at the meeting. Accordingly, the formal vote of the Commission was 2-1 in favor of this Order.

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

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

In the Matter of

**PACIFIC GAS AND
ELECTRIC COMPANY**

**Docket Nos. 50-275 OL
50-323 OL**

**(Diablo Canyon Nuclear Power Plant,
Units 1 and 2)**

March 21, 1980

The Commission denies a request of the intervenors that it intercede in the proceeding and hear for itself the appeal of the seismic issues pending before the Appeal Board. The Commission defers ruling on a further request for the disqualification of a member of the Appeal Board for alleged bias arising from his previous participation in other Appeal Board proceedings involving seismic issues until the challenged member has first responded to the request.

RULES OF PRACTICE: DISQUALIFICATION

Consistent with the procedure outlined in 10 CFR 2.704(c) for the disposition of requests for the disqualification of a licensing board member, an Appeal Board member whose disqualification is requested by a party will be afforded the opportunity to rule on the request in the first instance. If the Board member decides to remain in the proceeding, that decision will be subject to Commission review pursuant to 10 CFR 2.786.

ORDER

On March 13, 1980, the Joint Intervenors filed a motion with the Commission requesting that the Commission intercede in this proceeding and hear the appeal on the seismic issues, supplanting the Atomic Safety and Licensing Appeal Panel. In the alternative, Joint Intervenors' request that Dr. Buck, a member of the Appeal Panel sitting in the seismic proceeding, dis-

qualify himself because of an alleged bias arising from his prior participation in other Appeal Board proceedings involving seismic issues. Also, as a final alternative, intervenors ask that Dr. Buck be given an opportunity to address the disqualification issue. The Joint Intervenors also filed a motion requesting that the Commission stay the oral argument scheduled by the Appeal Panel for April 3, 1980 in order to provide the Commission sufficient time to rule on its requests.

The Commission has reviewed this matter and has decided not to intercede in the seismic proceeding at this juncture. The Commission will have ample opportunity to review, pursuant to the procedures set forth in 10 CFR 2.786, the important issues raised in this proceeding after the Appeal Board issues its decision.

With respect to the request that Dr. Buck be disqualified from further participation in the seismic proceeding, the Commission is deferring action until Dr. Buck has been afforded the opportunity to rule on the request. Under 10 CFR 2.704(c) of the Commission's regulations, a challenged member of the Atomic Safety and Licensing Board Panel is afforded the opportunity to rule initially on disqualification requests. On March 6, 1980, the Commission issued an order in this proceeding stating that challenged Commissioners will also be afforded the opportunity to rule on disqualification requests. See CLI-80-6. Consistent with this principle, the Commission will afford Dr. Buck an opportunity to rule on the motion. Should he decide to remain in the proceeding, that decision will be subject to Commission review pursuant to 10 CFR 2.786. In order that this process will be completed prior to April 3, 1980, we direct Dr. Buck to publish a decision responding to Joint Intervenors' request by March 26, 1980. Because we intend to have this matter resolved prior to April 3, 1980, we are denying Joint Intervenors' request that the Appeal Board proceeding be stayed.¹

IT IS SO ORDERED.

FOR THE COMMISSION

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 21st day of March, 1980.

¹ Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Kennedy and Hendrie were not present at the meeting at which this Order was approved. Had they been present they would have voted with the majority. Accordingly, the formal vote of the Commission is 3-0.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of

**PUBLIC SERVICE COMPANY
OF INDIANA**

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

**(Order confirming
suspension of construction)**

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

March 13, 1980

Upon intervenor's request for a hearing on an order by the Director of the Office of Inspection and Enforcement suspending construction at the Marble Hill facility, the Commission: (1) finds that intervenors do not possess standing to request a hearing as a matter of right; (2) concludes that a discretionary hearing is unwarranted under the circumstances of this case; and (3) requests the Director of the Office of Inspection and Enforcement to scrutinize the filings for additional information and to brief the Commission before taking action to lift the order suspending construction.

RULES OF PRACTICE: STANDING TO INTERVENE

The Commission will apply judicial concepts of standing to determine hearing and intervention rights under Section 189a. of the Atomic Energy Act.

RULES OF PRACTICE: STANDING TO INTERVENE

To acquire standing to request a hearing and to intervene in an NRC proceeding, a petitioner must allege some injury in fact; *i.e.*, (1) a cognizable interest that might be adversely affected if the proceeding has one outcome rather than another; and (2) an interest "arguably within the zone of interest" protected by a relevant statute.

ENFORCEMENT ACTIONS: SCOPE OF PROCEEDINGS

The NRC may, within reasonable limits, control the scope of its enforcement proceedings for the purpose of carrying out its basic health and safety mandate. In this context, the scope of an enforcement proceeding may be restricted to whether the facts as stated in an order are true and whether the remedy selected is supported by those facts.

MEMORANDUM AND ORDER

The Sassafras Audubon Society (SAS) and the Knob and Valley Audubon Society (KVAS) have requested a hearing on an order issued by the Director of the Office of Inspection and Enforcement. For reasons explained below, the request for hearing is denied.

Background

On August 15, 1979, the Director of the Office of Inspection and Enforcement issued an "Order Confirming Suspension of Construction" to the Public Service Company of Indiana (PSI), holder of construction permits for the Marble Hill Nuclear Generating Station, Units 1 and 2. Pursuant to Section 189a. of the Atomic Energy Act, the order provided that any person whose interest may be affected by the order could request a hearing.

PSI, in a letter to the Director dated August 31, stated that it would comply with the terms of the order and did not desire a hearing. The Commonwealth of Kentucky, participating under 10 CFR 2.715(c), similarly declined to request a hearing, but indicated that it would participate if a hearing were held. Both SAS and KVAS requested a hearing in filings dated September 1 and September 4, respectively. The NRC staff filed a motion dated October 4 opposing the hearing requests of SAS and KVAS. SAS responded to this motion on October 20.

Standing

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. *See, e.g., Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610 (1976). In *Portland General* the two-prong test for standing was stated as follows:

First, one must allege some injury that has occurred or probably will result from the action involved. Under this "injury in fact test" a mere academic interest in a matter, without any real impact on the person asserting it, will not confer standing. One must, in addition allege an interest "arguably within the zone of interest" protected by the statute. (4 NRC 610, 613.)

The Commission's Appeal Board has formulated the "injury in fact" criterion as "whether a cognizable interest of the petitioner might be adversely affected if the proceeding has one outcome rather than another." *Nuclear Engineering Company* (Sheffield Low-level Radioactive Waste Disposal Site), ALAB-473, 7 NRC 737, 743 (1978). We need not reach the "zone of interests" test in this case, because petitioners have failed to show how their interests will be adversely affected by the Director's order to halt safety-related construction at Marble Hill.

SAS pursues a line of argument which may be phrased as follows: its interests are "adversely affected" by the Director's order because it will permit resumption of construction without addressing a number of matters alleged by SAS as potentially threatening to public health and safety. SAS asserts that it is entitled to a hearing as a matter of right to explore facts not (in its view) considered in the order as a possible basis for suspension or revocation of the licensee's construction permits. Stated concisely, SAS would rest its standing on alleged injury caused by actions not taken, rather than actions taken.

The NRC staff filing applies the *Sheffield* "outcome" test to this case, and concludes that the only possible outcome—since the licensee has not challenged the Director's order—is continued suspension of construction. While this straightforward application of the test has initial appeal, it ignores the possibility that, if a hearing were granted as requested by petitioners, a possible outcome could be the imposition of further remedies, among them revocation of the construction permits for Marble Hill. Petitioners could therefore argue that their interests would be affected by this choice of outcomes, since suspension implies eventual resumption of construction (leading to operation) while revocation does not.

We find, however, that the terms of the Director's Order in this case would not permit a hearing on further remedies. The Order states:

In the event a hearing is requested, the issues to be considered at such a hearing shall be:

- (1) Whether the facts set forth in Parts II and III of this Order are true;
- (2) Whether this Order should be sustained.

The scope of a hearing directed at these issues would not include consideration of enforcement remedies beyond those already granted by the order. It is then necessary to inquire whether the NRC has authority to so limit the scope of proceedings in enforcement actions.

Our reading of applicable court cases on this question leads us to conclude that such authority exists. In *Cities of Statesville v. AEC*, 441 F.2d 962 (1969), the Court of Appeals for the District of Columbia stated:

This court has held that when a petitioner can show that it possesses a substantial interest in the outcome of the proceedings, it has a right to intervene. However, an agency "should be accorded broad discretion in establishing and applying rules for . . . public participation, including . . . how many are reasonably required to give the [agency] the assistance it needs in vindicating the public interest." (*Office of Communication of United Church of Christ v. FCC*, 123 U.S. App. D.C. 328, 339-340, 359 F.2d 994, 1005-1006 (1966).)

The D.C. Circuit later quoted this language in *BPI v. Atomic Energy Com-*

mission, 502 F.2d 424 (1974), another case involving intervention rights, and then added:

This decision [i.e., *Cities of Statesville*], more clearly than *Easton* [*Easton Utilities Commission v. AEC*, 424 F.2d 847 (1970)], supports Commission authority to depart from petitioners' reading of section 189(a) of the Act. *Easton* and *Cities of Statesville* demonstrate that this court has not deemed section 189(a) to be the last word on the subject of intervention. *Other factors are indeed relevant to Commission control of proceedings necessary to carry out the purposes of the Act.* (502 F.2d at 427, emphasis added.)

These decisions are in accord with Supreme Court pronouncements on agency discretion to control enforcement of regulations. In *Moog Industries v. Federal Trade Commission*, 355 U.S. 411 (1958), the Supreme Court stated:

Furthermore, the Commission alone is empowered to develop that enforcement policy best calculated to achieve the ends contemplated by Congress and to allocate its available funds and personnel in such a way as to execute its policy efficiently and economically. (355 U.S. at 413.)

The Supreme Court later expressly approved this holding in *FTC v. Universal-Rundle Corp.*, 387 U.S. 244, 251 (1967). That the NRC is afforded similar discretion in seeking to carry out the Atomic Energy Act is clear from numerous judicial decisions. See, e.g., *Siegel v. AEC*, 400 F.2d 778, 783 (1968).

We therefore regard it as established that the NRC may, within reasonable limits, control the scope of its enforcement proceedings for the purpose of carrying out its basic health and safety mandate. It is reasonable to limit proceedings in the enforcement context to whether the facts as stated in an order are true and whether the remedy selected is supported by those facts. By the same token it is reasonable to draw the line, in specific cases, at whether or not further, more drastic remedies are called for.

The reasons for this are simple. We believe that public health and safety is best served by concentrating inspection and enforcement resources on actual field inspections and related scientific and engineering work, as opposed to the conduct of legal proceedings. This consideration calls for a policy that encourages licensees to consent to, rather than contest, enforcement actions. Such a policy would be thwarted if licensees which consented to enforcement actions were routinely subjected to formal proceedings possibly leading to more severe or different enforcement actions. Rather than consent and risk a hearing on whether more drastic relief was called for, licensees would, to protect their own interests, call for a hearing on each enforcement order to ensure that the possibility of less severe action would also be considered. The end result would be a major diversion of agency re-

sources from project inspections and engineering investigations to the conduct of hearings. In our view cases such as *Moog Industries, supra*, clearly permit an agency to adopt a policy which avoids such a result.

Finally, the NRC already provides a separate procedure, under 10 CFR 2.206, for any interested person to seek enforcement actions beyond those adopted. Furthermore, in appropriate cases enforcement orders may provide a broader scope, as has already been done in certain orders related to the Three Mile Island Nuclear Station.¹ The order in this case, however, was limited to the issues noted above, and as such would not grant standing to parties seeking additional remedies.²

Summarizing the above discussion, we conclude that the NRC may control "standing in its enforcement proceedings by the terms of orders granting hearing rights under Section 189a. In this case the order confers standing on parties claiming injury from the *suspension of construction*, but does not extend to parties asserting injury from failure to grant more extensive relief. Phrased another way, the order limits "adverse effects" to the effects of the suspension rather than effects related to the eventual resumption of construction. It follows directly that SAS and KVAS do not meet the "injury in fact" test and therefore do not have standing to request a hearing as a matter of right on the Director's order.

Discretionary Hearing

It was also held in *Portland General, supra*, that the Commission has broad discretion to provide hearings or permit interventions in cases where these avenues of public participation would not be available as a matter of right. 4 NRC 610, 614-615. We decide not to grant a discretionary hearing in this case for several reasons.

First, an enforcement order has already been issued halting safety-related construction and requiring the licensee to meet a number of stringent conditions before construction can be resumed. Our review of the Director's order and the petitioners' filings does not lead us to conclude that the Director has failed to adequately address the construction problems at Marble Hill. If petitioners are dissatisfied with the steps taken by the licensee to comply with the Director's order—when those steps have been completed to the Director's satisfaction—they may utilize the procedure of 10 CFR 2.206 to again³ request suspension or revocation of the construc-

¹ See, e.g., Order and Notice of Hearing, *In the Matter of Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), CLI-79-8, 10 NRC 141 (1979).

² Our decision on this point is consistent with a recent Final Decision by the Administrator of the Environmental Protection Agency: *In Re Environmental Defense Fund, et al.*, FIFRA Docket Nos. 411 *et al.* (August 20, 1979).

³ SAS previously filed a request under 10 CFR 2.206 with the Director of the Office of Nuclear Reactor Regulation. This request was granted insofar as the order in this case addressed construction issues. The Director denied other aspects of this petition.

tion permits. Any such request, however, would have to be based upon specific facts and could not rest upon general allegations that construction problems still exist at the site. In any event, we are for the moment satisfied that the Director's order will ensure compliance with our regulations, and that construction at Marble Hill will not resume until such compliance has been achieved. We are also requesting below that the Director brief the Commission prior to lifting the order of suspension.⁴ If it appears at that time that further action is necessary to protect public health and safety, the Commission will not hesitate to order that such action be taken before construction is resumed.

Second, we cannot see any useful purpose to be served by a public hearing under these circumstances. The Director's order makes very clear—and the licensee admits—that construction practices at the Marble Hill site have failed to meet applicable standards in a number of respects. The NRC staff is continuing its investigation of these practices and the Director and the Commission will review all of the steps proposed by the licensee to correct the deficiencies. Although SAS asserts that a hearing is necessary to develop “as complete a factual record as possible for the assessment of the extent and seriousness of constructional deficiencies at Marble Hill and the extent to which they have been and can be repaired and mitigated,” SAS does not state specifically what additional facts might be uncovered by a public hearing that have not been or will not be by pending investigations.⁵

We conclude that the circumstances of this case do not warrant the granting of a discretionary hearing.

Disposition

For the foregoing reasons, SAS's and KVAS's requests for hearing are denied.

We request that the Director of the Office of Inspection and Enforcement closely scrutinize the SAS filings in this case to determine whether or not they contain information not already considered in the Order Confirming Suspension of Construction and in the Director's decisions on SAS's 10 CFR 2.206 request. This review should be completed before permission is granted to the licensee to resume construction at the site. Any matters raised by the filings not yet considered should be investigated thoroughly and remedied, by further enforcement action if necessary.

⁴ Independent of this proceeding, the Commission requested such a briefing in a memorandum to the Executive Director for Operations dated January 23, 1980.

⁵ As SAS notes in its October 20 filing, these investigations include that of the NRC staff, the Senate Subcommittee on Nuclear Regulation, the Justice Department, and the American Society of Mechanical Engineers.

It is further requested that the Director of Inspection and Enforcement brief the Commission prior to lifting the order suspending construction at Marble Hill. In that briefing, the Director should be prepared to address the issues raised in the SAS statement. Following that briefing, construction may resume at the Director's discretion unless otherwise ordered by the Commission, but in any event not earlier than five days after the briefing.

Commissioners Gilinsky and Bradford dissent from this order.¹

FOR THE COMMISSION:

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.,
this 13th day of March, 1980

DISSENTING VIEWS OF COMMISSIONER BRADFORD

I would have granted a hearing in this case. The quality assurance and quality control (QA-QC) program is supposed to assure that the plant is built according to its design. If the QA-QC program fails, the plant becomes a potential threat to the public health and safety, for NRC's regulatory decisions assume the plant is built according to its design. A serious undetected flaw in the containment integrity at Three Mile Island, for example, could have had led to a containment failure at the moment of the 28 psig pressure spike which would have had serious consequences. NRC does not normally monitor nuclear power plant construction in great detail. Instead, NRC relies primarily on the licensee and their contractors to assure the QA-QC program is working. See Consumers Power Company (Midland Units 1 and 2) 7 AEC 7, 11 (1974). The substantial reliance the NRC places on the utility and the contractors is indicated by the fact that NRC has found it difficult to support a civil penalty sanction for QA-QC violations because of the general nature of construction permit and QA program requirements.

¹ Section 201 of the Energy Reorganization Act, 42 U.S.C. Subsection 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Had Commissioner Bradford been present at the meeting he would have voted with the minority. Had Commissioner Hendrie been present, he would have voted with the majority. Accordingly, the formal vote of the Commission was 2-1 in favor of the decision.

Against this background, the following testimony was given at Congressional hearings on Marble Hill¹:

1. Supervisory personnel of one of the contractors ordered that certain holes (honeycombs) in the containment be improperly covered over before inspectors could see them.
2. Utility and contractor personnel approved patchwork which had not been done properly.
3. The NRC inspectors found gross nonconformance across the board in the control of concrete placement at the site.
4. The NRC inspectors concluded that serious deficiencies existed in the management controls of the construction at the site and that implementation of the quality assurance program was not effective.

The Director of NRC's Division of Inspection and Enforcement has properly suspended safety-related construction at the site pending the licensee's submission of a new QA-QC program which will be judged according to certain stated criteria. The issue is whether the inspection efforts in this case and the Director's judgment about the proper remedy should be examined in an evidentiary proceeding. Given the seriousness of the problems uncovered at the site and their possible significance to the safe operation of the plant, a hearing is potentially helpful to us as a supplement to our own enforcement effort. Additionally, it would allow interested citizens to participate in assessing and determining the risks they are being told to live with. If construction had proceeded smoothly and the suspension had been the result of a clearly isolated practice or event, the Commission might be justified in denying a hearing. That is anything but the case at Marble Hill, where events have given citizens some basis for concern about the licensee commitment to their safety and about the sufficiency of NRC surveillance.

¹ Construction Problems at Marble Hill Nuclear Facility: Nuclear Regulatory Commission Oversight, Hearings Before a Subcommittee of the Committee on Government Operations, November 27-28, 1979 at pages 43, 55, 56, 64, and 65.



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

PACIFIC GAS AND
ELECTRIC COMPANY

Docket Nos. 50-275
50-323

(Diablo Canyon Nuclear
Power Plant,
Units 1 and 2)

March 12, 1980

Ruling that the Governor of California is not entitled to appeal as of right on matters in which he failed to participate before the Licensing Board, the Appeal Board accepts the appellate brief submitted by the Governor only as that of an *amicus curiae* in support of exceptions filed by other litigants in the proceeding.

RULES OF PRACTICE: APPELLATE REVIEW

Participation by a representative of an "interested state" in a proceeding before the Licensing Board under 10 CFR 2.715(c) carries with it the right to appeal; however, this right does not extend to a representative of an "interested state" who takes no part in the hearing before the Licensing Board.

Messrs. Malcolm H. Furbush and Philip A. Crane, Jr., San Francisco, California and **Arthur C. Gehr and Bruce Norton,** Phoenix, Arizona, for Pacific Gas and Electric Company, **applicant.**

Messrs. J. Anthony Kline, Sacramento, California, and **Herbert H. Brown,** Washington, D.C., for the Governor of California, **petitioner.**

Messrs. L. Dow Davis, IV, Edward G. Ketchen, and James R. Tourtellotte for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

1. This proceeding, begun in 1973,¹ involves an application for an operating license for the now nearly completed twin-unit Diablo Canyon Nuclear Power Plant. A key issue has been whether the plant is properly designed to withstand potential earthquakes. The Licensing Board found the design satisfactory following evidentiary hearings that explored seismic issues at length. LBP-79-26, 10 NRC 453 (September 27, 1979).

After those hearings were over and after the Licensing Board's decision was rendered, Governor Edmund G. Brown, Jr., of California petitioned to intervene as a representative of an "interested state."² See 10 CFR 2.715(c). The Board below granted the petition on November 16, 1979, cautioning the Governor that he must "take the proceeding as he finds it."

The Governor, offering no explanation for his failure to participate when the seismic matters were before the Licensing Board, now seeks to challenge the soundness of that Board's resolution of those issues. He asks to have the proceeding remanded for further hearings at which his representatives would take part. To that end he has lodged an appellate brief with us, assertedly in support of an exception filed by the Joint Intervenors (who did litigate the earthquake contentions). Anticipating that the applicant and the staff might challenge his right to appeal in the circumstances, the Governor "requests that, in the alternative, [his] brief be considered [as that of an] *amicus curiae*. . . ."

2. The Governor of California is not entitled to an appeal as of right on the seismic issues. An administrative hearing would be a meaningless charade if those with ample opportunity to participate were allowed to stand idly by and then, nevertheless, demand a replay when they do not like the result.⁴ The courts have explained that

¹ 38 Fed. Reg. 29105.

² The petition was filed on October 15, 1979.

³ The staff simply treats the Governor's brief as that of an *amicus*; the applicant argues (Brief of January 11, 1980 at 11): "Because [Governor] Brown [chose] not to seek participation until well after the seismic hearings had concluded, there is no basis upon which he can be granted appellate rights."

⁴ "We have long adhered to the view that it is incumbent 'upon an interested person to act affirmatively to protect himself' in administrative proceedings, and that '[s]uch a person should not be entitled to sit back and wait until all interested persons who do so act have been heard, and then complain that he has not been properly treated.' As we have admonished, '[t]o permit such a person to stand aside and speculate on the outcome; if adversely affected, come into this court for relief; and then permit the whole matter to be reopened in his behalf, would create an impossible situation.'" *Nader v. NRC*, 513 F.2d 1045, 1054-55 (D.C. Cir. 1975) (citations omitted); accord, *Easton Utilities Comm. v. AEC*, 424 F.2d 847, 851-52 (D.C. Cir. 1970) (*in banc*) and cases there cited; *Consolidated Edison Company of N.Y.* (Indian Point Station, Unit No. 2), ALAB-369, 5 NRC 129 (1977).

There must be an end to determinations and redeterminations. The issue was crystallized and the record could have been made before the Commission's action . . .

. . . Under these circumstances to allow the appellant to allege as an error of law a situation that it took no timely steps to correct by presenting its evidence in full would change its position from that of an interested party under the statute to that of a mere vigilante.⁵

The Rules of Practice do not insist that a representative of a state (or local government) bear the full burden of an ordinary party to preserve its appellate rights. By appearing as an "interested state" under 10 CFR 2.715(c), it is afforded "a reasonable opportunity to participate and to introduce evidence, interrogate witnesses and advise the Commission without . . . taking a position with respect to the issue(s)." Participation before the Licensing Board in that capacity carries with it the right to appeal. *River Bend, supra* fn. 5, ALAB-317, 3 NRC at 176-80; *Indian Point, supra* fn. 4, ALAB-369, 5 NRC at 130. But here, the Governor did not undertake even that minimum obligation to assist in developing the record. We see no cause to depart from our *Indian Point* holding that in these circumstances the representative of an "interested state" has no *right* to take an appeal; manifestly the assertion that the decision below rests on an inadequate foundation does not provide that right.

This ruling does not lessen the role of states and local governments in NRC proceedings. We recognize the Governor of California's belated assertion of interest in this case and accept his brief pursuant to section 2.715(d) as that of an *amicus curiae* in support of Joint Intervenors' appeal (exception number 45). We merely hold that the "reasonable opportunity to participate" afforded by section 2741 of the Atomic Energy Act and section 2.715(c) of the Commission's Rules of Practice⁶ does not permit the representative of an interested state to enter proceedings at the appellate level as a matter of right where he took no part in the hearing below.

⁵ *Colorado Radio Corp. v. FCC*, 118 F.2d 24, 26-27 (D.C. Cir. 1941), quoted in *Easton Utilities Comm. v. AEC, supra*, 424 F.2d at 851-52 (emphasis in original); *accord, Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-317, 3 NRC 175, 177 (1976). Indeed, even those who intervene in Commission proceedings must structure their participation so that their contentions are timely and clearly stated. "[A]dministrative proceedings should not be a game or a forum to engage in unjustified obstructionism by making cryptic and obscure references to matters that 'ought to be' considered and then, after failing to do more to bring the matter to the agency's attention, seeking to have that agency determination vacated on the ground that the agency failed to consider matters 'forcefully presented.'" *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 553-54 (1978).

⁶ 42 U.S.C. Sections 2021(1) and 10 CFR 2.715(c).

The brief tendered by Governor Edmund G. Brown, Jr., is accepted as that of an *amicus curiae*; insofar as it includes a petition to intervene as a party in our consideration of the seismic issue, the petition is *denied*.⁷
IT IS SO ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁷ Our acceptance of the *amicus* brief carries no implications about the merits of the arguments made there.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. Lawrence R. Quarles

In the Matter of

Docket Nos. 50-338SP
50-339SP

VIRGINIA ELECTRIC
AND POWER COMPANY

(Proposed Amendment to
Operating License NPF-4
to Permit Storage Pool
Modification)

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

March 24, 1980

Upon consideration of the intervenors' appeal of the Licensing Board's decision granting the applicant's motion for summary disposition and authorizing the issuance of an operating license amendment to permit a spent fuel pool modification, LBP-79-25, 10 NRC 234 (1979), the Appeal Board affirms.

RULES OF PRACTICE: SUMMARY DISPOSITION

A party opposing a motion for summary disposition may not rest upon mere allegations or denials; rather, its answer must set forth specific facts showing that there is a genuine issue of fact. 10 CFR 2.749(b).

NEPA: CONSIDERATION OF ALTERNATIVES

There is no requirement in NEPA to explore alternatives to a proposed action unless there is some basis for believing that such action might either have a significant environmental effect or give rise to a controversy over the allocation of resources. *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979).

NEPA: CONSIDERATION OF ALTERNATIVES

In order to reject a proposed action under NEPA, it must be determined both that (1) there is at least one environmentally superior alternative; and (2) the environmental superiority of that alternative is not outweighed by other considerations such as comparative costs. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155 (1978).

RULES OF PRACTICE: SCHEDULING OF HEARINGS

The Appeal Board will review a licensing board's scheduling decisions only upon a claim that the Licensing Board abused its discretion by setting a hearing schedule that deprived a party of its right to procedural due process. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 188 (1978).

Mr. James N. Christman, Richmond, Virginia (with whom Messrs. **Michael W. Maupin** and **James M. Rinaca**, Richmond, Virginia, were on the brief) for the applicant, Virginia Electric and Power Company.

Mr. James B. Dougherty, Washington, D.C., for the intervenors, Potomac Alliance and Citizens Energy Forum, Inc.

Mr. Steven C. Goldberg for the Nuclear Regulatory Commission staff.

DECISION

This proceeding involves the application of the Virginia Electric and Power Company for an amendment to the outstanding operating license for Unit 1 of its North Anna nuclear facility. The sought amendment would enable the applicant to install new, higher density storage racks in the spent fuel pool which is to serve the needs of both Unit 1 and the adjacent Unit 2.¹ This in turn would increase the total storage capacity of the pool from 400 to 966 spent fuel assemblies.

On August 6, 1979, the Licensing Board granted the applicant's motion for summary disposition of all issues in its favor and, accordingly, authorized the issuance of the license amendment. The Board's reasons for doing so were subsequently set forth in an order entered on August 24, 1979 and supplemented the following day. LBP-79-25, 10 NRC 234.

Dissatisfied with that result, the Intervenors, Potomac Alliance and Citizens Energy Forum, Inc., have appealed. Upon full consideration of the various assignments of error underlying the appeal, we affirm.

¹ Unit 2 has not as yet been licensed for operation.

I

The motion for summary disposition (as later supplemented) was addressed to each of those eight contentions advanced by the intervenors which the Licensing Board entertained. In support of the motion, the applicant supplied the Licensing Board with (1) a statement of the material facts as to which there assertedly was no genuine issue to be heard; (2) a 61-page "summary" of the proposed pool modification (which had been previously submitted to the NRC staff in May 1978 in conjunction with the license amendment application); and (3) two affidavits. One of the affiants, the engineer responsible for the design and installation of the new racks, averred that he was familiar with the content of the summary and that it was "true and correct to the best of [his] knowledge and belief."²

By virtue of 10 CFR 2.749(a), the Intervenor was obliged to respond to the motion with, *inter alia*, "a separate, short and concise statement of the material facts as to which it is contended that there exists a genuine issue to be heard." That Rule goes on to provide that the material facts asserted by the movant will be deemed to be admitted unless the opposing party controverts them. *Ibid*. Further, if the motion is properly supported, the opposition may not rest upon "mere allegations or denials"; rather, the answer "must set forth specific facts showing that there is a genuine issue of fact." 10 CFR 2.749(b).³

It is with these requirements in mind that we now turn to the Intervenor's insistence before us that, with respect to three of their eight contentions, a genuine issue of material fact was shown by them to exist.⁴ We consider the contentions *seriatim*.

² Affidavit of H. Stephen McKay, dated May 11, 1979, at pp. 1-2.

³ If, on the other hand, the movant's papers are insufficient to establish the absence of a genuine issue of material fact, the grant of summary disposition is foreclosed without regard to the content of the answer. *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 752-54 (1977).

⁴ The Intervenor does not specifically appeal from the grant of summary disposition on their remaining five contentions. But they do complain of the asserted failure of the Licensing Board to explicate in enough detail the factual and legal bases for its conclusions and appear to call for a reversal of the entire decision on that ground. Although we can agree that the Board could have confronted the facts and illumined its reasoning more comprehensively than it did, the remedy suggested by the Intervenor nevertheless is inappropriate. We are not here confronted with an appeal from an initial decision rendered following a full evidentiary hearing at which conflicting testimony was adduced (thus requiring the trier of fact to make choices). Instead, the question at hand is whether the applicant was entitled as a matter of law to summary disposition by reason of the want of any genuine issues of material fact. Although a fuller development below of the Board's thinking on that question might have been helpful to us, it is not essential to our disposition of the appeal.

We do not mean to suggest, of course, that licensing boards are any less duty-bound to explain fully their rulings on disputed points of law than they are their resolution of controversies of fact generated by divergent testimony in an evidentiary hearing. To the contrary, every de-

(Footnote continued on next page)

A. The Intervenor contended below that neither the Applicant nor the Staff had adequately explored alternatives to the proposed spent fuel pool modification, as assertedly required by the National Environmental Policy Act. Specifically, they maintained that the following alternatives should have received more serious consideration: (1) the construction of an additional spent fuel pool onsite; (2) the physical expansion of the existing pool; and (3) the completion of the pool for North Anna Units 3 and 4 and its use to store spent fuel from Units 1 and 2.

In its statement of purportedly undisputed facts (buttressed by Section 4 of the summary of proposed modifications), the applicant addressed these suggested alternatives and indicated why each had been rejected in favor of the installation of higher density racks in the existing pool:

(1) It would require between four and six years to design, license, and construct a second pool for Units 1 and 2; moreover, the expense would be in the neighborhood of \$25,000,000 (in contrast, the proposed modification of the existing pool would involve an estimated total cost of \$2,700,000).⁵

(2) The existing pool is surrounded by structures necessary to facility operation—including the containments for Units 1 and 2, the auxiliary building, the decontamination building, the waste gas decay tanks, and the primary water storage tanks. In order to expand the boundaries of the pool, at least some of those structures would have to be moved. This would involve the expenditure of even more time, effort and money than would be required to build an additional pool for those units. Further, while the expansion was being accomplished, no spent fuel could reside in the pool and the facility would have to be shut down.⁶

(3) Units 3 and 4 are targeted for completion in “the mid to late 1980’s.” For a variety of assigned reasons, it would be difficult to accelerate the construction of the fuel building (which will house the pool for those units). Yet, the additional spent fuel storage capacity for Units 1 and 2 will be needed no later than 1983 (when, as unmodified, the existing pool could no longer accommodate additional spent fuel discharged during refueling).⁷

In support of its endorsement of the motion for summary disposition, the staff submitted the affidavit of the NRC environmental project manager for the North Anna facility. This affiant essentially concurred in the bases assigned by the applicant for not pursuing any of the Intervenor’s proffered alternatives. Additionally, he recorded his belief that none of those alterna-

(Footnote continued from previous page)

termination of a board on a matter crucial to the ultimate disposition of the proceeding before it should be sufficiently developed to enable the parties (and reviewing tribunals) to apprehend the essential ingredients of that determination.

⁵ Statement, pp. 27-28; Summary, pp. 7, 9.

⁶ Statement, pp. 28-29; Summary, p. 10.

⁷ Statement, pp. 29-30; Summary, p. 10A.

tives would be environmentally preferable to the Applicant's proposal; indeed, in his judgment the second alternative (*i.e.*, the physical expansion of the existing pool) would entail greater environmental effects.⁹

Appended to the intervenors' initial answer in opposition to the motion was a document labelled "statement of material facts as to which there is a genuine issue to be heard." In actuality, however, the statement set forth no facts at all bearing upon the consideration of alternatives. Rather, it was confined to an enumeration of those paragraphs in the applicant's statement with which the Intervenor's disagreed.

Subsequently, along with their third answer to the motion, the intervenors put before the Board below the affidavit of an "economic consultant in the fields of research methodology and data analysis, housing and community development, and energy." The thrust of the affidavit was that neither the Applicant nor the Staff had provided an adequate "factual and analytical basis on which to determine whether [the applicant's proposal] is economically more advantageous" than the Intervenor's suggested alternatives.¹⁰ For this reason, the affiant found himself unable, without the availability of further documentation, to express a professional opinion on the *economic* justification for rejecting the alternatives. With respect to the third alternative, he also averred that insufficient information existed to evaluate the Applicant's insistence that the pool for Units 3 and 4 could not be completed in sufficient time to accommodate the storage needs of the other two units.

1. As is seen from the foregoing, the Intervenor's asserted no facts which might bring into genuine question the Applicant's assertion that each of the three proposed alternatives was unacceptable by reason of both cost and timing. Rather, they confined themselves to a general denial of the assertion, coupled with an insistence on the part of their economic consultant that more information was needed. In short, what the intervenors in effect put forth was a disclaimer of their ability to ascertain whether a genuine issue of material fact existed with respect to the feasibility of their alternatives.

In the particular circumstances of this case, we are unpersuaded that the disclaimer stood as a bar to the acceptance of the Applicant's representations in its statement of material facts. To begin with, on the face of things a great deal more time and expense would appear to be involved in the construction of an additional spent fuel pool than in the installation of new racks in an existing pool. But if the Intervenor's harbored residual doubt about it, they certainly had ample opportunity to seek more information before filing their third response to the Applicant's motion.

⁹ Affidavit of Paul H. Leech on Alternatives Contention, dated June 4, 1979.

⁹ Affidavit of Dr. Phillip M. Weitzman, dated July 23, 1979.

¹⁰ *Id.*, at p. 2.

Insofar as the second alternative is concerned, inspection of Figure 1.2-2 in the Final Safety Analysis Report for Units 1 and 2 would have confirmed the fact that the existing pool could not be physically expanded without first undertaking to move other structures, such as the containments and the auxiliary and decontamination buildings. Here, too, we would think there to be not much room for serious question that this would be a considerably more expensive and time-consuming project than reracking the existing pool. Once again, however, if the Intervenor's consultant nonetheless was uncertain on the matter, the Applicant could have been asked to provide additional details.

Finally, confronted with the modification project engineer's sworn endorsement of the Applicant's representation to the Staff that the Units 3 and 4 pool could not be completed in time, it was not enough for the Intervenor simply to deny its truth. (On this score, the economic consultant disclosed no credentials which might have qualified him to pass an expert judgment on the reasons assigned by the Applicant in support of that representation.)

2. There is, however, a still more compelling reason why the Licensing Board correctly declined to order a hearing to explore further the Intervenor's suggested alternatives. This reason has its foundation in two prior decisions of this Board: *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155 (1978); and *Portland General Electric Company* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979).

In *Midland*, we were concerned with, *inter alia*, the question whether there need be a consideration of suggested alternatives which were said to be economically (but not environmentally) superior to the construction and operation of the proposed nuclear facility. Our answer was in the negative:

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 162-63 (footnotes omitted).

Midland was written largely in the context of the requirement in Section 102(2)(C) of NEPA, 42 U.S.C. 4332(2)(C), that alternatives be fully explored in an environmental impact statement whenever an agency contemplates a "major federal action significantly affecting the quality of the human environment."¹¹ In the later *Trojan* decision, we were called upon to determine the applicability of Section 102(2)(E) of that Act, 42 U.S.C. 4332(2)(E), to a proposal (such as the one at bar) to install new racks in a spent fuel pool. That Section, which is not expressly limited to "major federal actions,"¹² requires the agency 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." Finding that the record established without contradiction that the installation and use of new racks in the Trojan pool would have negligible environmental impact and, additionally, would not present unresolved conflicts over the commitment of available resources, we held that this mandate did not come into play. As we saw it,

there is no obligation to search out possible alternatives to a course which itself will not either harm the environment or bring into serious question the manner in which this country's resources are being expended.

9 NRC at 266.

As applied to this case, these decisions teach that there was no necessity to explore further the Intervenor's suggested alternatives unless there was some basis for believing that the proposed modification might either have a

¹¹ The licensing of the construction of a nuclear power plant indisputably is such an action.

¹² See *Hanly v. Kleindienst* (Hanly II), 471 F.2d 823, 834-835 (2d Cir. 1972), cert. denied 412 U.S. 908 (1973); see also *Trinity Episcopal School Corp. v. Romney*, 523 F.2d 88, 92-93 (2d Cir. 1975); on remand, *Trinity Episcopal School Corp. v. Harris*, 445 F. Supp. 204 (S.D.N.Y. 1978), rev'd and remanded sub. nom. *Karlen v. Harris*, 590 F.2d 39 (2d Cir. 1978), rev'd sub. nom. *Strycker's Bay Neighborhood Council, Inc. v. Karlen*, ___ U.S. ___, 62 L.Ed.2d 433 (January 7, 1980).

significant environmental effect or give rise to a controversy over the allocation of resources. Moreover, in order to reject the Applicant's proposal, it would have to be determined *both* that (1) at least one of the alternatives was environmentally superior; *and* (2) that environmental superiority was not outweighed by other considerations such as comparative costs.

Examination of the record before the Licensing Board discloses that the Intervenor did not establish the existence of any genuine issue of fact with regard to either one of the preconditions for the exploration of their suggested alternatives. In its motion for summary disposition (at pp. 5-6, 8-9, 11-12, 18-20), the Applicant called attention to the conclusions of the Staff in its Environmental Impact Appraisal (EIA) that the operation of the pool with its expanded storage capacity would have negligible incremental impact upon the environment.¹³ In responding to the motion, the Intervenor offered nothing which might have brought into legitimate question the correctness of those conclusions. Insofar as the other precondition is concerned, the intervenors have never endeavored to explain why the installation of new racks in a spent fuel pool might engender a conflict concerning alternative uses of available resources. And it is just as difficult now as it was a year ago (when *Trojan* was decided) to fathom how such a conflict might arise.¹⁴

In view of these considerations, there is no occasion to proceed to explore in depth whether, in any event, intervenors had met their additional burden of showing there to be a triable issue on the Applicant's further assertion¹⁵ (later supported by the affidavit of the NRC environmental project manager for North Anna)¹⁶ that none of the suggested alternatives was environmentally superior to the proposed modification. On that score, we content ourselves with noting obvious: (1) if the Applicant's proposal will have minimal incremental environmental effects, it is scarcely likely that any alternative to it would be materially advantageous; and (2) such courses of action as building a new pool or moving existing structures to accommo-

¹³ See EIA, pp. 5-12, 22-23, 26-28. This document had been routinely submitted to the Licensing Board by staff counsel on April 10, 1979. In an affidavit executed on June 4, 1979, appended to the staff's June 5 response to the motion for summary disposition, the North Anna environmental project manager (Paul H. Leech) stated that the EIA had been prepared under his direction and that its content was "true and correct to the best of [his] knowledge."

¹⁴ Among other things, the EIA reflects (at p. 24) that this proposed pool modification would require some engineering talent, approximately 5,000 hours of labor and 322,000 lbs. (161 tons) of stainless steel. According to the EIA, that quantity of steel represents less than 0.0001 percent of the total amount of stainless steel used annually in the United States.

¹⁵ Motion for summary disposition, pp. 21-22.

¹⁶ See p. 454-455, *supra*.

date the physical enlargement of the present pool might well be more disruptive to the environment.¹⁷

B. We next consider the Intervenor's contention below which related to the service water cooling system for Units 1 and 2. That system was the focal point of our recent decision concerning the settlement of the ground beneath the facility's service water pumphouse. ALAB-578, 11 NRC 189 (February 11, 1980). Among its other functions, the system provides cooling water for the heat exchangers which are a part of the component cooling system. In turn, the latter system supplies water for, among other things, the spent fuel pool cooling system. In essence, the Intervenor asserted that, if the proposed modification to the spent fuel pool were made, the service water cooling system would prove inadequate to enable the component cooling system to perform its functions with respect to the pool.

This claim was founded entirely upon an April 4, 1979 report submitted by the Applicant to the Commission.¹⁸ That report suggested that, under certain postulated accident conditions, the temperature of the water in the service water cooling system might reach 110°F, producing water temperatures in the component and spent fuel pool cooling systems of approximately 113°F and 177°F, respectively.

In pointing to these analytic results, the Intervenor did not indicate what they thought to be the potential safety significance of a 177°F temperature level in the pool; *i.e.*, whether they were concerned that the pool water might boil away (leaving the spent fuel elements uncooled) or that the structural integrity of the pool might be affected by heat-induced stresses.¹⁹ From their third answer to the motion for summary disposition (at p. 10), it is inferable that their reliance on the April 4 report stemmed from the disclosure in the Final Safety Analysis Report for Units 1 and 2 (at p. 9.1-5) that the spent fuel pool cooling system was designed to maintain the water

¹⁷ We need not pause long over the Intervenor's assertion at argument (App. Tr. 25-26) that the portion of our *Trojan* decision discussed above is inconsistent with *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). The latter decision dealt exclusively with the issue of the need for a formal Commission finding regarding the likelihood that the spent fuel pools there involved would become permanent repositories for nuclear wastes. See p. 464, *infra*. Nothing said by the court on that issue has any conceivable bearing upon the question of when alternatives to a proposed pool modification must be explored.

¹⁸ Licensee Event Report No. 79-044/OIT-O, attached to the Intervenor's May 9, 1979 motion to amend their petitions to intervene.

¹⁹ In connection with a different contention, dealing with the effects of long-term exposure to heat and radiation, the Intervenor did raise a question regarding the maintenance of the integrity of the pool and its contents. See pp. 461-463, *infra*.

temperature in the spent fuel pool at no more than 170°F.²⁰ Although that system is equipped with two heat exchangers (coolers) and two pumps, it was assumed for design purposes that only one of each would be in operation. It was further assumed that the water temperature in the component cooling system would not exceed 105°F.

The question thus is whether, in the documentation supporting its motion for summary disposition, the Applicant sufficiently established that the potential increase of the pool water temperature to a level above the 170°F design criterion would not pose a safety problem. In this connection, it appears from the applicant's summary of the proposed modifications (at pp. 47-52, attested to by the modification project engineer)²¹ that a further analysis of the operation of the spent fuel pool system had been conducted (1) seemingly in light of the April 4, 1979 report; and (2) taking into account the proposed enlargement of fuel storage capacity. That new analysis revealed that, so long as one pump and both heat exchangers were in use, the pool temperature would consistently remain below 170°F. Should there be a failure of both a pump and a heat exchanger, the 170°F level might be exceeded for the four to five day period of maximum decay heat load.²² But even during that period, boiling would be prevented and the water temperature would remain below 177.5°F. The significance of that value is that, assuming a pool water temperature of 177.5°F, the spent fuel pool with its increased storage capacity would remain structurally sound even if subjected to the added stress of a design basis earthquake.²³

In further support of the Applicant's motion for summary disposition, the Staff submitted the affidavit of a reactor engineer whose responsibilities included the review of spent fuel pool cooling systems. That affiant had studied the Applicant's analyses and expressly approved the conclusion that, with one pump and two heat exchangers, the FSAR criterion would be maintained. In addition, he had determined that "[s]hould only one [heat exchanger] be available during [the] peak heat load period, the resulting pool water temperatures . . . are only slightly above the previously estab-

²⁰ This inference is supported by the reference to that FSAR water temperature criterion at p. 2 of the Citizens Energy Forum's statement of material facts (filed with that intervenor's first answer to the motion for summary disposition). The reference was in connection with a different contention which has not been brought to us.

²¹ See p. 453, *supra*.

²² The analysis assumed, *inter alia*, a recent full-core discharge from either Unit 1 or 2 coupled with a loss-of-coolant accident in either Unit 3 or 4. The pool would experience its maximum heat load immediately upon receiving the spent fuel. As the fission products in the spent fuel decayed, the heat load would decrease.

²³ Final Report for Structural Analysis of the spent fuel pool for Units 1 and 2, pp. 3-7 (attached to the Applicant's answers to Potomac Alliance's interrogatories, dated June 20, 1979). The north wall reinforcement referred to in that report and depicted at p. 28 of the summary of proposed modifications had been installed as of May 6, 1977. See Amendment No. 62 to FSAR, Fig. 1.2-17.

lished limits and will [neither] result in unacceptable operating conditions nor . . . adversely affect the health and safety of the public.”²⁴

As above noted, in advancing their service water cooling system contention, the Intervenor had relied completely on the Applicant's April 4, 1979 report. They had insisted that the information contained therein demonstrated the existence of a serious problem respecting the adequacy of that system and that “[t]he proposed amendment should not be granted absent adequate investigation of this problem.”²⁵ Upon being confronted with the Applicant and Staff affidavits setting forth the results of the post-April 4 analysis, however, the Intervenor made no effort to demonstrate that a genuine issue of material fact still existed. More specifically, at no juncture did they point to anything which might cast doubt upon the Applicant's thesis that, even should the postulated accident conditions occur, the facility's cooling system would remain capable of maintaining the pool water temperature at a level which posed no threat to the public health and safety. In these circumstances, there was nothing to be heard.²⁶

C. Finally, the Intervenor contended that, over a period of time, the heat and radiation which allegedly would be brought about by the storage of additional fuel in the pool would affect the integrity of the pool and its contents. Specific reference was made to the stainless steel storage racks and pool liner, as well as to the zircaloy fuel cladding. According to the intervenor, the applicant had not adequately assessed the possibility that the incremental heat and radiation would cause corrosion and stress problems with regard to those materials.

In support of its motion for summary disposition on that contention, the applicant supplied, *inter alia*, the affidavit of a materials engineer expe-

²⁴ Affidavit of Jared S. Weirmiel on Service Water Cooling System Contention, dated June 28, 1979, at p. 2. The reason for the plural reference to “temperatures” and “limits” is explained in fn. 26, *infra*.

²⁵ Motion to Amend Petition for Leave to Intervene, at p. 4 (May 9, 1979).

²⁶ We have limited our discussion to the possible effects of the so-called “abnormal” case, which assumes (among other things) that the spent fuel pool contains a full core of nuclear fuel freshly discharged from either Unit 1 or 2. See fn. 22, *supra*. The FSAR also contains a design criterion of 140°F for the “normal” case, which assumes that only one-third core of nuclear fuel from either Unit 1 or 2 has just been discharged into the pool. See, e.g., 10 NRC at 246. The Applicant's most recent temperature analysis considered both the “normal” and the “abnormal” case under the postulated accident conditions (*i.e.*, a loss-of-coolant accident in either Unit 3 or 4 coupled with the simultaneous failure of both a pump and a heat exchanger). It disclosed that, in the “normal” case, the pool temperature might reach 148°F for a short interval during the period of maximum decay heat load. Because we have found no unacceptable safety consequences as a result of a short-term pool temperature of 177°F, it obviously follows that the lower short-term temperature of 148°F would likewise have no such consequences. In this regard, the Staff's affiant considered both situations in reaching his conclusions.

²⁷ Affidavit of Robert W. Calder, dated May 11, 1979, at p. 1.

rienced in metallurgy. He stated his belief that "storing 966 instead of 400 spent fuel assemblies in the North Anna 1 and 2 spent fuel pool [would not] materially increase the corrosion of the fuel cladding, the spent fuel storage racks, or the pool liner."²⁷ As he pointed out, the amount of additional radiation to which the stainless steel and zircaloy would be exposed in the spent fuel pool was "insignificant" compared to the levels the same types of material would be exposed to in the reactor core during plant operation.²⁸ He went on to explain that the stainless steel and zircaloy (a zirconium alloy) materials were chosen because of their "low susceptibility to corrosive attack in a nuclear environment" (that is, exposure to high temperature and pressure in the presence of water and radiation). Because the FSAR design criteria for the pool water temperature would be rarely, if ever, exceeded (and then only for short periods),²⁹ the affiant did not think that the additional heat would materially increase either corrosion or stress of the fuel cladding, storage racks or pool liner.

According to the Applicant's summary of the proposed modifications (at pp. 11, 14-15, 17-19), attested to by the project engineer (see p. 453 *supra*), the existing purification system for the spent fuel pool was designed to maintain pool water clarity and to keep radiation levels within acceptable limits.³⁰ That system removes both radioactive and nonradioactive particulates from the pool water through the use of filters and demineralizers. The project engineer averred that the system would be adequate to extract any incremental impurities which might result from the proposed modification.

For its part, the staff submitted the joint affidavit of three engineers whose combined areas of expertise included nuclear power plant systems analysis, materials science and metallurgy.³¹ Those affiants stated that they concurred with the applicant's statement of material facts regarding the adequacy of the spent fuel purification system and the expected performance of the materials used.³² They also set forth in considerable detail the technical bases for their assumptions and conclusions. In essence, they averred that (1) the incremental heat and radiation would have little, if any, stress effect on the fuel cladding, storage racks, or pool liner and would not give rise to additional safety concerns;³³ and (2) the existing purification sys-

²⁷ In addition to the zircaloy-clad fuel, the core houses stainless steel-clad control rods. FSAR, Table 4.3-1 at p. 4.3-42.

²⁸ See p. 460 *supra*.

²⁹ See Section 9.1.3.1 of the FSAR, dealing with the spent fuel pool purification system. See also Chapter 12 (addressed to radiation protection), especially p. 12.1-5.

³⁰ Affidavit of George B. Georgiev, M.D. Houston and Jared S. Wermiel on Materials Integrity and Corrosion, dated June 1, 1979.

³¹ The statement of material facts (at pp. 14-16, 21-23) reflected the content of the summary of the proposed modifications and of the affidavit of the project engineer.

³² *Id.* at pp. 2-6.

tem would be adequate to remove the negligible amount of corrosion products which would be added to the pool as a consequence of the increased storage capability.³⁴ Further, they alluded to the fact that, should it prove necessary, the filters and demineralizer resin beds could be replaced at more frequent intervals to accommodate an increase in corrosion products.³⁵

In their answers to the motion for summary disposition, the Interveners did not endeavor to counter directly the averments of the Applicant and Staff experts. Nor did they present anything else to the Licensing Board which should have been taken as putting those averments into genuine dispute. For example, at page 8 of their third answer (filed on July 23, 1979) the Interveners appeared to claim that the pool water temperature would exceed an American Concrete Institute upper limit of 150°F for concrete structures containing fluids. What they failed to note, however, is that that standard is in terms applicable only to long periods of normal operation.³⁶ For "accident or any other short-term period," the prescribed temperature limitation is 350°F.³⁷ As we have seen (fn. 22, *supra*), these limits will be observed by the modified North Anna pool. The Interveners additionally maintained (at p. 15 of their May 30, 1979 response to the staff's interrogatories) that there have been "[n]umerous malfunctions in spent fuel facilities." But, assuming that to be so, this bare assertion is scarcely enough to undergird their contention that the integrity of the materials in the North Anna pool might be threatened by incremental heat or radiation. Finally, in insisting that "[c]orrosion effects that might occur after longer storage periods need to be examined in much greater detail,"³⁸ the Interveners did not indicate what they deem to be such periods. In any event, the Interveners provided no basis for believing that, during the period of licensed pool operation, there might be a problem in that regard.

II

The Interveners also complain of the Licensing Board's refusal to allow them to amend their petition to raise issues concerning the long-term man-

³⁴ *Id.* at pp. 6-9.

³⁵ *Id.* at p. 9.

³⁶ See American Concrete Institute, 1978 Supplement to *Code Requirements for Nuclear Safety Related Concrete Structures (ACI 349-76)* and *Commentary on Code Requirements for Nuclear Safety Related Concrete Structures (ACI 349-76)*, Appendix A at p. 12.

³⁷ *Ibid.*

³⁸ Interveners' first answer to the motion for summary disposition (filed on June 5, 1979 by Citizens Energy Forum), at p. 4.

agement and ultimate disposition of the spent fuel in the North Anna pool.³⁹ Relying on *Minnesota v. NRC*, fn. 17 *supra*, they assert that “a factual determination of the length of time for which the pool will be used is a necessary prerequisite to a valid NEPA analysis” of the pool modification.⁴⁰ In their brief, they seemed to suggest that it was the Licensing Board’s responsibility to make that determination.⁴¹ At oral argument, however, we were told that the responsibility rested instead with the Commission and that, pending its assessment of the likelihood that spent fuel pools might become long-term repositories for nuclear waste, no pool modifications to increase storage capacity could be authorized.⁴²

In *Minnesota*, the District of Columbia Circuit did remand the *Prairie Island* and *Vermont Yankee* spent fuel pool modification proceedings to the Commission for a determination of

whether there is reasonable assurance that an off-site storage solution will be available by the years 2007-09, the expiration of the plants’ operating licenses, and if not, whether there is reasonable assurance that the fuel can be stored safely at the sites beyond those dates.⁴³

The court made it clear, however, that it was not either vacating or staying the challenged operating license amendments designed to effect the expansion of the capacity of the *Prairie Island* and *Vermont Yankee* pools.⁴⁴ Beyond that, it neither explicitly held nor intimated that all other spent fuel pool modifications were to be held in abeyance to await the outcome of the Commission’s findings.

The Intervenors concede as much. But they insist that, absent an affirmative declaration on the part of the court of appeals that other spent fuel pool modifications might go forward in the interim, the inference must be drawn that the intent was to forbid them. Stated otherwise, the Inter-

³⁹ See Intervenors’ June 15, 1979 motion to amend petition to intervene. When it granted summary disposition on August 6, 1979, the Board announced that it was denying the motion to amend. Its reasons for so doing were set forth in an unpublished order entered on August 17, 1979.

⁴⁰ Brief, p. 25.

⁴¹ *Id.* at pp. 22-23.

⁴² App. Tr. 7-8, 83.

⁴³ 602 F.2d at 418.

⁴⁴ *Ibid.* Those amendments had been issued shortly after the Licensing Board had authorized them in LBP-77-51, 6 NRC 265 (1977) (*Prairie Island*) and LBP-77-54, 6 NRC 436 (1977) (*Vermont Yankee*). This was because no stay was sought or granted pending appellate review. Our affirmance of the two decisions (ALAB-455, 7 NRC 41 (1978)) was followed by a petition for Commission review. When that petition was denied, ALAB-455 became the final NRC action in the matter. The *Minnesota* decision was rendered on a petition for judicial review of ALAB-455.

venors would have it that the court's purpose was to allow only the *Prairie Island* and *Vermont Yankee* pool modifications to precede the further Commission assessment which it had directed.

This reasoning does not commend itself to us. To the contrary, we think precisely the opposite inference is to be drawn from the court's silence on the matter of whether the Commission must complete its assigned task prior to authorizing additional spent fuel pool modifications. More specifically, it seems manifest that, had the court thought there to be reason to differentiate in this regard between the cases before it and all other spent fuel pool modification proceedings, it would have said so expressly.

Be that as it may, the Commission itself has now addressed this very point. As authorized by the District of Columbia Circuit,⁴⁵ the Commission decided to consider the waste management question in a generic rulemaking proceeding (rather than simply in the *Prairie Island* and *Vermont Yankee* adjudicatory proceedings).⁴⁶ Thereafter, it decreed that, in accordance with its interpretation of *Minnesota*, "licensing practices need not be altered during this proceeding."⁴⁷ All possible doubt respecting the meaning and effect of that statement was recently interred. This January, the Commission denied the petition of an intervenor in another pending spent fuel pool modification proceeding for reconsideration of its decision that such proceedings "could continue during the waste confidence rulemaking subject, however, to retroactive application of whatever determinations are reached in the rulemaking."⁴⁸ In taking this action, it directly confronted and rejected that intervenor's argument that, by reason of the *Minnesota* decision, all individual spent fuel pool modification proceedings "must be suspended until the rulemaking is completed." In the Commission's view, this position was based upon a "misreading" of that decision.⁴⁹

In short, even had we viewed the matter differently, our obligation to follow Commission precedent would preclude acceptance of the Intervenor's insistence that the Licensing Board was compelled to withhold its authorization of the pool modification here involved until the generic rulemaking proceeding is completed.

⁴⁵ 602 F.2d at 419.

⁴⁶ See 44 *Fed. Reg.* 45362 (August 2, 1979).

⁴⁷ See 44 *Fed. Reg.* 61372, 61373 (October 25, 1979).

⁴⁸ See January 2, 1980 letter from the Secretary of the Commission to Karin P. Sheldon in connection with *Consumers Power Company* (Big Rock Point Nuclear Plant), Docket No. 50-155 SP. The letter was transmitted to us by staff counsel on January 9, 1980 and is included in the docket for the proceeding at bar.

⁴⁹ *Id.* at p. 1.

III

What remains is the Intervenor's complaint (Brief, P. 32) that they were not given enough time "to conduct adequate discovery or otherwise present an adequate defense to [the applicant's] motion."

1. The facts essential to an evaluation of this assertion are as follows:

On April 21, 1979, the Licensing Board formally granted the Intervenor's petitions for leave to intervene³⁰ and, pursuant to a previously reached agreement among the parties, accepted seven of their contentions.³¹ Thereafter, on May 4, the Board issued a notice to the effect that the evidentiary hearing would begin on June 26. The Applicant filed its motion for summary disposition on May 11 in order to comply with the time requirement on 10 CFR 2.749(a).³²

On May 15, 1979, the staff moved for a postponement of the commencement of the hearing to the week of July 9. Three days later, the Intervenor made a similar request seeking a postponement to a date not earlier than July 24. The Applicant opposed both motions because it hoped to be able to install the new racks before the September refueling of North Anna Unit 1 required it to store any spent fuel in the pool; it went on to request that, if rescheduled, the hearing start no later than July 9.³³ Upon consideration of the motions, the Board issued an order on June 6 in which it put off the hearing until July 9.

The Intervenor first answered the Applicant's motion for summary disposition on June 5, 1979, arguing that the motion was premature because of their outstanding discovery requests. Deeming that answer insufficient, on June 18 the Licensing Board granted summary disposition on six of the Intervenor's contentions, noting that its reasoning, as well as its evaluation of the remaining contentions, would appear in a subsequent order. The Board asked for further submissions on those remaining contentions.

In a second response to the Applicant's motion, filed on June 25, 1979, the Intervenor argued that, because they had just received the Applicant's answers to their discovery requests and were still waiting for the staff's answers, they were unable to "present by affidavit facts essential to justify [their] opposition" to the motion. See 10 CFR 2.749(c). Shortly thereafter, on June 29, the Licensing Board announced that it had reconsidered its order granting partial summary disposition and would allow the Intervenor

³⁰ That Board's earlier denial of the petition was reversed by us in ALAB-522, 9 NRC 54 (January 26, 1979).

³¹ The eighth accepted contention—that dealing with the adequacy of the service water cooling system—was advanced at a later date.

³² That Section provides that motions for summary disposition must be made "at least forty-five (45) days before the time fixed for the hearing."

³³ Response to motions to reschedule hearing, at pp. 2-3 (May 30, 1979).

until July 23 to supplement their papers with respect to all eight contentions. In conjunction with that announcement, the Board rescheduled the evidentiary hearing for August 14, 1979.

The Intervenor filed their third answer to the Applicant's motion on July 23, 1979, again arguing that summary disposition would be improper—this time, on the merits.³⁴ As heretofore seen, the Board granted the Applicant's motion two weeks later.

2. As the Intervenor acknowledges, we do not inject ourselves into scheduling controversies absent "a truly exceptional situation." *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-293, 2 NRC 660, 662 (1975). More particularly, we "enter the scheduling thicket cautiously" and then only "to entertain a claim that a [licensing] board abused its discretion by setting a hearing schedule that deprives a party of its right to procedural due process." *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 188 (1978) (footnote omitted); cf. *Southern California Edison Company* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-212, 7 AEC 986, 991-94 (1974). In this instance, without regard to whether we would have made the same scheduling determinations as did the Board below, no violation of due process is apparent.

The Intervenor's principal grievance seems to be that the nine-week interval between the formal grant of their intervention petition (on April 21) and the date initially fixed for the hearing (June 26) was too short to the point of being unacceptable *per se*. Even if there might be substance to that claim, the fact remains that the hearing date was later twice postponed—first to July 9 and thereafter to August 14. In Intervenor's view, these postponements were of no help to them; we are told (Br. p. 35-36) that the "fits and starts" of the hearing schedule disrupted their efforts to "develop a substantial case" and to prepare "an effective rebuttal" to the motion for summary disposition. No doubt, Intervenor would have been advantaged had the Licensing Board set a July 9 or August 14 hearing date *ab initio*. But litigants are frequently confronted with stringent time limits which, on request, are subsequently relaxed to provide them with an additional period within which to do what is required of them (*e.g.*, prepare for trial, respond to motions or file appellate briefs). We know of no authority for the Intervenor's thesis that, where this occurs, only the original allotted time period is to be considered in determining whether due process has been observed.

Closely related is the Intervenor's argument that they had an insufficient opportunity to respond to the motion for summary disposition. The interval between the filing of the motion (on May 11) and the submission of the Intervenor's third answer (on July 23) was slightly in excess of 13 weeks.

³⁴ Prior to the time the third answer was filed, their discovery had been completed.

Subtracting from that period the approximately two weeks which elapsed between the grant and reconsideration of partial summary disposition on six of the contentions (June 18 to June 29), the Intervenors still had over two and one half months in which to demonstrate that they were raising genuine issues of material fact. Moreover, when they filed their third answer, the Intervenors did not apprise the Licensing Board of their perceived need for a further opportunity to respond to the motion, let alone formally request that they be given such an opportunity. In this connection, there is no reason to suppose that, had it been supplied with a persuasive reason for extending once again the Intervenors' time to complete their response, the Board would have denied that relief. Whether or not, as the Intervenors insist, the Board was disposed to accommodate the applicant's desire to install the new racks before the initial refueling of Unit 1,⁵⁵ it had manifested throughout a willingness to treat favorably applications for alterations in the hearing schedule.

For the foregoing reasons,⁵⁶ the grant of the applicant's motion for summary disposition is *affirmed*.

IT IS SO ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁵⁵ The basis for this desire was explained in the affidavit of E. Ashby Baum, which was appended to the Applicant's May 30, 1979 response to the Intervenors' and Staff's motions to reschedule the hearing. Mr. Baum noted that, if the reracking took place before any irradiated fuel were stored in the pool, the workmen engaged in the project would be spared any radiation exposure. Further, the removed racks would not themselves have been exposed to radioactive contaminants (such exposure would require special handling under Commission regulations governing the disposal of radioactive wastes). These considerations were entitled to weight in the scheduling of the proceeding although, of course, they had to be subordinated to the Board's obligation to insure that each party had a reasonable opportunity to develop its position.

⁵⁶ We have also examined on our own initiative the record underlying the summary disposition of those contentions of the Intervenors which were not specifically embraced by the appeal. That review has disclosed no error requiring corrective action. Nor have we uncovered any other cause to conclude that the installation and use of the higher density storage racks in the North Anna pool might either pose an undue risk to the public health and safety or have a significant effect upon the environment.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

HOUSTON LIGHTING AND
POWER COMPANY

Docket No. 50-466

(Allens Creek Nuclear Generating
Station, Unit 1)

March 25, 1980

The Appeal Board dismisses as interlocutory the appeal of a petitioner for intervention from the Licensing Board's partial rejection of the contentions advanced by him in connection with his 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; *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-329, 3 NRC 607, 610 (1976).

Mr. William J. Schuessler, Houston, Texas, appellant
pro se.

MEMORANDUM AND ORDER

1. In the course of its unpublished March 10, 1980 order, the Licensing Board considered (at pp. 91-103) the admissibility of the contentions advanced by William J. Schuessler in connection with his petition for leave to intervene in this construction permit proceeding involving the Allens Creek nuclear facility. For one reason or another, all but contentions 6 and 14 were rejected. Those two contentions dealt with the feasibility of evacuating persons in the Allens Creek area should there be a serious accident at the facility. The Board combined the contentions and announced it would defer ruling upon their admissibility pending final Commission action upon cer-

tain proposed amendments to existing emergency planning regulations. See 44 *Fed. Reg.* 75167 (December 19, 1979). The Board went on to indicate (at p. 103) that, once the Commission had acted,

we will either rule upon the admissibility of the combined contentions of permit Mr. Schuessler to amend them. At that subsequent time, should we reject said combined contentions and deny his petition for leave to intervene, Mr. Schuessler's right is preserved to appeal to the Atomic Safety and Licensing Appeal Board within ten (10) days after service of such an Order wholly denying his petition for leave to intervene.

Apparently not willing to await the disposition of combined contentions 6 and 14, Mr. Schuessler has endeavored to appeal to us from the rejection of the other contentions.

2. It is manifest that the appeal must be summarily dismissed on the ground that it is unauthorized by the Commission's Rules of Practice. 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. As has been seen, the March 10 order would not have that effect; to the contrary, the Licensing Board has withheld its decision on the grant or denial of Mr. Schuessler's petition pending its ruling on combined contentions 6 and 14.

As the Licensing Board correctly noted, should the combined contentions ultimately be rejected and his intervention petition accordingly denied, Mr. Schuessler will be able then to take an appeal under 10 CFR 2.714a.¹ The question on any such appeal would be whether at least one of his several contentions should have been accepted as litigable, with the consequence that his intervention petition should have been granted. See *Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424 (1973).² On the other hand, should the Licensing Board eventually decide to entertain combined contentions 6

¹ In this connection, Mr. Schuessler's papers before us reflect an erroneous belief that appeals under Section 2.714a must be filed within 10 days of the date upon which the challenged order is served by mail. He obviously overlooked the provisions of 10 CFR 2.710 to the effect that:

Whenever a party has the right or is required to do some act or take some proceeding within a prescribed period after the service of a notice or other paper upon him and the notice or paper is served upon him by mail, five (5) days shall be added to the prescribed period.

² There appears to be no dispute that Mr. Schuessler, who resides 35 miles from the facility, has established the requisite standing to intervene.

and 14 and the intervention petition be accordingly granted, Mr. Schuessler will have to wait until the Board renders its initial decision before complaining to us of the rejection of his contentions.³

Appeal *dismissed*.

IT IS SO ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

Mr. Farrar did not participate in the consideration or disposition of this matter.

³ Any complaint along that line would be asserted as part of Mr. Schuessler's appeal from the initial decision taken under 10 CFR 2.762(a) (were that decision to be regarded by him as sufficiently unfavorable to warrant his seeking to overturn it).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

HOUSTON LIGHTING AND
POWER COMPANY

Docket No. 50-466

(Allens Creek Nuclear Generating
Station, Unit 1)

March 27, 1980

The Appeal Board dismisses as interlocutory the appeal of an intervenor from the Licensing Board's rejection of one of the contentions advanced by him in his petition for leave to intervene in this proceeding.

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; *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-329, 3 NRC 607, 610 (1976).

Mr. Bryan Baker, Houston, Texas, appellant *pro se*.

MEMORANDUM AND ORDER

Bryan Baker endeavors to appeal from so much of the Licensing Board's unpublished March 10, 1980 order as rejected one of the contentions submitted in connection with his petition for leave to intervene in this construction permit proceeding. It appears, however, that Mr. Baker's intervention petition was granted on the strength of another contention advanced by him. Order, pp. 45-47. In these circumstances, the appeal must be summarily dismissed on the ground that it is unauthorized by the Commission's Rules of Practice. As we had occasion to observe a few days ago in disposing of the appeal of another petitioner dissatisfied with the March 10 order:

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 469 (March 25, 1980).¹

Appeal *dismissed*.

IT IS SO ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹ As ALAB-585 went on to point out, an intervenor in Mr. Baker's situation must await the rendition of the Licensing Board's initial decision. If dissatisfied with that decision, the Intervenor can take an appeal 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.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

PUBLIC SERVICE COMPANY
OF OKLAHOMA
et al.Docket Nos. STN 50-556
STN 50-557(Black Fox Station,
Units 1 and 2)

March 28, 1980

On remand from the Commission (CLI-80-8), the Appeal Board returns, with instruction, the cause to the Licensing Board.

MEMORANDUM AND ORDER

Last December 7th we held in ALAB-573 that existing NRC policy precluded consideration of "Class 9 accidents" in licensing proceedings involving individual land-based nuclear power reactors.¹ We further ruled that this policy had not been set aside by the Commission's recent *Offshore Power* decision.² Rather, we noted in ALAB-573 that "the Commission has reserved to itself the right to decide whether such matters [*i.e.*, Class 9 accidents] are to be considered in any given case until it adopts a new general policy," which it would do following completion of a formal rulemaking proceeding on the subject to be commenced presently.³ We also noted that the Commission had instructed the staff to advise it whether Class 9 events should be considered in pending cases until the new policy had been formulated following completion of the rulemaking.

In ALAB-573, we read the Commission's *Offshore* opinion to have called upon the staff to advise it on a case-by-case basis whether Class 9 matters were to be taken up. Consistent with that understanding, we told

¹ *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 790-792 (December 7, 1979).

² *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257 (1979).

³ ALAB-573, 10 NRC at 791.

the staff to render its views on that subject to the Commission in this case, and gave the other parties opportunity to respond to the staff's advice (we took no position on the question ourselves).

In due course the staff followed our instructions. It and certain other parties furnished the Commission with their views on the appropriateness of taking up Class 9 accidents in this construction permit proceeding. In acting on those papers, however, the Commission has made clear that we have misconstrued the policy it expressed in *Offshore Power*. In a decision rendered on March 21, 1980, the Commission vacated that portion of ALAB-573 dealing with Class 9 accidents. CLI-80-8, 11 NRC 435. In doing so, the Commission confirmed (as we had held in ALAB-573) that NRC policy remains not to consider those events in individual licensing proceedings involving land-based plants and reiterated that it wished to reconsider that general policy only after a rulemaking proceeding and not on a piecemeal, case-by-case basis. *Id.* at 3.

The Commission did allow for the possible consideration of Class 9 accidents in the interim, but only where special circumstances in particular cases warranted doing so. But the Commission stressed that it alone would make that determination and explained that its *Offshore Power* decision "envisioned that the staff would bring an individual case to the Commission for decision *only when the staff believed that such consideration was necessary or appropriate* prior to policy development." CLI-80-8, 11 NRC at 434 (emphasis added). We read the Commission's decision in CLI-80-8 as telling us that we were mistaken in ALAB-573 in not leaving entirely in the staff's discretion when to alert the Commission to the need to take up Class 9 events in individual cases.

Accordingly, the Licensing Board should continue hearing the radiological health and safety proceedings in this cause in a manner consistent with this opinion and the Commission's Memorandum and Order in CLI-80-8.

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

Charles Bechhoefer, Chairman
Dr. James C. Lamb
Dr. Emmeth A. Luebke

In the Matter of

**HOUSTON LIGHTING AND
POWER COMPANY, et al.**

**Docket Nos. STN 50-498 OL
STN-50-499 OL**

**(South Texas Project,
Units 1 and 2)**

March 7, 1980

Responding to motions filed by the applicants and staff, the Licensing Board directs an intervenor in this operating license proceeding to respond further to interrogatories propounded by the applicants and staff.

RULES OF PRACTICE: DISCOVERY (INTERROGATORIES)

Where interrogatories seek to uncover the basis for and rationale of a contention, the responding party need not perform extended research or data gathering, but it must delineate the information currently in its possession (and the source of that information where applicable) on the subject in question.

RULES OF PRACTICE: PROTECTIVE ORDERS

Where a party fears that revealing the name of an informant or proposed witness or member, in response to discovery requests or other requirements, would occasion harm to or reprisal against such person, the party should apply for a protective order to limit disclosure of the names in question to the extent necessary to avoid the anticipated harm or reprisal. Applications for a protective order should include, *inter alia*, an outline of the factual basis upon which the order is believed to be warranted and the degree of protection deemed necessary.

**MEMORANDUM AND ORDER RULING UPON MOTIONS
TO COMPEL CEU TO RESPOND TO INTERROGATORIES**

On January 14, 1980, Citizens for Equitable Utilities, Inc. (CEU), an in-

tervenor in this operating license proceeding, filed a common set of answers to interrogatories previously submitted by the Applicants and NRC Staff, respectively.¹ On January 29, 1980,² both the Applicants and Staff filed motions to compel CEU to respond further to their interrogatories. CEU has not responded to either of these motions.³ We will treat them below. Because CEU's answers to interrogatories were furnished on a contention basis and were intended to respond to both the Applicants' and Staff's inquiries on a given contention, we will discuss the Applicants' and Staff's motions together, in terms of the contentions to which they relate.

Contentions 1 and 2

These contentions, which involved alleged construction and QA/QC deficiencies and falsification of certain construction records, are jointly sponsored by both CEU and Citizens Concerned About Nuclear Power, Inc. (CCANP). In responding to interrogatories on these contentions, CEU recognized the extensive responses of CCANP to the interrogatories on this subject but declined to provide any substantive answers on its own. It added, however, that it reserved the right "to file a supplement to and/or clarification of" CCANP's answers and that it would "not be limited nor bound" by CCANP's answers.

As the Applicants and Staff each point out, this response is unsatisfactory. "[T]he purpose of discovery is to enable each party *prior to hearing* to become aware of the positions of each adversary party on the various issues in controversy, and the information available to adversary parties to support those positions." *Pennsylvania Power And Light Company* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-31, 10 NRC 597, 600 (October 30, 1979) (quoting from unpublished Memorandum and Order in that proceeding, dated August 24, 1979). To fulfill this purpose, it is not necessary for a party such as CEU to perform extended research or data

¹ Consistent with the schedule in our Memorandum and Order of August 3, 1979, the Applicants and Staff each submitted discovery requests to CEU on November 5, 1979. Responses were to have been filed by December 21, 1979. CEU's January 14, 1980 answers were thus somewhat tardy (caused, according to CEU, by "circumstances entirely beyond its control"). Although we will accept that representation, we wish to point out that, if CEU found itself unable to respond in the time period specified, it should have sought an extension of time to do so prior to the expiration of the specified period. As a result of CEU's failure to follow that course, the Applicants (on December 31, 1979) and the Staff (on January 3, 1980) filed motions to compel CEU to respond to their discovery requests. Because CEU's answers (together with the instant motions) appear to render moot or supersede the earlier motions, those earlier motions are *dismissed*.

² Our Orders of January 24 and 25, 1980, granted the Staff and Applicants, respectively, an extension of time to January 29, 1980 to file such motions.

³ Because of CEU's failure to respond to the Applicants' and Staff's motions, we could have afforded the Applicants and Staff all the relief they requested on that basis. 10 CFR 2.707(a). Inasmuch as CEU is a *pro se* intervenor, we have examined the substance of the various interrogatories and answers to determine the relief which is warranted.

gathering in order to respond. Where, as here, interrogatories are merely seeking to uncover the basis for and rationale of a contention, a party must delineate the information, if any, currently in its possession (and the source of that information where applicable) on the particular subject. Presumably, it must have relied on information of some sort to formulate a contention; such information must be revealed. A party may, of course, indicate areas of its case which are still under development and where incomplete substantive answers are all that can be furnished. The identity of prospective witnesses may be such an area. (Responses such as this must be supplemented, as provided in 10 CFR 2.740(e).) But, we stress again that a party must, in response to discovery requests, identify the information, if any, which it possesses and on which it is basing its contentions.

With respect to Contentions 1 and 2, CEU is free, if it wishes, to rely on information provided by CCANP. Or it may wish to rely, in whole or in part, on different information. It need not make a final determination on such matters at this stage, but it nevertheless must identify the information, if any, on which it currently is relying. With these guidelines in mind, CEU is directed to provide answers to the Applicants' interrogatories A.1-38 and B.1-4, and the Staff's interrogatories 1-1 through 1-16 and 2-1 through 2-5. (Where the Applicants' and Staff's interrogatories may call for the same answers, CEU may, of course, furnish a common answer to both parties, as it has done with its earlier answers.)

One further point warrants some comment with regard to answers to the foregoing interrogatories (as well as other discovery requests). CEU states that:

For reasons unknown, we are encountering an extremely emotional, almost irrational, fear. This is being expressed not only by workers now at the South Texas Nuclear Power Plant site but also by those who have gone on to other jobs. There is a fear of harassment wherever they might be or whatever work they might be engaged in. They have insisted that their names not be divulged until they could be notified of the date set for a hearing and their names be intermingled with a number of others to be called as witnesses.

This statement is not explicitly tied or limited to any specific contention, although it would appear to have particular applicability to Contentions 1 and 2. In any event, the Applicants would have to instruct CEU that it cannot refuse to answer interrogatories nor refuse to provide information in its possession because of its "fear of harassment" for unidentified present and former employees at the South Texas Project.

Such an instruction would appear to be incomplete. The proper procedure for an analogous situation was recently outlined by the Appeal Board in *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377 (1979). There, the question was

whether an organization must reveal the name of at least one member in order to establish its standing to intervene. The organization claimed that revealing the names of members would threaten the rights of association of those members. To reconcile that claim with the necessity for knowing the name of at least one member to determine whether the organization had standing, the Appeal Board established the following procedure:

Upon a determination that an adequate showing has been made that public revelation of the identity of a member of the petitioner organization might threaten rights of association, the Licensing Board should place a protective order upon that information. The Order should provide that the information need be supplied only to the members of the Board and one or more designated representatives of the other parties to the proceeding. Additionally, it should prohibit further dissemination of the information to anyone (other than a member of a reviewing tribunal).

Id. at 400.

Although there are some differences between the factual situations in *Allens Creek* and in this proceeding, the principle established by the Appeal Board there seems equally applicable here: where revealing the name of an informant or proposed witness or member, in response to discovery or other NRC requirements, would occasion harm to or reprisal against such person, a licensing board can and should take steps to protect that person, consistent with achieving to the extent possible the purposes of NRC's discovery rules or other requirements. For that reason, even though some revelation of names may be required, the Board may well limit disclosure to an extent necessary to avoid the anticipated harm or reprisal. Therefore, if CEU believes that, in answering interrogatories on Contentions 1 and 2 (as we have directed) or any other contentions, it will subject its informants or witnesses to harassment, it should request a protective order.⁴ In doing so, it should outline the factual basis for its view that a protective order is warranted. Any request for a protective order should deal with each interrogatory or related group of interrogatories separately, setting forth relevant facts applicable to each. Such a request might also delineate the degree of protection deemed to be needed to avoid the feared harassment—e.g., the particular individuals to whom disclosure is sought to be restricted.

Contention 4

This contention relates to the adequacy of the protection of the facility

⁴ The Appeal Board in *Allens Creek* stressed that "this Commission and its adjudicatory boards have always proceeded on the assumption that the terms of all protective orders will be scrupulously observed by everyone who acquires confidential information under such an order." 9 NRC at 400.

against hurricanes. Both the Applicants and Staff sought specific information concerning this contention. In response, CEU provided copies of, or references to, certain documents but stated that it has not yet selected its expert witnesses. It also referred to potential retaliation against its informants or witnesses.

Although CEU's answers to certain of these interrogatories are adequate (subject to supplementation), it should provide further details (if it can) with respect to Applicants' interrogatories C.2, C.4-9, and Staff's interrogatories 4-1a and b, 4-2, 4-3, 4-5, and 4-6. (We read CEU's response as stating that it has not yet made the determinations required to respond to Applicants' interrogatory C.3; if that is not the case, then CEU should also answer that interrogatory.) To the extent that the documents listed by CEU are responsive to the Applicants' interrogatories requesting the identification of documents, CEU should indicate which of the documents listed are responsive to each of the various questions on documents (and, to the extent appropriate, the portions of the listed documents which are being relied on).

We note that certain of the interrogatories seek identification of persons upon whom CEU relies or has relied (as distinguished from those whom CEU intends to call as witnesses). This is a proper subject on inquiry. But, to the extent that CEU feels that responding to the interrogatories would reveal the names of certain persons whose identities should not be revealed at this time, it should request a protective order along the lines previously indicated, setting forth facts by which we can judge whether an order would be warranted and the conditions which should govern such an order.

Contention 5

This contention relates to the radionuclide bioaccumulation in aquatic organisms. In responding to interrogatories on this contention, CEU indicated where certain source material referred to in the contention can be found, and it named one person upon whom it intends to rely. But it failed to provide any substantive explanation for the claims it is making, stating only that the named person was preparing certain material, which would be made available as soon as it is received by CEU.

CEU should at least provide a brief explanation of the reasons it believes its contention has merit—*e.g.*, *why* it believes the cited material indicates that the Staff's FES is in error. It is free, of course, to undertake further development of its contention; "every detail" may not be developed, and CEU need not hasten this development in order to answer interrogatories (although, as it recognizes, it may be required to supplement any incomplete answers it provides). But at least a preliminary explanation should be furnished. CEU is therefore directed to provide further answers, to the extent it can presently do so, to Applicants' interrogatories D.2-7 and Staff's interrogatories 5-1a and b, and 5-2 through 5-5.

Contention 6

This contention concerns the accuracy of calculations of radionuclides deposition due to the relatively high and continual humidity which is said to exist in the area. CEU provided no substantive response at all to interrogatories on this contention, stating only that its research and study has begun and that witnesses have not yet been selected. (That answer is an adequate response to Applicants' interrogatory E.9 and Staff's interrogatory 6.1c, subject to supplementation as required.) Recognizing that its position on this contention may not yet be completely developed, CEU nevertheless should have outlined the information which led it to submit a contention on this subject and the sources of that information. Accordingly, CEU is directed to provide further responses to Applicants' interrogatories E.1-8 and Staff's interrogatories 6-1a and b, and 6-2 through 6-5.

Contention 7

This contention raises questions concerning the effect on the facility's cooling pond of soil conditions, water flow in the Colorado River, and groundwater supply. In responding to interrogatories seeking the factual basis, and sources of information, underlying this contention, CEU has supplied a list of certain documents but has not elaborated on how these documents relate to its claim or identified any persons upon whom it has relied or is relying. The Applicants' and Staff's interrogatories seek this sort of information. Under the NRC discovery rules, they are entitled to inquire comprehensively, prior to hearing, concerning the bases for a party's claim and the sources of information upon which it is relying. *Pennsylvania Power and Light Company* (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-31, *supra*, 10 NRC at 600. Therefore, CEU is directed to answer Applicants' interrogatories F.1-9 and Staff's interrogatories 7-1 through 7-7. (If CEU has not yet chosen its witnesses on this contention, or completed the development of its position, it can so state, as it has with other contentions. It need set forth only such information as it presently possesses, including the information on which it based its contention.)

Contention 8

This contention questions the adequacy of the emergency plan for the facility. It was premised upon the provisions of proposed amendments to 10 CFR Part 50, Appendix E (43 Fed. Reg. 37473, August 23, 1978) which were authorized to be used as "interim guidance." That proposal permitted consideration of whether there were special circumstances which would dictate that an emergency plan extend to areas beyond the low population zone (LPZ). Interrogatories propounded by the Applicants and Staff sought, *inter alia*, to inquire whether CEU has information establishing conditions which would warrant extension of the emergency plan to areas beyond the LPZ (and particularly the specific areas mentioned by CEU).

The Commission currently has under way a rulemaking proceeding with respect to emergency planning.¹ That rulemaking should be complete long before the time when we are ready to hear the emergency planning issues in this case. At the present time, however, it appears virtually certain that the final rule will require emergency planning for areas beyond the LPZ without regard to any showing of special circumstances. In that connection, the August, 1978 proposed amendments have been superseded by interim guidelines which require, *inter alia*, that emergency plans take into account emergency planning zones for airborne exposures of about 10 miles and for ingestion pathways of about 50 miles. It appears that, although smaller zones might be acceptable, an applicant would have to prove their acceptability. And greater distances could be shown to be warranted under certain circumstances. See "Draft Emergency Action Level Guidelines for Nuclear Power Plants" (NUREG-0610, September, 1979), sanctioned for interim use at 44 Fed. Reg. 75167, 75168 n. 1 (December 19, 1979); "Planning Basis for Emergency Responses to Nuclear Power Reactor accidents," 44 Fed. Reg. 61123 (October 23, 1979). The Commission's current interim guidance also suggests a greater role for State and local emergency plans than was heretofore the case. In these circumstances, it seems inappropriate to ask CEU at this time to answer questions designed to achieve information which was relevant to emergency planning under former guidelines but appears to be of little relevance under current standards. Insofar as they relate to Contention 8, therefore, the Applicants' and Staff's motions are *denied*.

It is our understanding that the Applicants will amend their FSAR to include an emergency plan intended to conform to new Commission guidelines. When they do so, they should send a copy to CEU. Within 30 days after service of that document, CEU may wish to amend its contention to indicate why it then believes the revised emergency plan to be deficient. If CEU files an amended contention, the Applicants and Staff may file discovery requests within 15 days of the service of such a contention; if an amended contention is not filed, the Applicants and Staff may file new discovery requests based on the existing contention within 15 days of the last date on which an amended contention could have been filed. Responses to the new discovery requests must be filed within 30 days after service of the request.

CEU is *directed* to answer various interrogatories, to the extent indicated above, within 30 days of the service of this Order. If it is unable to do so, it should attempt to work out an extension of time with the Applicants or Staff, as applicable; if it cannot work out an acceptable schedule, it may

¹ The Applicants originally wanted us to condition acceptance of CEU's emergency planning contention on the outcome of the rulemaking on emergency planning. In our Order of August 3, 1979, we declined to follow this course since, unlike the Applicants, we viewed the contention as raising legitimate issues under the then-current emergency planning guidelines.

request an extension from us, prior to the time that the period for filing responses has expired.

IT IS SO ORDERED.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Charles Bechhoefer, Chairman

**Dated at Bethesda, Maryland,
this 7th day of March, 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Chairman
Frederick J. Shon
Oscar H. Paris

In the Matter of

Docket No. 50-322

**LONG ISLAND
LIGHTING COMPANY**

**(Shoreham Nuclear Power Station,
Unit 1)**

March 14, 1980

The Licensing Board certifies to the Appeal Board pursuant to 10 CFR 2.718(i) and 2.785(b) the question whether a contention advanced by an intervenor concerning the possible need for inerting, venting, or strengthening the plant's primary containment system is cognizable in this operating license proceeding.

CERTIFICATION TO THE COMMISSION

This is a certification to the Commission under 10 CFR 2.718(i) and a request for policy guidance in accord with Appendix B to 10 CFR Part 2, paragraphs 1 and 3, submitted to the Appeal Board under 10 CFR 2.785(b).

On January 24, 1980, Shoreham Opponents Coalition (SOC) filed a document entitled, "Petition of the Shoreham Opponents Coalition (SOC) to Suspend Construction Permit for the Long Island Lighting Company's Shoreham Nuclear Power Station (Unit 1) and to Renotice Hearings in Docket No. 50-322, or in the Alternative, to Permit Late Intervention of SOC Pursuant to 10 CFR Part 2, Section 2.714" (SOC Petition).

On February 8, 1980, Long Island Lighting Company (Applicant) filed Applicant's Opposition to SOC's Requests for Renoticing and Intervention (Applicant Opposition). On February 6, 1980, Intervenor County of Suffolk (Suffolk) filed "Answer of the County of Suffolk to the Petition of the Shoreham Opponents Coalition (SOC) to Suspend Construction Permit for the Long Island Lighting Company's Shoreham Nuclear Power Station (Unit 1) and to Renotice Hearings in Docket No. 50-322, or in the Alterna-

tive, to Permit Late Intervention of SOC Pursuant to 10 CFR Part 2, Section 2.714." (Suffolk's Answer).

On February 7, 1980, North Shore Committee Against Nuclear and Thermal Pollution (Committee) filed "Answer of Intervenor North Shore Committee Against Nuclear and Thermal Pollution in Support of the Petition of Shoreham Opponents Coalition" (Committee's Answer).

On February 13, 1980, the NRC Staff (Staff) filed "NRC Staff Answer to the Petition of the Shoreham Opponents Coalition." (Staff Answer).

We have already ruled on the bulk of the issues raised by the SOC Petition. (Order Ruling on Petition of Shoreham Opponents Coalition, March 5, 1980). However, as we noted at pp. 18 and 19 of that order, we believe we need Commission guidance on the admissibility in our proceeding of one part of one proposed contention set forth in the SOC Petition, namely, the portion of SOC Contention 12 which reads:

12. *Mark II Containment:* Intervenor contend that the Shoreham primary containment system does not adequately fulfill the requirements of 10 CFR, Part 50, Appendix A, Criteria 4, 16, 50, and 51. This contention is supported by the fact of new information regarding: . . . the unresolved issues of LOCA hydrogen generation quantities demonstrated at TMI-2 and the possible need for inerting, venting, or strengthening at Shoreham.

Of this contention, Staff says, "Petitioners here challenge the Commission's regulation in this area, namely, 10 CFR 50.44, 'Standards for Combustible Gas Control System in Light Water Cooled Power Reactors,' and the contention should be dismissed on that basis." (Staff's Answer at p. 22). Applicant objects to the contention on other grounds. (Applicant's Opposition at pp. 25 *et seq.*). Suffolk's Answer did not specifically address the matter, nor did Committee's Answer.

We have already directed the parties to address a question which, in some measure, may impinge upon this contention:

Why is inerting for the Shoreham containment not recommended as a result of the TMI-2 accident while inerting is recommended for later plants of similar design?
(Order of March 5 at p. 25)

Since this question merely seeks clarification of the basis of a staff position set forth in NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations" it is not, in itself, a challenge to a Commission regulation.

We are aware, however, that the staff's position with regard to admissibility of the proposed contention may be well-founded. The Shoreham FSAR, at pp. 6.2-47 *et seq.*, in discussing combustible gas control, treats

only the standards set forth in 10 CFR 50.44, and concludes that the facility complies with those standards.¹

If, indeed, we are to examine the necessity for "inerting, venting, or strengthening" the containment in the light of the hydrogen generated at TMI-2, it seems clear that requirements exceeding those of 10 CFR 50.44 might be indicated. We, therefore, certify the following question to the Commission:

Is the proposed SOC Contention 12, as set forth *supra*, cognizable in our proceeding, in view of the fact that examination of ". . . LOCA hydrogen generation quantities demonstrated at TMI-2 . . ." may require examination of the consequences of hydrogen generation in excess of that set forth in 10 CFR 50.44?

We are aware that there pends before the Commission a similar certification from the Licensing Board in the TMI-1 case (*Metropolitan Edison Company*, Three Mile Island Nuclear Station, Certifications to the Commission, LBP-80-1, 11 NRC 37, January 4, 1980). We agree with that Board that the requirements of *Gulf States Utility Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 724-75 (1977) and *Virginia Electric Power Company* (North Anna Nuclear Power Station), ALAB-491, 8 NRC 245, 247-8 (1978) are such that if the TMI-2 accident has indeed raised generic questions about the quantities of hydrogen generated in a LOCA, Applicant and Staff should be required to demonstrate that the plant can be operated safely in the face of that still unresolved generic problem.

We further agree with the TMI-1 Board in believing that it would be a positive step to permit discovery to proceed and evidence to be taken on the hydrogen question in order to ". . . preserve for the Commission the option to defer ruling on these certifications . . ." until the record of the whole proceeding is before the Commission in accord with 10 CFR Part 2, Appendix B. We recognize, however, that such a procedure would, in practice, be little different from simply admitting the contention in the face of the Staff's possibly meritorious objection that it challenges a regulation. The possible importance of the matter to public health and safety prompts us simultaneously to seek Commission guidance and to recommend a procedure that would expeditiously build a record for a decision.

¹ The regulation, 10 CFR 50.44(d), sets forth methods to calculate the amount of hydrogen generation which is to be expected in a LOCA. Unfortunately, the amount apparently generated in the small break LOCA at TMI-2 was much larger than would have been predicted by the methods of 10 CFR 50.44.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Frederick J. Shon

Oscar H. Paris

Elizabeth S. Bowers, Chairman

**Dated at Bethesda, Maryland,
this 14th day of March, 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the matter of

UNION ELECTRIC
COMPANY

Docket No. STN-50-486
(10 CFR 2.206)

(Callaway Plant,
Unit 2)

March 10, 1980

The Director of Nuclear Reactor Regulation defers consideration of petition be issued to Union Electric Company which requested that a show cause order suspending the construction permit for Callaway, Unit 2, pending submission by the Public Service Commission of Missouri of the final decision in its proceeding on the generation expansion program of Union Electric Company.

NEPA—NEED FOR POWER

Under NEPA, the NRC must determine that the need for the power to be generated by a plant coincides reasonably with the operational date of the plant in order to assure that environmental impacts of a proposed action are not incurred earlier than necessary.

NRC—RESPONSIBILITIES UNDER NEPA

Petitioners who seek to reopen the issue of need for power after a construction permit has been granted have a difficult burden to bear. *See Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-359, 4 NRC 619, 620-21 (1976).

NEPA—NEED FOR POWER

The NRC places hearing reliance on information developed by local regulatory bodies which are charged with the duty of insuring that utilities within their jurisdiction fulfill the legal obligation to meet customer demands. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), ALAB-490, 8 NRC 234, 241 (1978).

INTERIM DECISION UNDER 10 CFR 2.206

By petition dated August 14, 1979, the Public Service Commission of the State of Missouri (hereinafter referred to as PSC) pursuant to 10 CFR 2.206 of the Commission's regulations requested the Director of the Office of Nuclear Reactor Regulation, the Director of the Office of Nuclear Material Safety and Safeguards, and the Director of the Office of Inspection and Enforcement to issue a show cause order to suspend the construction permit granted to Union Electric Company for Callaway Plant, Unit 2. This matter was referred to the Director of the Office of Nuclear Reactor Regulation because the subject matter of the requested action was within the jurisdiction of this office. Notice of receipt of the PSC petition was published in the Federal Register, 44 Fed. Reg. 53116 (Sept. 12, 1979).

The basis for the PSC's requested action is recent information developed by the PSC (in Preliminary Union Electric Company Peak Demand Projection) which indicates that the peak demand forecast of Union Electric Company may be erroneous. The PSC states that the National Environmental Policy Act, (NEPA) 42 U.S.C. 4321 *et seq.*, and the NRC's regulations implementing NEPA, 10 CFR Part 51, require the Commission to consider the environmental effects of the power to be generated by Callaway Plant, Unit 2. The PSC contends that in light of the recently discovered facts on peak demand forecast, this statutory obligation requires the NRC to suspend the construction permit while the facts upon which the permit was initially granted are reassessed.

For the reasons set forth in this decision, I have determined that no final decision on suspension of the construction permit for Callaway Plant, Unit 2 should be made at this time. A final decision on this matter should await the outcome of the hearings scheduled by the Missouri Public Service Commission for the spring of 1980.

I

An examination of the need for the generating capacity of a nuclear power plant is required to fulfill the Commission's obligations under NEPA. In a decision in the Seabrook case, *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 90 (July 26, 1977), the Appeal Board explained:

"Need for power" is a shorthand expression for the "benefit" side of the cost-benefit balance which NEPA mandates for a proceeding considering the licensing of a nuclear power plant A nuclear plant's principal 'benefit' is of course the electric power it generates. Hence, absent some 'need for power', justification for building a facility is problematical. *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 405 (October 29, 1976)."

Not only must the Commission determine that a need for the generating capacity of the plant exists, but it must also determine that the need for the plant coincides reasonably with the operational date of the plant. The reason the NRC concerns itself with the timing of the need for power is that a federal agency should not permit the environmental impacts of costs of a proposed action to be incurred earlier than necessary. The intent of NEPA is that any irretrievable and irreversible commitments of resources should not be made while environmentally less damaging alternatives may exist or may be developed. *Cf. Scientists' Institute for Public Information, Inc. v. AEC*, 481 F.2d 1979 (D.C. Cir. 1973).

The Commission has recognized, however, that some uncertainty is inherent in any prediction of the need for or demand for the electricity to be generated by a nuclear plant.

[E]very prediction has an associated uncertainty and . . . long range forecasts of this type are especially uncertain in that they are affected by trends in usage, increasing rates, demographic changes, industrial growth or decline, the general state of the economy, etc. These factors exist even beyond the uncertainty that inheres in demand forecasts: assumptions on continued use from historical data, range of years considered, the area considered, extrapolations from usage in residential, commercial, and industrial sectors, etc." *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-79-5, 9 NRC 609, 610 (1979).

Moreover, the Atomic Safety and Licensing Appeal Board has stated, "[g]iven the legal responsibility imposed upon a public utility to provide at all times adequate, reliable service—and the severe consequences which may attend upon a failure to discharge that responsibility—the most that can be required is that the forecast be a reasonable one in the light of what is ascertainable at the time made." *Kansas Gas and Electric Company, Kansas City Power and Light Company* (Wolf Creek Generating Station, Unit No. 1.) ALAB-462, 7 NRC 320, 328 (1978) (citations omitted). Consequently, applicants have never been required to demonstrate that need for the capacity of a plant and its proposed operational date coincide exactly.¹

¹ As the Appeal Board has stated:

"[i]f the electricity to be produced by a proposed project is genuinely needed . . . then the societal benefits achieved by having that electricity available are immeasurable. Those benefits need not be discounted because some possibility exists that the need-for-power may develop nearer the end than the beginning of the forecast spectrum. The adverse consequences to the public of insufficient generating capacity are serious ones, (discussed *supra*, p. 364, n. 57), far more so than those flowing from having the plant on line a year or even two before its capacity is absolutely necessary." *Niagara Mohawk Power Corporation* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 368-69 (1975).

II

During the construction permit proceeding for the Callaway plants, the Nuclear Regulatory Commission in accordance with NEPA and the Commission's own regulations implementing NEPA, 10 CFR Part 51, made a good faith assessment of the need for power from the Callaway Plants based on the information then available to it and authorized construction based on that assessment.²

The Public Service Commission has now submitted to the Commission a *Preliminary Peak Demand Projection* which reaches a different, *i.e.*, a lower demand forecast than that currently projected by Union Electric.³ The PSC's Report concludes, "While Unit 2 is planned for completion in 1987, the graph shows that it is not needed until after 1988. If Unit 2 were finished as UE plans, there will be approximately 1,350 megawatts of excess capacity in 1987 above that which is projected by the staff [PSC Staff] model." The PSC asserts that in light of these recently discovered facts, "the NRC would be derelict in its statutory obligation if it did not suspend this construction while the facts upon which the agenc[y] granted . . . the . . . [construction] permit four years ago are reassessed in light of this charge." PSC petition at p.5.

As was noted in an earlier decision on a request for action under 10 CFR 2.206,⁴ the Appeal Board for the Commission has dealt with efforts to reopen the record of proceedings in situations analogous to that presented by this 2.206 petition. The Appeal Board noted in *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-359, 4 NRC 619, 620-21 (1976):

After a decision has been rendered, a dissatisfied litigant who seeks to persuade us—or any tribunal for that matter—to reopen a record and reconsider 'because some new circumstance has arisen, some new trend has been observed or some new fact discovered,' has a difficult burden to bear. The reasons for this were cogently given by Mr. Justice Jackson more than 30 years ago in *ICC v. Jersey City*, 332 U.S. 503, 514 (1944):

One of the grounds of resistance to administrative process has been the claims of private litigants to be entitled to rehearings to bring the rec-

² *Union Electric Company* (Callaway Plant, Units 1 and 2), Partial Initial Decision, LBP-75-47, 2, NRC 319, 335-340 (1975); Initial Decision, LBP-76-15, 3 NRC 445 (1976), *affd.*, ALAB-347, 4 NRC 216 (1976); ALAB-426, 6 NRC 206 (1977).

³ By letter dated February 17, 1977, Union Electric Company informed the Commission that it was revising the scheduled operation date for Callaway, Unit 2, from April 1, 1983, to April 1, 1987.

⁴ *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582, 584-85 (1979).

ord up to date and meanwhile to stall the enforcement of the administrative order. Administrative consideration of evidence—particularly where the evidence is taken by an examiner, his report submitted to the parties, and a hearing held on their exceptions to it—always creates a gap between the time the record is closed and the time administrative decision is promulgated. This is especially true if the issues are difficult, the evidence intricate, and the consideration of the case deliberate and careful. If upon the coming down of the order; litigants might demand rehearings as a matter of law because some new circumstance has arisen, some new trend has been observed, or some new fact discovered, there would be little hope that the administrative process could ever be consummated in an order that would not be subject to reopening.

There is, however, another factor to be considered in this case. The Commission has, in the past, placed heavy reliance on information developed by local regulatory bodies which are charged with the duty of insuring that utilities within their jurisdiction fulfill the legal obligation to meet customer demands. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), ALAB-490, 8 NRC 234, 241 (1978), *aff'd*, CLI-79-5, 9 NRC 607, 608 (1979). The Missouri Public Service Commission has scheduled a hearing to begin in April 1980 on the generation expansion program of Union Electric Company. This proceeding will consider the revised peak forecast for the utility and will determine whether or not to proceed to reconsider the matter of the certificate of public convenience and necessity for Callaway, Unit 2.

As described in the petition, the PSC retains jurisdiction over the construction of a generation facility by virtue of its statutory authority to grant a certificate of public convenience and necessity and its authority to set rates. Under this jurisdictional authority and based on the information to be developed in its upcoming hearings, the PSC could conceivably withdraw the certificate issued to Union Electric Company for Callaway Unit 2 upon a finding that Unit 2 is not needed to maintain the Company's electric plant for safe and adequate service at reasonable rates. The PSC's final determination on this matter is expected in the fall of 1980. *See* PSC petition at pp. 2-3.

No construction is currently taking place on the Callaway Unit 2 facility. Callaway is a two-unit facility in which construction of Unit 1 is far advanced. The principal environmental impacts associated with construction of both units which were identified in the FES, *i.e.*, site clearing and excavation, have already occurred. Furthermore, the Permittee has indicated by letter dated January 4, 1980, that, apart from work on certain facilities which are closely associated with Unit 1, no major construction of plant structures for the Callaway Unit 2 plant will be resumed until sometime in

early 1981.⁵ Thus, the remaining environmental impacts resulting solely from the construction of Unit 2, principally socioeconomic impacts of construction and those associated with the building of the Unit 2 cooling tower, will be delayed until sometime in 1981.

In light of the Commission's practice of placing great weight on the decision of local regulatory bodies in the area of need-for-power and the current hiatus in Unit 2 construction, I have determined that no action need be taken on PSC's request for a hearing to consider the effect of changes in the peak load forecast for Union Electric Company until after the completion of its hearings concerning the utility. The PSC's decision is expected in the fall of 1980. No construction of Callaway Unit 2 is scheduled to begin until 1981. Consequently, no prejudicial delay to either the petitioner or to the utility will result from deferring a decision on this petition pending the outcome of PSC's proceeding, nor will any premature environmental impacts from construction take place.⁶

III

Based on the foregoing discussion, I find that consideration of PSC's petition for a show cause order to suspend the construction permit for Callaway Unit 2 should be *deferred* pending submission by PSC of its final decision in its proceeding on the generation expansion program of Union Electric Company.

A copy of this interim 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 rooms for the Callaway Nuclear Plant, Unit 2, located at Fulton City Library, 709 Market Street, Fulton, Missouri 65251 and Olin Library of Washington University, Skinker & Lindell Boulevard, St. Louis, Missouri 63130.

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland,
this 10th day of March, 1980.

⁵ Letter from John K. Bryan, Vice President, Union Electric Company to Harold R. Denton, dated January 4, 1980. See Attachment 1.

⁶ Deferral here of final action pending completion of a state proceeding is consistent with the action of the Appeal Board in a similar situation. See *Rochester Gas and Electric Corporation, et al.* (Sterling Power Project, Nuclear Unit No. 1), ALAB-502, 8 NRC 383 (1978).

[Attachment has been omitted from this publication, but is available in the Public Document Room, 1717 H Street. N.W., Washington, D.C.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**COMMONWEALTH EDISON
COMPANY**

**10 CFR 2.206
Docket Nos. 50-295
and 50-304**

**(Zion Station, Units 1
and 2)**

March 13, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations which requested the preparation of a full environmental impact statement for amendments to the operating licenses of Zion Station.

NEPA: NEGATIVE DECLARATIONS

An environmental impact appraisal and a negative declaration are prepared, and an environmental impact statement is not warranted, if the action will not significantly affect the quality of human environment.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letter dated April 27, 1979, Ms. Catherine Quigg, on behalf of Pollution and Environmental Problems, Inc. (PEPI), transmitted a request pursuant to 10 CFR 2.206 for the preparation of an environmental impact statement on high burnup fuel at Zion Station, Units 1 and 2. This request was predicated on the fact that on March 7, 1979, the Nuclear Regulatory Commission issued Amendments Nos. 44 and 41, respectively, to Facility Operating License Nos. DPR-39 and DPR-48. The amendments revise Technical Specifications for Zion Station, Units 1 and 2.¹ These amendments would allow the reinsertion of a maximum of four fuel assemblies previously irradiated in Unit 1 for a maximum of two additional fuel cycles (beyond the normal three fuel cycles) in Unit 2 to gain operating experience for an anticipated future extended burnup program.

¹ Amendments 44 and 41 are attached as Appendix A.

PEPI requested the preparation of an environmental impact statement to provide information which it thought the public needed because of the following factors associated with high burnup fuel:

1. greater fission gas releases from nuclear reactors;
2. increased fission gas releases from spent fuel pools due to increased corrosion;
3. previous government research, based on "low burnup fuel" is useless in predicting the behavior of "high burnup fuel," and
4. potential for greater radiological impact in reactor and spent fuel pool accidents.

Consistent with the National Environmental Policy Act of 1969 (Public Law 91-190, 83 Stat. 852) and the Commission's regulations (10 CFR Part 51), an environmental impact statement² was prepared at the operating license stage of Units 1 and 2. This statement addressed the range of environmental impacts associated with the operation of the Zion Station. However, an environmental impact statement is not required to be prepared for every license amendment. In this case, the Staff had prepared an environmental impact appraisal³ and negative declaration⁴ pursuant to 10 CFR 51.5 for the amendments, and had concluded that an EIS was not warranted because the action will not significantly affect the quality of the human environment. The negative declaration was published in the *Federal Register* on March 19, 1979, (44 FR 16504).

In the environmental impact appraisal, the Staff compared the fission gas release from the extended burnup fuel assemblies in the Unit 2 core to the releases from the other fuel assemblies in the core. It was noted that operating Unit 2 with four spent fuel assemblies from Unit 1 could have greater fission gas releases due to an increase in the fraction of failed fuel in the core over that previously experienced. However, it was also noted, these increases are not expected to be significant because (1) only four assemblies in the core (2.1%) will be irradiated to the extended burnups; (2) the restrictions in the plant Technical Specifications require the four assemblies to be located in the core where the operating thermal stresses in the cladding are relatively low and where the thermal limits for cladding should not be ap-

² *Final Environmental Statement Related to Operation of Zion Nuclear Power Station Units 1 and 2*, December 1972.

³ *Environmental Impact Appraisal by the Office of Nuclear Reactor Regulation Supporting Amendment No. 44 to Facility Operating License No. DPR-39 and Amendment No. 41 to Facility Operating License No. DPR-48* dated March 7, 1979. The Appraisal is attached as Appendix B.

⁴ *Notice of Issuance of Amendments to Facility Operating Licenses and Negative Declaration* dated March 7, 1979. The Notice is attached as Appendix C.

proached; (3) there are no design changes in these four assemblies from ones previously irradiated at Unit 2; (4) the licensee will examine the four spent fuel assemblies before their insertion in the Unit 2 core for their fourth cycle and will only irradiate them in a fifth cycle after these assemblies have demonstrated satisfactory fuel performance in the fourth cycle.

There is a possibility that increased corrosion (or "crud") of the spent fuel due to extended burnup could lead to higher radioactive emissions in the spent fuel pool. However, the facility's Technical Specifications carefully control coolant chemistry to control corrosion of the Zircaloy Cladding of the fuel rods. Buildup of "crud" should be negligible as long as coolant chemistry is controlled. Extended burnup under such controls would add perhaps several thousandths of an inch of oxide to the existing oxide thickness due to corrosion. For example, the fuel bundles which were irradiated in the Shippingport nuclear reactor at pressurized water reactor conditions for 12 years (approximately 4100 calendar days of operation) had a maximum corrosion thickness of 0.5 mil (5×10^{-4} inches). Corrosion thicknesses even 10 times this value would not affect the integrity of the cladding as a fission-gas barrier or interfere in any way with safe handling of the fuel in the spent fuel pool.

PEPI has stated that previous government research based on "low burnup fuel" is "useless" in predicting pool storage behavior of extended burnup fuel. That statement is incorrect. First of all, the term "low burnup fuel" is misleading, as the normal burnup rate is not a low burnup. Fuel with this burnup (33,000 MWD/MTU)¹ has been in the reactor for at least three cycles of operation, which is approximately three years. The fuel pellet has swelled, it has released a significant amount of fission-gas, and the cladding mechanical properties have reached asymptotic values due to irradiation. Data is available on the behavior of higher burnup fuel. Although this data base is not large, it shows no significant problems in reaching higher burnups than the present limits. While this data base would not support a complete fuel reload of extended burnup fuel, it does provide sufficient confidence to allow lead test assemblies to operate for two cycles in nonlimiting core positions.

However, before a full reload of assemblies of a new design is approved by the Commission a detailed safety review will be required. Part of this review will include the presentation of data to show that the fuel assemblies will meet all the requirements for safe operation of fuel in a licensed reactor. Test assemblies, such as the assemblies authorized at the Zion Station, often provide a significant amount of these data.

PEPI was also concerned with the radiological impact of high burnup fuel in the event of loss of coolant accidents. The potential impact on safety

¹ Megawatt days/Metric ton uranium.

for four extended burnup fuel assemblies is not greater than that of the other fuel bundles in the Unit 2 core since all fuel bundles are governed by the same safety criteria. In the environmental impact appraisal, the Staff addressed the effect of the four higher burnup fuel assemblies on the potential consequences and the environmental impacts of postulated accidents.

Increasing the burnup of fuel assemblies increases the radioactivity within the fuel assemblies. The amount of radioactivity of a specific radionuclide in the fuel increases with fuel burnup until it reaches an asymptotic value. The magnitude of fuel burnup where the radioactivity of a specific radionuclide reaches its asymptotic value depends on the halflife of the radionuclide. The short-lived fission products will have reached equilibrium levels at lower burnups and will not be affected. Irradiating fuel to extended burnups will increase the amount of long-lived fission products in the core. The only significant long-lived radionuclide with respect to potential consequences of the design basis accidents is the noble gas Krypton 85. Extending burnups of the four assemblies up to about 44,000 MWD/MTU (one added cycle) will not increase the amount of Krypton 85 which was assumed in the fuel at Zion 2 for the postulated design basis accidents. The increase in the amount of Krypton 85 in the four fuel assemblies from 44,000 MWD/MTU to 55,000 MWD/MTU (the second added cycle) is not significant compared to the total amount of fission noble gases in the fuel. These conclusions are based on the Staff's independent calculations of the fission gas release from damaged spent fuel and the radiological impacts of the postulated accidents.

Therefore, the potential consequences of the accidents given in the Safety Evaluation Reports dated October 1972,⁶ and March 29, 1979,⁷ for Units 1 and 2 will not change due to four fuel assemblies in the core being irradiated to burnups up to 55,000 MWD/MTU.

Based on the environmental impact appraisal dated March 7, 1979, and the reasons set forth above, I have determined that Amendments 44 and 41 will not significantly affect the quality of the human environment and that a full environmental impact statement is not warranted. Therefore, the request of PEPI is denied.⁸

⁶ *Safety Evaluation of the Zion Nuclear Power Station Units 1 & 2*, attached as Appendix D.

⁷ *Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to the Modification of the Spent Fuel Storage Pool*, attached as Appendix E.

⁸ PEPI also questioned why prior notice was not given before issuing the amendments. The amendments did not involve a significant hazard consideration and, therefore, the amendments were post-noticed. *See also*, Appendix D.

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 Zion Station located at Zion-Benton Public Library, 2600 Emmaus Avenue, Zion, Illinois 60099. A copy of this document will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

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

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland,
this 13th day of March, 1980.

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

METROPOLITAN EDISON
COMPANYDocket No. 50-320
(10 CFR 2.206)(Three Mile Island Nuclear
Station, Unit 2)

March 18, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 that requested installation of "cryogenic traps" prior to planned venting of radioactive gas from Three Mile Island Unit's 2 containment.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

A petition under 10 CFR 2.206 must set forth facts or supporting reasons that establish a basis for taking the action proposed in the petition.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a telegram dated February 27, 1980, Robert Gary of Philadelphia, Pennsylvania, requested under 10 CFR 2.206 that the Commission require installation of "cryogenic traps" before "any planned venting of radioactive gas" from the Three Mile Island Unit 2's containment. Mr. Gary claims that "[t]he reason for this is too obvious to specify in detail. . . ."

On its face, Mr. Gary's request is insufficient, because it does not state the facts, as required under 10 CFR 2.206(a), which form the basis of his request. Facts or other substantiating reasons for taking certain action are necessary to establish a basis for such action, not only in a petition under 10 CFR 2.206, but also to justify proposed action by the Director of Nuclear Reactor Regulation at his own discretion. *See* 10 CFR 2.202(a)(1). In the absence of the petitioner's specification of the bases for proposed action, the Director will not entertain such requests under 10 CFR 2.206. *See Duke Power Company* (Oconee Nuclear Station, Units 1, 2 and 3), DD-79-6, 9 NRC 661 (1979). A statement that the reasons for taking certain action are "obvious" is clearly insufficient.

In all events, the staff has considered the use of a cryogenic processing

system in its draft report for public comment, "Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere" (NUREG-0662, March 1980). For the reasons stated in that report (a copy of which is attached), the staff has recommended to the Commission that it approve purging of the reactor building atmosphere as the decontamination option for disposal of Krypton-85 released in the reactor building during the accident at Three Mile Island Unit 2. Accordingly, Mr. Gary's petition is denied.

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 (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 18th day of March, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**GEORGIA POWER
COMPANY, et al.**

**Docket Nos. 50-424
50-425
(10 CFR 2.206)**

**(Alvin W. Vogtle Nuclear Plant,
Units 1 and 2)**

March 26, 1980

In a supplemental decision under 10 CFR 2.206, the Director of Nuclear Reactor Regulation considers new information submitted by Georgia Power Company to determine whether such information would alter the conclusions reached in two earlier denials of petitions filed by Georgians Against Nuclear Energy. The Director finds that the new information does not alter the conclusions in the earlier denials and, accordingly, does not find as basis for suspending construction of the Vogtle units and reopening the "need for power" issue.

NRC—RESPONSIBILITIES UNDER NEPA

Every forecast of need or demand for electricity carries an associated uncertainty and, thus, the most that can be required is that the forecast be a reasonable one in light of what is ascertainable at the time it is made.

NRC—RESPONSIBILITIES UNDER NEPA

As a basis for reopening the "need for power" determination on the basis of new information, the staff will generally assess whether the new information reveals a significant new environmental impact or would clearly mandate a change in the result obtained in the original determination.

NEPA—NEED FOR POWER

Under NEPA the NRC must determine that the need for the power to be generated by a plant coincides reasonably with the operational date of the plant.

SUPPLEMENTAL DIRECTOR'S DECISION UNDER 10 CFR 2.206

On October 12, 1979, the Acting Director of Nuclear Reactor Regulation issued a decision under 10 CFR 2.206 which denied a petition of the Georgians Against Nuclear Energy (GANE). Georgia Power Company (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-18, 10 NRC 617 (1979). This decision denied GANE's request that an earlier denial under 10 CFR 2.206 regarding the Vogtle units, DD-79-4, 9 NRC 582 (1979), be reconsidered and that construction of the facility be suspended and the need for power from the facility be re-examined.

While the October 12th decision was pending before the Commission for its discretionary review under 10 CFR 2.206(c), counsel for the licensee informed the staff that new information had become available which might bear on the staff's consideration of GANE's petition. The staff then asked the Commission to postpone its decision whether to review the Director's denials until the staff had received the information from the licensee and had evaluated it in a supplemental decision. Accordingly, the Commission extended in an Order of October 31, 1979, the time within which it may act to review the April 13th and October 12th denials until twenty (20) days after issuance of a supplemental decision discussing the licensee's new information.

By letter of November 27, 1979, the licensee provided the new information, which advised the staff (1) of a revised peak demand load forecast and generation expansion plan, and (2) that Georgia Power Company (GPC) and Florida Power and Light Company (FP&L) have begun discussions which could lead to a proposal that FP&L become a co-owner of the Vogtle plants. The petitioner commented on GPC's submission in letters dated January 30 and February 14, 1980. This supplemental decision provides the staff's analysis of GPC's letter of November 27, 1979, and of the petitioner's comments.

Upon review of the information submitted by the licensee and the petitioner, the staff has concluded (1) that the latest revisions in demand and capacity forecasts do not represent a major change in facts which would alter the need for power determinations, and (2) that any evaluation of a proposed change in ownership of the facility should be made in the context of an actual proposal for amendment of the Vogtle construction permits. The staff does not find a basis, therefore, for suspending construction and reopening the "need for power" issue.

I. GPC'S REVISED LOAD FORECAST

The first aspect of GPC's November 27th letter concerns the revised (October 30, 1979) Georgia territorial load forecast of peak electricity de-

mand for the period 1979-1990.¹ The October 1979 forecast indicates an average growth rate of 4.03 percent between 1979 and 1990,² as compared to a 4.6 percent growth rate predicted in 1978.

The staff has been concerned with the GPC's predictions of growth in demand for electricity insofar as these predictions bear on the need for power from the Vogtle units. Whether a need exists for the generating capacity of a nuclear facility is relevant to fulfillment of the Commission's responsibilities under the National Environmental Policy Act of 1969 (NEPA). NEPA requires balancing of environmental costs against the expected benefits of major federal actions which significantly affect the environment before the action is taken. "Need for power" is a shorthand expression for the "benefit" side of the cost-benefit balance which NEPA mandates in considering the licensing of a nuclear power plant.³ "A nuclear plant's principal 'benefit' is of course the electric power it generates. Hence, absent some 'need for power', justification for building a facility is problematical." *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 405 (1976).

The Commission must also determine that a need for the plant coincides reasonably with the operational date of the plant. This determination is relevant to the Commission's NEPA responsibilities, because (1) extremely long-range predictions of need for power are so uncertain as to be essentially meaningless, and (2) a federal agency should not permit the environmental costs of a proposed action to be incurred far in advance of the time when they may be necessary.

The Commission has recognized, however, that uncertainty is inherent in any prediction of the need for or demand for the electricity to be generated by a nuclear plant.

[E]very prediction has an associated uncertainty and . . . long range forecasts of this type are especially uncertain in that they are affected by

¹ As a point of clarification, GPC correctly observed in the November 27th letter that the forecasts and power needs addressed in the prior Director's denials reflected the combined systems of the Vogtle owners, i.e., of GPC, Oglethorpe Power Corporation, the Municipal Electric Authority of Georgia, and the City of Dalton. The staff's analyses were made on that basis.

² GPC's November 27th letter contains a typographical error in item (1) on the first page. In describing predictions of annual growth rates, GPC erroneously referred to the period for which predictions had been made as 1979-1980, rather than 1979-1990. Attachment 1 to the letter clearly shows that these predictions are for the 1979-1990 period, and counsel to GPC informed the staff of the error by telephone. GANE's January 30th comment regarding the need for a load growth of 7 percent in 1980 to meet the 4.03 percent projection is therefore in error.

³ *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 90 (1977).

trends in usage, increasing rates, demographic changes, industrial growth or decline, the general state of the economy, etc. These factors exist even beyond the uncertainty that inheres in demand forecasts: assumptions on continued use from historical data, range of years considered, the area considered, extrapolations from usage in residential, commercial, and industrial sectors, etc." *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), CLI-79-5, 9 NRC 609, 610 (1979).

As the Atomic Safety and Licensing Appeal Board has stated, "[g]iven the legal responsibility imposed upon a public utility to provide at all times adequate, reliable service—and the severe consequences which may attend upon a failure to discharge that responsibility—the most that can be required is that the forecast be a reasonable one in the light of what is ascertainable at the time made." *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 328 (1978) (citation omitted).

The Atomic Safety and Licensing Board found in its Initial Decision that there was a need for the Vogtle units. *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1-4), LBP-74-39, 7 AEC 895 (1974). In its Supplemental Initial Decision, the Board found that the environmental determinations made in its 1974 decision were still valid. LBP-77-2, 5 NRC 261 (1977). The Atomic Safety and Licensing Appeal Board affirmed the Licensing Board's decisions in these matters. ALAB-375, 5 NRC 423 (1977). The Commission made, therefore, a good faith assessment of the need for the Vogtle units based on the information available to it at the time. Licensing of the Vogtle units' construction was based on that assessment.

In the staff's consideration of GANE's petition, the reasonableness of the original forecast of the need for the Vogtle units has not been the critical concern.⁴ Rather, the focus of the staff's inquiry has been the need to reopen the original proceedings to reassess need for power in light of the information submitted by GANE and GPC. GANE's original petition alleged that GPC's proposed sale of portions of its Scherer plant, a coal-fired facility, and the cost of solar photovoltaic systems raised sufficient questions concerning the need for the Vogtle units such that the hearings on the need-for-power should be instituted. GANE's petition was denied in the decision

⁴ GANE alleged in its May 1, 1979, petition that the earlier determinations of need for the Vogtle units were defective in that (1) the consideration of conservation as an alternative was procedurally defective, and (2) GPC made "material false statements" to the NRC regarding the need for power. As discussed in the October 12, 1979, Director's denial (DD-79-18), these allegations are without merit.

of April 13, 1979 (DD-79-4, 9 NRC 582). GANE then sought reconsideration of this denial in its petition of May 1, 1979, (including supplemental filings of July 17 and August 2, 1979) on the basis of other matters which GANE averred mandated revocation of the Vogtle construction permits. This petition was denied on October 12, 1979 (DD-79-18).

In this supplemental decision, the critical inquiry is not so much the impact of GPC's revised forecast on the prior Director's denials as it is the need to reopen the "need-for-power" determination on the basis of this information itself. In the staff's view, the April and October Director's denials were reasonable in light of the circumstances known or predicted at that time. The issue for resolution at this juncture is whether the new forecast represents a significant new environmental impact or information which would clearly mandate a change in the result obtained in the Commission's original determination of the need for the Vogtle units.⁵

The Georgia Territorial Generation Expansion Plan of August, 1978, projected an average annual growth rate of 4.65 percent, based on predicted loads of 10,213 MW in 1978 and 17,614 MW in 1990. (The 1978 actual load was 10,113 MW.) In the most recent GPC system expansion plan, (October 30, 1979, Attachment 1 to the licensee's November 27th letter), the load forecasts for 1980-1990 have been revised downward, and now reflect a 4.00 percent annual average growth rate from the 1978 'actual' of 10,113 MW to the projected 1990 load of 16,183 MW. GPC projected a 4.03 percent annual average growth rate from 1979 to 1990. Net system capacity forecasts have been revised, so that forecasted system capacity in 1990 has been reduced from 20,369 MW (the August 1978 forecast) to 19,719 MW. GPC has also revised the ratings of some of the scheduled additions and their inservice dates. The following table compares the 1978 and 1979 forecasts for the years 1985-1990. This is the time period that includes startup of the Vogtle plants and the sale of Scherer capacity.⁶

⁵ The staff has applied this standard in the prior denials of GANE'S petitions as well as in other Director's denials under 10 CFR 2.206. See, e.g., *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-10, 10 NRC 129 (1979). The staff believes that this standard is consistent with NEPA and is appropriate in considering under 10 CFR 2.206 petitions to reopen the record in a proceeding in light of the well-recognized need for finality in the administrative process. See *Greene County Planning Board v. FPC*, 559 F.2d 1227, 1233 (2d Cir. 1976), cert. denied, 434 U.S. 1086 (1978); *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 750-51 (1977).

⁶ Sale of the coal-fired Scherer plants was discussed in greater detail in Appendix A to the April 13th Director's Denial. In its January 30, 1980, comments, GANE alleged that GPC intended to sell 1200 MW capacity of the Scherer plants, rather than the approximately 800 MW capacity earlier estimated. Based on a discussion with GPC, GANE retracted the allegation in

(Footnote continued on next page)

YEAR	AUGUST 1978 FORECAST			OCTOBER 1979 FORECAST		
	Load	Capacity	Percent Reserve	Load	Capacity	Percent Reserve
1985	14432	18527	28.37	13408	17074	27.34
1986	15045	18627	23.81	13950	17166	23.05
1987	15689	18902	20.48	14649	18295	24.89
1988	16238	20017	23.27	15215	19402	27.52
1989	16902	19949	18.03	15616	19745	26.44
1990	17614	20369	15.64	16183	19719	21.85

The reserve margins are comparable for 1985 and 1986, but are higher in 1988 through 1990 for the 1979 forecast. The staff has analyzed these reserves in the same manner as was done for the 1978 forecast (Appendix A, p. 3, of the Director's Denial of April 13, 1979), using the following assumptions:

- 1985: Decrease capacity by 1150 MW (Vogtle Unit 1 capacity)
- 1986: Same as 1985
- 1987: Increase capacity by 404 MW (50 percent of Scherer Unit No. 3) and decrease capacity by 1150 MW (Vogtle Unit 1 capacity)
- 1988: Increase capacity by 404 MW (50 percent of Scherer Unit No. 3) and decrease capacity by 2300 MW (Vogtle Units 1 and 2 capacity)
- 1989: Increase capacity by 808 MW (50 percent of Scherer Units 3 and 4) and decrease capacity by 2300 MW (Vogtle Units 1 and 2 capacity)
- 1990: Same as 1989.

Under these revised conditions, the percent reserves for the Georgia Territorial System (GPC, OPC, MEAG, and Dalton) would be as follows:

BASED ON AUGUST 1978 FORECAST		BASED ON OCTOBER 1979 FORECAST	
1985	23.75%	1985	18.77%
1986	19.36%	1986	14.81%
1987	18.98%	1987	19.80%
1988	14.85%	1988	15.06%
1989	9.93%	1989	16.89%
1990	8.06%	1990	12.63%

(Footnote continued from previous page)

its February 14, 1980, letter. GANE believes, however, that "this incident illustrates the need for a hearing" to consider the need for the Vogtle units. A hearing on GANE's petition is not required, of course, by law. *Illinois v. NRC*, 591 F.2d 12, 14 (7th Cir. 1979). The Commission is not required to institute full-blown proceedings because there may be some confusion as to the facts underlying the petitioner's claim. The Commission may "properly undertake preliminary inquiries in order to determine whether the claim is substantial enough . . . to warrant full proceedings," and, on that basis "has substantial discretion to decline to initiate proceedings based on this review" *Porter County Chapter of the Izaak Walton League v. NRC*, No. 78-1556, Slip Op. at 11 (D.C. Cir., Sept. 6, 1979). As discussed in this decision, the staff does not believe that institution of proceedings is appropriate in this instance.

The 1979 data are not dissimilar to those based on the 1978 forecast. What is suggested by the data, particularly if future forecasts predicted even slower growth in the Georgia territorial system, is that, though the generating capacity of the Vogtle units would eventually be needed in this system, the dates when initial operation of the units is actually needed may shift to the future if future demand for electricity decreases. Although there may be some slippage in the dates at which the units are "firmly" needed, this slippage does not represent itself a major change in facts which would alter the staff's "need-for-power" determinations to date.⁷ As discussed previously in this decision, every demand forecast has inherently uncertain aspects. The timing of need for a plant need only to reasonably coincide with commencement of operation of the facility. The staff cannot say at this time that the timing of need for the Vogtle units does not reasonably coincide with the projected 1985 and 1988 operation dates for the respective units. Therefore, GPC's revised October 1979 forecast does not warrant suspension of further construction pending redetermination of the need-for-power issue.

II. NEGOTIATIONS REGARDING SALE TO FLORIDA POWER AND LIGHT COMPANY

GPC's November 27th letter also refers to its preliminary negotiations to sell a portion of the Vogtle units to Florida Power and Light Company. As noted in the October 12, 1979, Director's denial, a change in ownership of the Vogtle units would require amendment of the construction permits. GPC (representing the current owners of the Vogtle units) has not applied for such an amendment, and, absent any formal request for further changes in ownership arrangements, the staff is not in a position to evaluate any such proposed change in ownership. At such time as the Vogtle owners might apply for an amendment to the construction permits, the staff would prepare an environmental impact appraisal (EIA) as provided in 10 CFR Part 51 for the purpose of determining whether preparation of an environmental impact statement (EIS) is required by the proposed action. The staff's decision, based on this EIA, would result either in a notice of intent to prepare an EIS or a negative declaration to the effect that an EIS is not required for the proposed action. The staff's determination would be published in the *Federal Register* as required under 10 CFR Part 51. Issuance of any amendment would conform to section 189 a. of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Part 2.

⁷ Cf. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1-4), CLI-79-5, 9 NRC 607 (1979); *Niagara Mohawk Power Corporation* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347 (1975).

III. CONCLUSION

The staff does not believe that the information provided by GPC in its November 27th letter represents a major new environmental impact or change in facts which would significantly alter the determination of the need-for-power from the Vogtle units. Accordingly, I do not intend to order suspension of the Vogtle construction permits pending reexamination of the need-for-power from the Vogtle units.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D. C. 20555, and the local public document room for the Alvin W. Vogtle Nuclear Plant, Unit Nos. 1 and 2, at the Burke County Library, 4th Street, Waynesboro, Georgia. A copy of this decision will also be filed with the Secretary for the Commission's 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 26th day of March, 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

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)**

April 2, 1980

The Commission denies a petition requesting Commission review of an Appeal Board member's decision not to disqualify himself from this proceeding.

APPEAL BOARD: DISQUALIFICATION OF MEMBER

An Appeal Board member who participated as an adjudicator in a construction permit proceeding for a facility is not required to disqualify himself from participating as an adjudicator in the operating license proceeding for the same facility.

ORDER

On March 13, 1980, Joint Intervenors filed a motion requesting the Commission to disqualify Dr. John H. Buck from sitting on the Atomic Safety and Licensing Appeal Board assigned to hear the appeal on the seismic issues in the Diablo Canyon proceeding. In the alternative, Joint Intervenors requested that the Commission refer the matter to Dr. Buck for an initial ruling. On March 21, 1980, the Commission issued an order directing Dr. Buck to rule on the motion. The order stated that should Dr.

Buck decide to remain in the proceeding, his decision will be subject to Commission review pursuant to 10 CFR 2.786. CLI-80-8, 11 NRC 433.

On March 24, 1980, Dr. Buck issued a memorandum in which he concluded that there was no legal requirement that he disqualify himself, and that he did not intend to do so. On March 28, 1980, Joint Intervenors filed a petition requesting the Commission to review that decision. The Commission has decided to deny the petition.

Joint Intervenors have suggested two grounds for disqualification: (1) Dr. Buck's participation would create an appearance of bias because in two previous licensing proceedings he did not accept the views of one of the Joint Intervenors' expert witnesses, Dr. Mihailo Trifunac; and (2) that an appearance of bias is created by his participation in a 1971 Appeal Board decision which Joint Intervenors assert erroneously affirmed an Atomic Safety and Licensing Board decision granting a construction permit for Diablo Canyon Unit 2. Joint Intervenors assert that Dr. Buck at that time failed to adequately consider their seismic concerns.

In response, Dr. Buck, stated that a judge is not required to disqualify himself from a proceeding just because he has had prior involvement with similar issues or parties, citing *FTC v. Cement Institute*, 333 U.S. 683, 703 (1947). He further noted that in each of two earlier proceedings in which he did not accept Dr. Trifunac's judgment he was joined in his opinion by another Appeal Board member. He explained that he is not biased against Dr. Trifunac, but that "reasonable minds can and do differ on any given issue." With respect to Joint Intervenors' charges that he made erroneous rulings in the Diablo Canyon construction permit proceeding, Dr. Buck noted that those rulings are "ancient history" and that five other members of the Licensing Board and Appeal Board also decided to approve construction of the Diablo Canyon facility.

The Commission has reviewed the matter and determined that a case has not been established for disqualification. Dr. Buck has not previously ruled on the specific factual questions before the Appeal Board, and we have no evidence that he is partial or has a closed mind. The mere fact that he has not accepted Dr. Trifunac's views in the past does not force the Commission to conclude that Dr. Buck will be unable to objectively consider Dr. Trifunac's views in this proceeding.

The Commission has never taken the position that because a member of the Appeal Board participated as an adjudicator in a construction permit proceeding for a particular facility that the member is precluded from sitting on the Board that will review the operating license application for that same facility. We find no special circumstances here which would cause the Commission to change that policy.

We conclude that based on the information before us that Dr. Buck is not biased, his participation does not present an appearance of bias, and that his prior involvement with Diablo Canyon at the construction permit stage does not require disqualification. The petition for review is, therefore, denied.¹

Commissioner Bradford would have granted the petition for review.
It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 2nd day of April 1980.

¹Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Gilinsky was not present at the meeting at which this Order was approved. Had he been present he would have voted with the majority. Accordingly, the formal vote of the Commission is 3-1.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 50-400
50-401
50-402
50-403

**CAROLINA POWER AND
LIGHT COMPANY**

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

April 17, 1980

The Commission reverses and vacates as beyond the authority of the Appeal Board, those portions of ALAB-577 and ALAB-581 that direct the staff to take certain steps in connection with its assessment of the applicant's management capability to operate the Shearon Harris facility; and, pursuant to its supervisory authority over the staff, directs the staff to conduct its assessment of the applicant's capability to operate the facility and follow the other conditions set forth by the Appeal Board in ALAB-577 as part of the staff's operating license application acceptance review for the plant.

ADJUDICATORY BOARDS: DELEGATED AUTHORITY

Adjudicatory boards do not possess the authority to direct the holding of hearings following the issuance of a construction permit; nor have boards been delegated the authority to direct the staff in the performance of its administrative functions.

NRC: SUPERVISORY AUTHORITY

As part of its inherent supervisory authority, the Commission has the authority to direct the staff's performance of administrative functions, even over matters in adjudication.

ADJUDICATORY BOARDS: DELEGATED AUTHORITY

Adjudicatory boards concerned about the conduct of the staff's administrative functions should bring the matter to the Commission's attention or certify a question to the Commission.

RULES OF PRACTICE: OPERATING LICENSE HEARING

Operating license proceedings start with the notice of proposed action (10 CFR 2.105) and are separate from prior proceedings.

MEMORANDUM AND ORDER

In September 1978, the Commission's attention was drawn by the Atomic Safety and Licensing Board in this proceeding to serious concerns about the completeness of the administrative record on the issue of Carolina Power and Light Company's management qualifications with respect to the Shearon Harris facility. The Commission found that the Licensing Board raised a serious question regarding the integrity of the administrative process and remanded that issue "for a further hearing on the management capability of [the applicant] to construct and operate the proposed Shearon Harris facility without undue risk to the health and safety of the public." CLI-78-18, 8 NRC 293, 294 (1978). The Licensing Board has concluded hearings on the issue and approved the applicant's management capability to construct the facility properly. LBP-79-19, 10 NRC 37 (1979). The Atomic Safety and Licensing Appeal Board has affirmed the Licensing Board's determinations on the merits. ALAB-577, 11 NRC 18 (January 29, 1980). No party to the proceeding has disputed the correctness of that determination. The Commission likewise has no reason to disturb that conclusion.

The current dispute involves the question of what steps the NRC staff ought to take with respect to the management qualifications issue at the time the Harris operating license application is filed. The Licensing Board had sufficient residual doubt concerning applicant's management capability to operate the Harris facility that it ordered a hearing held at the operating license stage on that issue. LBP-79-19, *supra*, 10 NRC at 43, 98-99. The staff

appealed, arguing that the Licensing Board lacked authority to order a hearing in the operating license proceeding.

The Appeal Board agreed with the staff, finding that the Licensing Board for that construction permit proceeding lacked the authority, in the regulations or in the Commission's delegation to it, to order a hearing at the operating license stage. Thus, the Appeal Board vacated the Licensing Board's condition on the construction permits which would have required an operating license hearing. However, the Appeal Board directed the staff to conduct a preliminary assessment on the management qualifications issue in the operating license application and provide the same to the Commission and include it in the *Federal Register* notice of opportunity for hearing. 10 CFR 2.105. ALAB-577, *supra*, at 36. The NRC staff petitioned for review, urging that the Commission upset the Appeal Board-imposed requirement because it has "manifestly unacceptable precedential implications...in a *procedural* and *jurisdictional* sense." Staff Petition at 2 [emphasis in original]. The staff did not object to the substance of what the Appeal Board had ordered and suggested that the Commission itself provide similar directions to the staff.

For its part, the applicant moved the Appeal Board to reconsider its action, believing that it would delay processing of the operating license application. The Appeal Board disagreed and denied the motion. ALAB-581, 11 NRC 233 (February 20, 1980). The Commission consolidated its consideration of this decision with ALAB-577. Commission Order, extending time (February 21, 1980). The applicant petitioned for review of ALAB-581. In addition to advancing a position similar to staff's position in its petition on ALAB-577, the applicant argued that the Appeal Board's denial of its motion had a "dubious" basis.

The Commission appreciates the willingness of both adjudicatory boards which have considered this case to search for effective means to assure that the management capability issue receives appropriate scrutiny at the operating license stage. The Commission recognizes the importance of the substantive concerns as well as the serious attention given to designing a remedy to address them. Unfortunately, the Appeal Board's remedy, like the Licensing Board's solution, exceeds the authority the Commission has delegated to adjudicatory tribunals in this instance and must be vacated.

It is well-settled that Boards do not possess "the authority to direct the holding of hearings following the issuance of a construction permit." *Florida Power and Light Company* (Turkey Point Nuclear Generating Station, Units 3 and 4), 4 AEC 9, 15-16 (AEC 1967). It is also clear that the Boards do not direct the staff in performance of their administrative functions. The Commission does have authority to do so, however, as part of its inherent supervisory authority even over matters in adjudication.

Niagara Mohawk Power Corp. (Nine Mile Point, Unit 2), CLI-73-28, 6 AEC 995 (1973). This principle is clearly part of Appeal Board practice. *Florida Power and Light Company* (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-553, 10 NRC 12, 14 (1979). Accordingly, in these circumstances, Boards concerned about the conduct of the staff's administrative functions bring the matter to the Commission's attention as described in ALAB-553, *supra*, or certify a question to the Commission. See, e.g., 10 CFR 2.785(d). In this regard, the Commission expects that Boards will, when appropriate, suggest to it proposed guidance or instructions for the staff in the conduct of its administrative functions at the time Boards bring matters to the Commission's attention. The Commission here only concludes that Boards may not *act* beyond their delegated authority.

An important reason for this decision is that the Boards' jurisdiction over the management qualifications issue in the construction permit proceeding will end with this decision. 10 CFR 2.717(a). See *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-79-5, 9 NRC 607, 610 (1979). The operating license proceeding starts with the notice of proposed action (10 CFR 2.105) and is separate from the prior proceeding. Boards have jurisdiction only in proceedings and the Appeal Board will have lost jurisdiction over the instant issue by the time the operating license notice is published. The Commission is not inclined to overrule or limit its case law that has narrowly construed "proceeding"¹ in order to expand the Board's delegation of authority to apply to this case. 10 CFR 2.785(a).

For these reasons, the Commission reverses the portions of ALAB-577 and ALAB-581 to the extent they purport to direct the staff in the performance of administrative tasks in a separate "proceeding." The Commission declines to review the other issues raised by the applicant's petition for review of ALAB-581. 10 CFR 2.786(b). Finally, pursuant to its supervisory authority, the Commission directs the staff to conduct the preliminary assessment and follow the other conditions described by the Appeal Board in ALAB-577, as part of the staff's review of the Harris operating license application acceptance review (10 CFR 2.101(a)), a condition precedent to publication of notice under 10 CFR 2.105 and adopts the Appeal Board's rationale for these conditions as its own.

¹See, e.g., *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-513, 8 NRC 694 (1978); *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), ALAB-526, 9 NRC 122 (1979) *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-530, 9 NRC 261 (1979).

Chairman Ahearne concurs in the decision that the Appeal Board lacked authority to direct the staff in this case, but dissents from the decision not to grant the applicant's petition to review ALAB-581. Chairman Ahearne would have preferred the approach outlined by the applicant in its motion.²

It is so ORDERED.

For the Commission

SAMUEL J. CHILK

Secretary of the Commission

Dated at Washington, D.C.,
this 17th day of April 1980.

²Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Bradford were not present when this item was affirmed. Had Commissioners Gilinsky and Bradford been present at the meeting they would have voted with the majority. Accordingly, the formal vote of the Commission on this matter was 2-1, with Chairman Ahearne dissenting in part.

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

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

In the Matter of

Docket No. 50-320

**METROPOLITAN EDISON
COMPANY****(Three Mile Island, Unit 2)****April 16, 1980**

The Commission determines that the accident which occurred at Three Mile Island, Unit 2 on March 28, 1979 did not constitute an "extraordinary nuclear occurrence" within the meaning of the Price-Anderson Act, as defined by Section 11(j) of the Atomic Energy Act, 42 U.S.C. 2014(j), and 10 CFR Part 140 of Commission regulations. The Commission also expresses reservation about the criteria and statutory definitions in light of the Three Mile Island experience, and notes that a rulemaking proceeding is now underway to address those concerns.

**ATOMIC ENERGY ACT: "EXTRAORDINARY NUCLEAR
OCCURRENCE"**

When the Commission determines that an "extraordinary nuclear occurrence" (ENO) has occurred, persons with claims for injuries or damages need not prove that the licensee or other responsible parties were negligent, and defendants in legal proceedings cannot argue that the person making the claim somehow contributed to the injury. In addition, the time within which a legal action may be commenced is extended. Whether or not an ENO is declared, a claimant must still prove an injury or damage, the monetary amount of the loss, and how the loss was caused by the accident. When an incident is not found to be an ENO, all court proceedings are conducted under applicable state and federal law.

ATOMIC ENERGY ACT: "EXTRAORDINARY NUCLEAR OCCURRENCE"

As defined by Section 11(j) of the Atomic Energy Act, 42 U.S.C. 2014(j), an "extraordinary nuclear occurrence" is an event which causes both (1) substantial offsite release of nuclear material or substantial offsite radiation levels, and (2) actual or likely substantial damages to persons or property offsite. The application of those tests to specific events is governed by the Commission's criteria set forth in 10 CFR 140.84 and 140.85.

ATOMIC ENERGY ACT: "EXTRAORDINARY NUCLEAR OCCURRENCE" (STANDARD FOR REVIEW)

The ENO determination envisioned by Congress and the Commission's rules is an objective decision, depending upon the application of specific criteria to the facts of a particular accident. Criterion I requires consideration of whether measured releases or radiation levels (or the best estimates of releases or radiation levels for which direct measurements are not available) meet the levels specified in the criterion. Criterion II is somewhat more subjective in that it requires an assessment of dollar amounts of damages that "probably will result" from the accident prior to any court judgments reducing claims to exact figures.

ATOMIC ENERGY ACT: "EXTRAORDINARY NUCLEAR OCCURRENCE" (STANDARDS FOR REVIEW)

Before making its final ENO determination based on the staff's findings, the Commission will review whether (1) the staff has taken a sufficiently conservative approach to application of the criteria; (2) there are any major legal or policy questions presented which should receive close Commission scrutiny; (3) all available data have been assembled and considered; and (4) adequate opportunity for public input has been provided. If the staff's findings are acceptable in these respects, the remaining questions are quantitative, *i.e.*, whether, based on the record that has been compiled, radiological releases or radiation meet the levels specified in Criterion I and damages meet the levels specified in Criterion II.

ATOMIC ENERGY ACT: "EXTRAORDINARY NUCLEAR OCCURRENCE" (STANDARDS FOR REVIEW)

In determining whether the quantitative levels specified in the Criteria have been met, the Commission will not recalculate doses and radiation levels arrived at by the staff. Rather, the Commission's review will focus on whether there is anything apparent in the record as a whole to indicate that the staff made any significant errors requiring re-analysis.

ATOMIC ENERGY ACT: "EXTRAORDINARY NUCLEAR OCCURRENCE" (CRITERION I)

The values of Criterion I should be regarded as a guide for the meaning of "substantial" offsite releases rather than as rigid levels with no allowance for uncertainties. If it appears that calculations based on reasonable scenarios (or actual measurements, if available and sufficiently accurate) enter the basic range of specified values, the criterion will be considered met.

DETERMINATION

The Commission today determines that the accident at Three Mile Island did not constitute an "extraordinary nuclear occurrence" (ENO) as that term is defined by the Price-Anderson Act and the Commission's regulations. Specifically, we find that Criterion I for an ENO, contained in 10 CFR 140.85, has not been met. For reasons explained below, we make no explicit finding as to Criterion II.

In the event of a nuclear accident (or nuclear "incident" as the term is used in the Atomic Energy Act), claims for injuries or damages can be brought by any injured person against the plant licensee (in this case Metropolitan Edison Company) and any other party considered responsible for the accident. Congress has established a system of private insurance, funds from electric utilities and government indemnity totalling \$560 million to pay such claims. One of the principal obstacles to a claimant's recovery for injuries or damages could be the necessity of proving in a court proceeding that the defendants were negligent and that their negligence caused or contributed to the accident. However, when the Commission determines, that a nuclear incident was an "extraordinary nuclear occurrence," the Price-Anderson Act provides for a system which is similar in some respects to a "no-fault" recovery scheme.

When the Commission determines that an ENO has occurred, persons with claims for injuries or damages need not prove that the licensee or other responsible parties were negligent. Furthermore, the defendants in legal proceedings cannot argue that the person making the claim somehow contributed to the injury. In addition, an ENO determination would extend the time within which a legal action could be commenced. Whether or not an ENO is declared, a claimant must still prove an injury or damage, the monetary amount of the loss and how the loss was caused by the accident. When, as here, an incident is not found to be an ENO, all court proceedings are conducted under applicable state and federal law.

We note at the outset that, in ordinary parlance, the accident at Three Mile Island was "extraordinary." It resulted in heavy damage to the reactor itself, caused evacuation of some persons from the surrounding area, and generated concern and anxiety throughout the country. In our decision today we do not in any respect intend to downplay the seriousness of this accident or its consequences.

However, the Price-Anderson Act sets down clear statutory responsibilities for the Commission to perform when such an event has occurred. The term "extraordinary nuclear occurrence" has a specific legal meaning which is quantified by Commission regulations that have been in effect since 1968. Our decision today is limited to the application of those regulations to the accident at Three Mile Island. It is only in that sense that we find this accident not to be an "extraordinary nuclear occurrence."

We believe that the accident at Three Mile Island demonstrates that these regulations should be re-examined. Indeed, we have some reservations about the criteria and the statutory definition of an ENO in light of the Three Mile Island experience.¹ As we note below, a rulemaking is now under way which will examine the need to modify the current criteria and, if necessary, the statute itself.

I. Background

The events which transpired at the Three Mile Island Nuclear Station (TMI) on March 28, 1979, and the days to follow are by now well known to the public. It will not be our purpose here to review the accident itself, which has been described in detail in recent reports by the President's Commission on the Accident at Three Mile Island and by the NRC Special Inquiry Group. For present purposes it is sufficient to note that during the course of the accident, radioactive material was released into the environ-

¹Commissioner Gilinsky believes that the criteria presently used to determine the occurrence of an ENO reflect, an outdated and overly relaxed view of the level of acceptable radiation dosages.

ment at detectable levels offsite and some persons were advised by the Governor of Pennsylvania to evacuate a five-mile zone near the plant. These facts alone were sufficient to suggest an "extraordinary nuclear occurrence." On July 2, 1979, the Commission received a paper from its staff which set out in detail the operation of the ENO provisions in the Price-Anderson Act and NRC regulations, and recommended that the Commission proceed to determine whether the accident at TMI constituted an ENO. The Commission accepted this recommendation, and announced on July 20, 1979, that it was initiating procedures to make the determination. Public comment on this announcement was officially requested in the Federal Register notice published July 23, 1979, 44 FR 43128. Two days later, on July 28, a petition requesting an ENO determination was received from persons residing in the vicinity of TMI.

Pursuant to its regulations, the Commission ordered on August 17, 1979, that a staff panel be formed to review available data and to present findings to the Commission on whether the accident at TMI met the criteria for an ENO contained in 10 CFR Part 140. The Executive Director for Operations, chairman of the panel, reported back to the Commission on August 23 that the panel had been formed and would begin work immediately. A week later, on August 30, the Executive Director reported to the Commission the procedures the staff panel would follow in analyzing data and reaching its recommendations. These procedures were published in the Federal Register on September 7, 1979, 44 FR 52391. The panel continued its work throughout the fall of 1979.

On August 29, 1979, the Commission received a request for a public hearing on the ENO determination from attorneys representing plaintiffs in class action suits alleging damages resulting from the accident. The Commission granted this request, and ordered the staff panel to conduct an informal hearing in Harrisburg, Pennsylvania at which members of the public could address the panel and submit statements for the record. This hearing was announced in the Federal Register on November 6, 1979, 44 FR 64133, and efforts were made to inform the public in the Harrisburg area.

The hearing was held on November 21, 1979, before several members of the staff panel and members of the working group assisting the panel in the review of accident data. Seven persons addressed the panel, and statements were submitted for the record by several speakers and others unable to attend the hearing. A transcript of the hearing was kept as part of the ENO determination record.

On December 31, 1979, the staff panel submitted its report to the Commission. Announcement was made in the Federal Register on January 4, 1980, that the report was available for public comment for a thirty-day

period. 45 FR 1180. This public comment period ended on February 4, 1980, thus closing the record for this determination.

II. Summary of the Record Before the Commission

The record in this proceeding is in four parts, all of which are available for public inspection in the NRC Public Document Room in Washington, D.C. and in Middletown, Pennsylvania: (1) Report of the Staff Panel, December 31, 1980, (2) Public comments following the announcement of the ENO determination, (3) Transcripts of the November 21 hearing in Harrisburg, and statements submitted for the record, and (4) Public comments on the Report of the Staff Panel.

A total of 58 public comments have been received which generally address the ENO question. These comments are summarized and broken down by category in Appendix C to the Report of the Staff Panel. The Staff Report also responds to each category of comments. Four public comments were received by the Commission which specifically address the staff's report, of which one analyzes the staff's findings in some detail.

In reaching this determination, the Commission has considered all parts of the record. Although we accept the findings of the Staff Report and thus conclude that the accident was not an ENO, we do so having weighed carefully the contrary views expressed in public comments and at the Harrisburg hearing.

III. Statutory and Regulatory Framework

The term "extraordinary nuclear occurrence" is defined by Section 11(j) of the Atomic Energy Act as follows:

The term "extraordinary nuclear occurrence" means any event causing a discharge or dispersal of source, special nuclear, or byproduct material from its intended place of confinement in amounts offsite, or causing radiation levels offsite, which the Commission determines to be substantial, and which the Commission determines has resulted or probably will result in substantial damages to persons offsite or property offsite.

The definition thus provides a two-pronged test: (1) substantial offsite release or substantial offsite radiation, and (2) actual or likely substantial offsite damages. This section also requires the Commission to "establish criteria in writing" for application of these tests to specific events.

The Commission's criteria are found in 10 CFR 140.84 and 140.85, and are set out fully in the Staff Report at 8-11. Appendix B to the Staff Report may be referred to for a more detailed description of the ENO and waivers of defenses provisions of the Price-Anderson Act and of the Commission's ENO criteria. It will suffice to note here that in making this determination

we have applied Criterion I and Criterion II to the facts of the Three Mile Island accident. As described below we find that the radiological releases associated with the accident do not rise to the levels specified in Criterion I, and thus are not "substantial" for statutory purposes. We reach no explicit finding on whether damages resulting from the accident meet Criterion II, and hence make no determination as to whether the damages are "substantial" within the meaning of the statute. Because the statutory definition requires that both tests be satisfied, we reach a negative conclusion.

IV. Review of Staff Panel Findings and Recommendations

A. Standards for Review

The ENO determination envisioned by Congress and the Commission's rules is an objective decision, depending upon the application of specific criteria to the facts of a particular accident. This is especially true of Criterion I, where the question is whether measured releases or radiation levels (or the best estimates of releases or radiation levels for which direct measurements are not available) meet the levels specified in the criterion. Criterion II is somewhat more subjective, at least as to certain of the damage categories. Assessment of dollar amounts of damages that "probably will result" from the accident, prior to any court judgments reducing claims to exact figures, is by nature more difficult than comparison of measured or estimated releases or radiation levels with established levels. The purpose of having objective tests, of course, is to permit their application soon after an accident has occurred in order to speed recoveries in appropriate cases.

While the final determination in this case is our responsibility, we necessarily must rely upon the work of the staff in analyzing the mass of data relevant to the criteria. Our review of the staff's findings first focuses on whether the staff has taken a sufficiently conservative approach to application of the criteria. Also appropriate for close Commission scrutiny are major legal or policy questions presented, for example, whether a particular category of damages should be included under Criterion II.

Finally, we must examine the record as a whole to determine whether all available data have been assembled and considered and whether adequate opportunity for public input has been provided.

If the staff's findings are acceptable in the above respects, the remaining questions are quantitative, i.e., whether, based on the record that has been compiled, radiological releases or radiation met the levels specified in Criterion I, and whether damages met the levels specified in Criterion II. In

approaching these questions the Commission has not redone the various calculations of doses and radiation levels prepared by the staff. Rather, the Commission's review has focused on whether there is anything apparent in the record as a whole indicating that the staff made any significant errors requiring re-analysis.

B. Criterion I

1. Conservatism

Section VIII(A) of the Staff Report discusses the assumptions made by the staff panel in evaluating exposure levels relevant to Criterion I. As to duration of the accident, the staff assumes that it began on March 28 and ended on May 9, when "all discharges from the reactor were within the dose levels and concentrations specified in Appendix I to 10 CFR Part 50 . . . and 10 CFR Part 20 of the Commission's regulations." While the staff acknowledges that further releases above these levels are possible at TMI, the Report concludes that such releases would be separate "nuclear incidents" within the meaning of the Price-Anderson Act.

For a definition of "offsite," the staff concluded that while the possible choices were separated by less than 100 feet at points nearest to the plant, the definition adopted "include(d) all areas, whether or not owned by the licensee, outside of the owner-controlled area enclosed by the permanent fence on Three Mile Island." (See Staff Report at 14-16). This definition would include some area owned by Metropolitan Edison outside the permanent station fence.

The staff panel considered four possibilities in applying the language of Criterion I referring to "persons offsite [who] were, or could have been, or might be exposed" The panel decided to carry out calculations for three of these possibilities, all of which pertain to the "could have been" category:

Under one assumption, individuals, were assumed to be located at points corresponding to the highest recorded doses where, in fact, no individuals are known to have been . . . The Panel also considered a hypothetical person exposed outdoors for the periods of releases of noble gas and iodine from the accident and placed just offsite at spots that the Panel concluded would hve seen the highest exposure. Finally, in order to obtain an upper limit for possible exposure to compare against the values in Criterion I, a person was hypothesized to have the ability and knowledge to be transported so as to be in the area of highest radiation exposure during the course of the accident. (Report at 17-18)

The staff added a statistical measurement error to recorded doses corresponding to a 99.9 percent confidence level, and did not include a reduction factor of 1.2 to 2.2 for the demonstrated over-response of

thermoluminescent dosimeter to radiation emitted during the accident. These calculational methods would naturally result in projected doses far in excess of the maximum actual dose received by real persons, which was probably on the order of 75 millirem. (See Document 6 to Appendix A of the Staff Report).

We are satisfied that, as to each of the three assumptions, the staff has taken a suitably conservative approach. The period chosen to delimit the accident encompasses all releases fairly attributable to the March 28 accident itself. We agree that it is appropriate to regard any further elevated releases from the reactor site as separate incidents once the plant has been brought to a cold shutdown and release levels have declined to within normal operating range. Similarly, the staff has chosen the most conservative definition of "offsite" for purposes of measuring possible exposure levels.

Finally, it would be difficult to conceive of a more conservative method of calculating possible dose levels than assuming a person constantly moving into the area of highest possible exposure throughout the duration of the accident. In fact, this category probably goes beyond any fair reading of "could have been" exposed. Nevertheless, it does establish, as the Staff Report states, an upper bound of projected doses. If calculations based on this unrealistic scenario did not meet the levels of Criterion I, it is clear that the Criterion has not been met.

2. Legal or Policy Issues

As we have noted above, the application of Criterion I is largely quantitative. When making the comparison of actual or projected doses (or contamination levels) with the levels in the Criterion, however, the question arises, how close must calculated or measured levels be to those in the Criterion in order for it to be met?

There will always be a significant margin of error in measurements of radiation offsite and in calculations which estimate offsite exposures or contamination levels. With this in mind, it is appropriate to regard the thresholds of Criterion I as a guide for the meaning of "substantial" rather than as rigid levels with no allowance for uncertainties. If it appears that calculations based on reasonable scenarios (or actual measurements, if available and sufficiently accurate) enter the basic range of the criterion, e.g. tens of rems for person exposures, we would conclude that the criterion had been met. On the other hand, if this range can only be reached by extreme upper-limit bounding calculations, or when actual measurements and reasonable calculations do not enter this range, we must conclude that the criterion has not been met. We view the range of discretion in applying

Criterion I wide, but not to the extent of making the judgment subjective. The purpose of having prospective criteria is to permit the resolution of individual cases on an objective basis. The exercise of unlimited discretion would frustrate this purpose and would leave our determination subject to criticism for failure to follow our own regulations.

3. Record Supporting the Staff Finding

Appendices E and F to the Staff Report collect the technical data and calculations supporting the finding that Criterion I has not been met. Appendix E approaches the problem from the "source term" perspective, while Appendix F analyzes measurement data.

In compiling Appendices E and F, the staff panel drew upon work performed by the NRC staff, other Federal agencies, the State of Pennsylvania, Metropolitan Edison, and industry consultants. Furthermore, the staff had before it the public comments and transcript of the Harrisburg hearing (and statements for the record), some of which addressed the question of radiological releases and offsite exposures.

In reviewing Appendices E and F, we find them to be a detailed and complete analysis of available data. Furthermore, we are unaware of any significant source of data which has been overlooked or inadequately considered. Our conclusion is that the record before us is complete and that adequate provision has been made throughout this proceeding for public comment.

4. Application of Criterion I

Table 16 of Appendix E to the Staff Report summarizes the upper-bound estimates of doses relevant to Criterion I, and compares those doses with the levels in the criterion. These "total" doses are themselves somewhat unrealistic since, as the Report explains, obtaining the total dose listed would require a person to be in two places at once. Table 17 summarizes results for ground contamination.

The upper-bound dose rates are generally an order of magnitude lower than Criterion I levels, ranging from about a factor of four to a factor of 25. (The best estimate of maximum exposure based on a realistic scenario is at least an order of magnitude smaller. See Table 4 to Appendix E). Ground contamination dose rates range from a factor of several hundred (for gamma) to about six (for beta). Again, realistic estimates would be much lower.

Measurements summarized in Appendix F generally support this analysis. Projected upper-bound doses based on actual measurements range from a factor of 14 below Criterion I (for whole body) to a factor of 6.6 (for

skin exposure). Upper bounds on surface contamination were two to three orders of magnitude below the levels of Criterion I (See Appendix F to Staff Report at 63-65).

Based on these calculations and measurements, we must conclude that the radiological consequences of this accident, as to both exposures and surface contamination, did not enter the range of Criterion I in any respect. We accept the conclusion of the Staff Report that Criterion I has not been met.

C. Criterion II

The Staff Panel experienced considerable difficulty in applying Criterion II to this accident. In part, this difficulty was due to the unusual nature of this accident, i.e., severe onsite consequences resulting in relatively small offsite releases of radiation. As the Staff Report points out (note at 25), the assumption that an accident could not meet Criterion II without—almost automatically—meeting Criterion I is not necessarily true. One can envision an accident even more severe than TMI in terms of onsite damage, resulting in widespread evacuation and losses related thereto, yet minor in terms of actual radiological consequences.

The dual nature of the criteria, however, reflect the dual nature of the statutory definition noted above: one must have both “substantial” offsite releases or radiation and “substantial” offsite damages for an ENO to be found. In this case, it is clear that Criterion I has not been met, and thus the Staff Panel did not find it necessary to go beyond pointing out the difficulties in applying Criterion II to an accident of this kind.

The legislative history of the ENO concept, and the background for the criteria, seem to address an accident where rather sudden offsite releases cause personal exposures and contamination to property meeting Criterion I, rather than an accident of long duration causing anxiety—and some evacuation—but not “substantial” effects in radiological terms. In the former case, the estimate of immediate losses—which generate the need for quick recoveries—can be made and the waivers activated if the Criterion II levels are met. In the case of TMI, however, “damages” other than those directly associated with the evacuation (which have, for the most part, already been compensated) can only be ascertained after extended litigation. The actions filed in Harrisburg claim losses for mental suffering, diminution in property values, business losses, and so on—all extremely difficult to estimate numerically. Further, it is by no means clear that Congress intended such indirect damages (that is, not caused by a substantial release of radiation) to be considered as part of the ENO determination.

We find ourselves in agreement with the Staff Panel that application of Criterion II in this case presents difficulties which make an explicit finding almost impossible to reach. Since the Staff Panel found conclusively that Criterion I had not been met, and both Criterion I and Criterion II must be met for there to be an ENO, it decided not to explore the matter further.

This accident demonstrates that Criterion II needs to be addressed by rulemaking to resolve the problems pointed up by the facts of TMI. Such a rulemaking is now under way, in which Criterion I will also be re-examined. Full opportunity for public participation will be provided. It should be noted, however, that while the criteria can be revised by the Commission as appropriate, the basic definition of Section 11(j)—and the Congressional intent behind the ENO concept—must be followed.

D. Public Comments on the Staff Report

Four public comments were received following transmittal of the Staff Report. Of these, only the comment from attorneys representing TMI class action plaintiffs subjects the Staff Report to careful analysis. Four major points are made by this comment: (1) The Commission should use upper-bound dose figures and find that the thresholds of Criterion I have been met, (2) the "Heidelberg Report" should be considered in assessing doses, (3) Damages far exceed the Criterion II thresholds, and (4) A negative ENO determination at this time would be premature. We address these points in order.

We have above accepted the use of upper-bound calculations based upon unrealistic exposure scenarios as a basis for finding that Criterion I is not met. The comment takes issue, however, with the refusal of the Staff Report to consider thyroid exposure of a child at the site boundary, moving in such a way as to be downwind of the plant during the entire release period. The Staff Panel found it "inconceivable that an infant was anywhere near the exclusion boundary." The Staff Panel also found it unrealistic to imagine continuous movement over the entire 43-day period of iodine releases in order to maximize the dose. (Report at 21). The comment claims that using this extreme scenario—a moving child at the site boundary—one could obtain a thyroid dose level meeting that aspect of Criterion I.

As we have indicated above, Criterion I cannot be regarded as met when one of its levels can only be met or approached by an extreme upper-bound calculation based on an unrealistic scenario. We must agree with the conclusion of the Staff Panel that thyroid exposure of a child held downwind of the plant at the site boundary during the entire 43-day period of iodine release may not be considered a realistic scenario, nor is it even

useful as a bounding calculation. While we have accepted the Staff Panel's upper-bound approach as a demonstration that no real persons could have been exposed to substantial amounts of radiation, we cannot go so far as to rest a determination upon total departures from realistically estimated exposures.

The "Heidelberg Report" is not part of the record in this proceeding, nor is it specifically addressed in the Report of the Staff Panel. The comment requests that the "Commission give due weight to the findings of that Report which have great relevance to exposures from plants in the United States." The comment then quotes portions of this report alleged to cast doubt on TMI dose calculations. The comment asks that TMI radiation data be supplied to the University of Heidelberg for analysis based on this report and the results compared with those already reached.

This report (also known as the "Wyhl Report") has been the subject of several recent staff papers. In the first, dated December 10, 1979, the staff informed us that it had performed a preliminary review of this report and had concluded that its dose estimates were unrealistically high when compared to dose estimates based on models used by the NRC. As recently as January 30, 1980, the staff transmitted to us a complete draft review of the "Heidelberg Report." The basic conclusion of this review was unchanged from the earlier staff paper: the "Heidelberg Report" used input parameters which were not supported by environmental monitoring data near nuclear plants in the United States, and hence its dose estimates were from 10 to 10,000 times to high when compared with NRC values or measured environmental radioactivity levels near power reactors. The staff concluded that "the Wyhl Report's estimated dose from vegetation, meat, and milk ingestion is not a realistic dose for the hypothetical maximum individual living near nuclear power plants in the U.S."

It is also important to recognize that the "Heidelberg Report" focuses upon food chain pathways, i.e., estimated doses from vegetation, meat, and milk ingestion. The principal exposure pathways at Three Mile Island were external radiation and radioiodine inhalation. Exposures related to the food chain would be, at most, small fractions of the calculated or estimated exposures used in the Staff Report.

We are therefore satisfied that the staff was well aware of the "Heidelberg Report" during its preparation of the ENO findings, and based upon its analysis of the Report declined to use its dose estimates. The comment here considered provides several brief quotes from the Report,

²Commissioners Gilinsky and Bradford do not believe that the "Heidelberg Report" is relevant to this ENO determination. Consequently they do not think it is necessary to reach a conclusion as to the merits of the Report.

but supplies no basis for concluding that the staff's review is in error. For purposes of this ENO determination, we regard it as sound to use dose calculational models which use environmental monitoring data taken from operating nuclear power plants in the United States, and thus decline to further consider the "Heidelberg Report" in this proceeding.²

The comment next presents facts which, it is alleged, show that Criterion II has been met in this case. These facts only serve to emphasize the problems we have already acknowledged in applying Criterion II to this accident. They are academic in this case, however, since we find that Criterion I has not been met.

Finally, the comment argues that a negative determination should not be made "until the possibility of future releases is foreclosed." On this point we strongly disagree. We have above agreed with the conclusion of the Staff Panel that any future releases exceeding Commission regulations must be considered a separate incident. It was the intent of Congress in providing the ENO concept (and the waivers of defenses) that it should be expeditiously applied. This is, in fact, a major reason for precluding judicial review of the Commission's determination. It may well be several more years before Unit 2 has been decontaminated. Our determination should not await the possibility of further releases during that period which could result from clean-up operations. A determination at this time, whether negative or positive, informs the Federal court in Harrisburg of whether the waivers of defenses are to be applied. A negative determination leaves the Court free to apply state tort law to the pending cases without application of any waivers of defenses, the result intended by Congress where an ENO was not found.

DETERMINATION

The Commission finds that Criterion I, 10 CFR 140.84, has not been met by the March 28, 1979, accident at Three Mile Island Nuclear Station, Unit 2. The Commission therefore determines that this accident does not constitute an "extraordinary nuclear occurrence" within the meaning of Section 11(j) of the Atomic Energy Act and 10 CFR Part 140 of the Commission's regulations.

For the Commission,

John F. Ahearne
Chairman

Dated at Washington, D.C. this
16th day of April 1980

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. 50-272

PUBLIC SERVICE ELECTRIC
AND GAS COMPANYSalem Nuclear Generating
Station, Unit 1

April 1, 1980

The Appeal Board denies the licensee's motion for directed certification of whether, in light of Commission policy precluding consideration of the environmental consequences of "Class 9 accidents" in the licensing of land-based nuclear reactors, the Licensing Board may entertain a question regarding the possible consequences of a gross loss of water from the facility's spent fuel pool. In addition, the Appeal Board denies the licensee's motion for alternative relief and a stay of the hearing schedule.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

Discretionary interlocutory review will be granted sparingly, and then only when a licensing board's action either (a) threatens the party adversely affected with immediate and serious irreparable harm which could not be remedied by later appeal, or (b) affects 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

Mr. Mark J. Wetterhahn, Washington, D.C., for the licensee, Public Service Electric and Gas Company, petitioner.

Mr. William D. Paton and Mrs. Janice E. Moore for the Nuclear
Regulatory Commission staff.

MEMORANDUM AND ORDER

Before us is a motion for directed certification of a question which recently arose in this license amendment proceeding. At issue is a proposal to expand the storage capacity of the spent fuel pool for the Salem Nuclear Generating Station, Unit 1. On February 22, 1980, the Licensing Board directed the parties to respond to 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 expanded storage and those occasioned by the present pool?

The licensee, Public Service Electric and Gas Company, now asserts that by asking this question, the Board below is undertaking to consider the environmental consequences of a Class 9 accident contrary to Commission policy. The licensee accordingly asks us to certify whether the Board below may entertain such a question.¹ Alternatively, licensee requests that we direct the NRC staff to advise the Commission whether the consequences of a Class 9 accident² should be considered in this proceeding. Further, "out of an extreme abundance of caution," the licensee also asks that we stay the Licensing Board's schedule for hearing evidence on the question it posed.³

¹In its motion for directed certification, the licensee requested that we certify this question to the Commission for its determination, pursuant to 10 CFR 2.785(d). Licensee's Motion for a Directed Certification and for a Stay, at 6, 9, 14 (filed March 3, 1980). But in light of the Commission's recent clarification of its policy on the matter (see p. 357, *infra*), such certification would not be appropriate. Moreover, in a supplemental brief addressing the implications of that Commission action, the licensee now urges that we grant its requested relief directly. Licensee's Supplemental Brief, at 6 (filed March 24, 1980). We have therefore elected to treat the licensee's motion as a petition for "directed certification" to us in accordance with 10 CFR 2.718(i), which we may entertain in the exercise of our delegated review functions. See, *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

²We use the term "Class 9 accident" in the sense that the Commission ascribed to it in *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 258 (1979). Briefly, such accidents "involve sequences of postulated successive failure more severe than those postulated for the design basis of protective systems and engineered safety features." Because of their very low probability of occurrence, "nuclear power plants need not be designed to mitigate their consequences, and, as a result, discussion of such accidents in applicants' Environmental Reports or in staff's environmental impact statements [is] not required." *Ibid.*

³On March 20, 1980, we issued an order explaining that because we had not yet received all the parties' responses to the licensee's motion, any relief from the March 24 deadline for filing testimony should be sought from the Licensing Board. The next day, the Board granted the intervenors' request for an extension of time to file testimony on the board's question and postponed the hearing date to April 28, 1980. In light of the Licensing Board's action and our disposition of the motion for directed certification, any perceived need for a stay no longer exists.

For the reasons which follow, the licensee's motion for directed certification, alternative relief and a stay are denied.

1. Soon after the accident at Three Mile Island, the Licensing Board on April 18, 1979 posed three questions to the parties in this proceeding and requested that they be addressed, along with several contested matters, at an upcoming evidentiary hearing.⁴ In response to the staff's objection, the Board withdrew its second question and postponed the time when it would hear evidence on the other questions. The staff, joined by the licensee, also objected to that portion of the Board's third question concerning the effects of an explosion or meltdown on the Salem spent fuel pool. They asserted that the question impermissibly required consideration of Class 9 accidents. The Board took evidence on its first question and the unchallenged portions of its third question; it then posited a fourth question to the parties. The Board asked, in effect whether the TMI accident was a Class 9 accident.⁵

After receiving the parties' varying responses to its fourth question — including the staff's answer characterizing TMI as a Class 9 accident — the Board issued a memorandum and order on February 22, 1980 addressing, *inter alia*, the licensee's and staff's objection to its previously posed third question. The Board discussed recent developments concerning the authority of adjudicatory boards to consider the consequences of Class 9 accidents, particularly focusing on our prior opinion and that of the Commission in *Offshore Power Systems*.⁶

⁴Those three questions were as follows:

1. To what extent did the accident at Three Mile Island affect the spent fuel pool at that site?
2. If there had been an explosion or "meltdown" at Three Mile Island, what effect would that have had upon the spent fuel pool? To what extent would it have mattered how much spent fuel was present at the pool?
3. 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? If an explosion or "meltdown" occurred at Salem, to what extent would that affect the spent fuel pool? To what extent would it have mattered how much spent fuel was present at the pool at Salem?
LBP-80-10, 11 NRC at 337

⁵Specifically, at a hearing session on July 10, 1979, the Board inquired as follows (Tr. 922-23): 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?

⁶*Offshore Power Systems* (Floating Nuclear Plants), ALAB-489, 8 NRC 194 (1978); *on certification*, CLI-79-9, 10 NRC 257 (1979).

The Licensing Board apparently read those precedents as suggesting that “where the consequences of an accident are qualitatively different from any analyzed before,” an adjudicatory board would not be precluded from any considering such a hypothetical accident.⁷ LBP-80-10, *supra*, 11 NRC at 345. Having gone this far, however, the Board admitted that by applying its own test, it could not conclude whether increased fuel pool storage would present a qualitative change in consequences from previously analyzed accidents. The Board was therefore unable to determine “whether that accident must be considered in an environmental impact statement.” This being so, the Board recast its third question into a form that “focuses upon a specific mechanism and upon the specific nature of change which will occur with expanded storage.” *Id.* at LBP-80-10, at 346.

The Board concluded with the declaration that “[o]nly after we have such a measure of the quantitative difference which the fuel pool expansion entails will we decide whether this accident should be addressed as a potential environmental impact.” *Id.* at LBP-80-10, at 346.

As we understand its memorandum, the Board declined to consider any postulated accident — Class 9 or otherwise — unless and until it was shown to have some significantly more adverse consequences as a result of the pool modification.

2. Our decisions establish that discretionary interlocutory review will be granted only sparingly,⁸ and then only when a licensing board’s action either (a) threatens the party adversely affected with immediate and serious irreparable harm which could not be remedied by a later appeal, or (b) affects the basic structure of the proceeding in a pervasive or unusual manner.⁹ The Board’s reformulated question, as we construe it, poses neither serious nor irreparable consequences for the licensee. The basic structure of the proceeding is not affected by the change; rather, the new question simply appears to reflect the Licensing Board’s effort to carry out its fundamental responsibility; namely, to satisfy itself whether the proposed license amendment would unreasonably affect the public health and safety. In our judgment, the Board below has marked a path of inquiry

⁷We are uncertain about precisely what “accident” the Licensing Board had in mind, whether it be the postulated “gross loss” of pool water, the underlying events (such as an explosion or meltdown) that might somehow lead to that loss of pool water, a sequence of events similar to that which occurred at TMI, a Class 9 accident, or some other accident. For this reason, we hesitate to preclude further inquiry into what may be a proper subject for the Board’s consideration.

⁸*Puget Sound Power and Light Company* (Skagit Nuclear Power Project, Units 1 and 2), ALAB-572, 10 NRC 693, 695 fn. 5 (1979), and cases there cited.

⁹*Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

that stops short of considering a Class 9 accident. The licensee's motion for directed certification is therefore premature.¹⁰

Moreover, subsequent to the Licensing Board's memorandum, the Commission clarified its policy on consideration of Class 9 accidents in *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), CLI-80-8, 11 NRC at 433. In vacating our instruction to the staff to advise the Commission whether Class 9 accidents should be considered in that case,¹¹ the Commission ruled in unmistakable terms that "the existing policy on Class 9 accidents was not displaced in *Offshore Power* and would not be displaced pending generic consideration of Class 9 accident situations in policy development and rulemaking."¹² The Commission went on to explain that it had "envisioned that the staff would bring an individual case to the Commission for decision only when the staff believed that such consideration was necessary or appropriate prior to policy development."¹³ Thus, it is now settled that the Commission has reserved for itself the right to decide whether the consequences of Class 9 accidents at land-based reactors are to be considered in any given case. Furthermore, it is entirely the staff's responsibility to apprise the Commission whether such accidents should be addressed in individual cases.¹⁴ In view of this unambiguous expression of Commission policy and its controlling effect here, it would be inappropriate for us to assume that the Licensing Board intends to consider the environmental consequences of a Class 9 accident in

¹⁰The interpretation we have placed upon the Licensing Board's action is, admittedly, not entirely free of doubt. We therefore understand how the licensee might have misapprehended some of the Board's discussion in its opinion. See fn. 7 *supra*. But, however broadly (or erroneously) the Board may have read the Commission's decision in *Offshore Power*, the last substantive paragraph of the Board's opinion demonstrates that the Board has deliberately stopped short of considering a Class 9 accident. Further, we do not share the licensee's view that it is "beyond question" (Motion, at 2) that the Board considered a gross loss of pool water to be such an event. To borrow Judge Friendly's comment in related circumstances, "we are not convinced that the [Licensing Board] is steering what is bound to be a collision course" with Commission policy. *Ecology Action v. AEC*, 492 F.2d 998, 1002 (2d Cir. 1974).

¹¹ALAB-573, at 791-792.

¹²CLI-80-8, *supra*, 11 NRC at 434.

¹³*Ibid.*

¹⁴See also *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-587, 11 NRC at 474.

the absence of a direct Commission instruction to do so. In these circumstances, we see no occasion to grant the licensee's motion for directed certification.¹⁵

Motions for certification, stay, and other relief *denied*.¹⁶

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹⁵The licensee's request for alternative relief, that we direct the staff to inform the Commission whether Class 9 accidents should be considered in this proceeding, is similarly denied. That relief is precluded by the Commission's *Black Fox* ruling.

¹⁶Dr. Johnson participated in formulating this decision and joins in the result; he did not, however, review the final draft of this opinion.

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. 50-338 OL
50-339 OL**VIRGINIA ELECTRIC AND
POWER COMPANY
(North Anna Nuclear Power
Station Units 1 and 2)**

April 7, 1980

The Appeal Board defers decision on the turbine missile issue, to await the development of further data and analyses respecting that issue. On the basis of supplemental information submitted by the applicant and staff and other material already in the record, the Board determines that, pending further consideration of the issue, operation of Unit 1 need not be halted or Unit 2 kept out of operation.

MEMORANDUM AND ORDER

During the course of our review of the Licensing Board's decision in this operating license proceeding,¹ we raised two safety issues on our own initiative. See ALAB-491, 8 NRC 245 (1978). Last June, we conducted an evidentiary hearing on both issues. We disposed of one of them earlier this year by deciding that the continuing settlement of the ground beneath the service water pumphouse did not pose an unmanageable problem. ALAB-578, 11 NRC 189 (February 11, 1980).

¹That Board had found no barrier to the award of operating licenses for both units. The Unit 1 full-power license was issued on April 1, 1978 and commercial operation of that unit began on June 6, 1978. No license for Unit 2 has yet been issued.

At that time, we reserved decision on the other plant safety issue, that relating to turbine missiles (*i.e.*, to the likelihood that pieces of the turbine would break off and cause unacceptable damage — in terms of safety consequences — to other plant systems). We held up our decision because new developments bearing on the resolution of the turbine missile question had been brought to our attention. Specifically, cracking of turbine disks had been uncovered at a number of facilities employing equipment made by the same manufacturer that supplied the North Anna turbines.²

We tentatively scheduled a supplemental hearing to consider that new information. See our unpublished memorandum of February 12, 1980. The applicant requested, however, that before we went ahead with the hearing we first consider whether our concerns might be satisfied by certain information it would furnish us in writing.³ Upon reviewing that material together with the NRC staff's appraisal of the matter, a majority of this Board made three determinations which were embodied in an unpublished order issued on March 3, 1980. First, the submissions went "a long way toward establishing that operation of North Anna 1 need not be halted now in order to conduct a lengthy inspection of its turbine." Second, there consequently was no need to proceed with the hearing (at least as it was then scheduled). Third, the applicant and the staff should be called upon to explain further (again in writing) the underpinnings of certain analyses employed by them in arriving at their conclusions.⁴

We now have that further explanation before us. It furnishes necessary support for the conclusions previously advanced. On the basis of it, we are able to determine that the turbine disk cracking being experienced elsewhere is not likely to occur to any hazardous extent at North Anna Unit 1 prior to the next refueling shutdown, now scheduled for December of this year. That is because the development of the cracking phenomenon is time-related; in light of the number of hours the Unit 1 turbine will have been in operation, we can say with reasonable assurance on the basis of the record now before us (reflecting experience elsewhere) that any cracks that might develop would not have had time to approach critical size by then.⁵ The applicant has made a commitment to have the turbine inspected during the

²Additionally, we were advised that the manufacturer was re-analyzing the potential amount of energy associated with the missiles created by turbine disk disintegration.

³Otherwise, that information would have formed the foundation for testimony at the hearing.

⁴Dr. Buck dissented from so much of the March 3 order and sought this additional information. In his view, not shared by the majority, the information already supplied was sufficient to permit continued operation of Unit 1 until the next scheduled shutdown (see at 540-541, *infra*).

⁵As noted above, Unit 2 has not yet begun operation. Our final decision on the turbine missile question should thus be rendered long before disk cracking might become a problem for that unit.

December shutdown;⁶ that inspection will be capable of detecting any substantial cracking that may actually have occurred. And the results of the inspection will furnish a foundation for new judgments about the safety of any operations beyond that point. For now, the recent developments relating to the turbine missile problem do not require either that operation of Unit 1 be halted or that Unit 2 be kept out of operation.

This is not to say, however, that we now have the final word on the long-term significance of the disk cracking phenomenon. For example, we do not know the extent of its impact on the continuing validity of certain portions of the evidence that was adduced before us at the hearing last year, which dealt with the turbine missile question in terms of the plant's full lifetime. Indeed, it will be some time before the extent of that impact will be known.⁷ Of at least equal importance, there is nothing now before us which might explain the basic reasons for the surprisingly early crack formation in turbine blades of the same type and manufacture as those used in the North Anna units. We will expect the papers supplied to us later this year to address in some detail what has been ascertained regarding the causes of the early cracking, as well as the steps being taken to correct the problem.

In the circumstances, we will continue to defer our decision on the turbine missile question.⁸ Implicit, of course, in our taking such a step is our tentative conclusion, based on our study of the record thus far, that the safety concerns that motivated us to call the hearing in the first place were otherwise adequately addressed in the testimony.

Final decision *deferred*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁶See "VEPCO's Responses to Site Specific General Questions on...Unit 1," Nos. I.B, II and IV. Needless to say, any proposed deviation from that commitment must be immediately reported to us.

⁷The applicant's present estimate is that it will be this October before it will be able to advise us finally either on that score or with regard to the results of the re-analysis which is being done on the subject of missile energy (see fn. 2, *supra*).

⁸It remains to be seen whether a supplemental hearing will be needed before we reach that decision.

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. 50-466

HOUSTON LIGHTING AND
POWER COMPANY
(Allens Creek Nuclear
Generating Station, Unit 1)

April 22, 1980

The Appeal Board, with one member dissenting, reverses that portion of the Licensing Board's unpublished March 10, 1980 order which rejected the petitioner's contention regarding the preferability of a marine biomass farm as an alternative to the proposed nuclear facility, and remands the cause with instructions both to accept that contention as litigable and to grant the petition for intervention in this construction permit proceeding.

RULES OF PRACTICE: INTERVENTION PETITION (PLEADING
REQUIREMENTS)

Although a totally deficient pleading may not be justified on the basis that it was prepared without the assistance of counsel, a *pro se* petitioner is not "to be held to those standards of clarity and precision to which a lawyer might reasonably be expected to adhere." *Public Service Electric and Gas Company* (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973).

RULES OF PRACTICE: INTERVENTION PETITION

In determining whether an intervention petition should be granted, it is not the function of a licensing board to reach the merits of any of a petitioner's contentions. For this purpose, the requirements of 10 CFR 2.714 are met if a petitioner states the reasons (*i.e.*, the basis) for at least one contention with reasonable specificity.

RULES OF PRACTICE: INTERVENTION PETITION

The obligation to establish the existence of some factual support for the particular assertions that petitioners for intervention have advanced as the basis for their contentions need not be undertaken as a precondition to a board's acceptance of a contention for the limited purpose of determining whether to allow intervention under 10 CFR 2.714. Rather, that obligation arises solely (1) in response to a subsequent motion of another party seeking to dispose of the contention summarily under 10 CFR 2.749 for want of a genuine issue of material fact; or (2) in the absence of such a motion, at the evidentiary hearing itself.

APPEARANCES

Messrs. Jack R. Newman, Robert H. Culp and David B. Raskin, Washington, D.C., and J. Gregory Copeland, C. Thomas Biddle and Charles G. Thrash, Houston, Texas, for the applicant, Houston Lighting and Power Company.

Mr. John F. Doherty, Houston, Texas, intervenor *pro se*.

Mr. James Scott, Jr., Houston, Texas, for the intervenor, Texas Public Interest Research Group. Mr. F.H. Potthoff, III Houston, Texas, appellant, *pro se*.

Mr. Stephen M. Sohinki for the Nuclear Regulatory Commission staff

DECISION

Opinion of the Board by Mr. Rosenthal (in which Mr. Farrar concurs):

Now before us is yet another challenge to portions of the Licensing Board's unpublished March 10, 1980 order in this construction permit

proceeding involving the proposed Allens Creek nuclear facility near Houston, Texas.¹ This time, we are asked to overturn the rejection in that order of one of the contentions (No. VI) submitted by F.H. Potthoff, III, in connection with his petition for leave to intervene in the proceeding. Because the rejection led to the outright denial of the petition,² it is subject to interlocutory appellate review under 10 CFR 2.714a at the instance of Mr. Potthoff.³

On a full consideration of the arguments advanced in support of and in opposition to the appeal,⁴ we conclude that contention VI should have been accepted as litigable. For this reason, the March 10 order must be reversed (insofar as it disallowed the contention) and the cause remanded to the Board below with instructions to grant Mr. Potthoff's intervention petition.

I

Contention VI first surfaced in Mr. Potthoff's authorized supplemental filing on June 1, 1979. In its entirety, it read:

In the FES, the Staff states that biomass production is "not now a reasonable alternative" to ACNGS. However, *Project Independence* estimates fuels from biomass production (urban waste, agricultural waste, terrestrial crops, marine crops) would amount to 3×10^{16} gross BTUs per year, and that large quantities of

¹See ALAB-585, 11 NRC at 469 and ALAB-586, 11 NRC at 472. For the reasons stated in those opinions, the appeals there considered were summarily dismissed as unauthorized by the Commission's Rules of Practice. Those reasons are inapplicable to the appeal now at hand.

²In the March 10 order (at 9-12), the Licensing Board also considered and rejected several other contentions put forth by Mr. Potthoff. He failed to exercise his right to complain of that action. This does not, however, preclude him from attacking the ultimate denial of his petition. For, had the Board below accepted contention VI as litigable, the necessary consequence would have been the grant of intervention without regard to the disposition of the remaining contentions. 10 CFR 2.714(b) *Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424 (1973) and cases there cited.

³Section 2.714a(b) provides that "[a]n order wholly denying a petition for leave to intervene...is appealable by the petitioner on the question whether the petition...should have been granted in whole or in part" (emphasis added). It is plain from these terms that Mr. Potthoff alone was entitled to appeal from the denial of his petition — and he has done so. Nonetheless, in purported reliance on an ambiguous statement at 109 of the March 10 order, another petitioner already admitted to the proceeding (John F. Doherty) endeavored to file an appeal of his own on Mr. Potthoff's behalf — similarly attacking the rejection of contention VI. Although that appeal will not lie, we adopt the suggestion of both the applicant and the NRC staff that Mr. Doherty's papers be treated as a brief in support of Mr. Potthoff's appeal. Such a brief is expressly authorized by Section 2.714a(a).

⁴In addition to Mr. Doherty, intervenor TexPIRG supports the appeal. It is opposed by both the applicant and the NRC staff.

marine crops can be grown and harvested without subsidies when oil hits \$11 per barrel. *Project Independence* estimates a 100,000 acre marine biomass farm, producing 27×10^{12} BTUs/year, would cost \$578 million. I contend building and operating a marine biomass farm, or other biomass production systems, would be environmentally preferable to ACNGS, and ask the Board to deny the permit under the NEPA.⁵

.....

By way of response, both the applicant and the NRC staff maintained that contention VI was fatally defective. For its part, the applicant characterized the contention as "impermissibly vague"; viz., as amounting to simply a "broadside assertion" that "building and operating a marine biomass farm, or other biomass production systems, would be environmentally preferable" to the Allens Creek nuclear facility. In this connection, the applicant noted that Mr. Potthoff had neither provided a description of a "biomass farm" nor alleged that the claimed biomass generating alternative would be seasonably available. Further, the Board below was told that the

⁵The statement of the NRC staff to which Mr. Potthoff obviously had reference was contained in the Final Supplement to the Allens Creek Final Environmental Statement. More specifically, in the course of its discussion of alternate energy sources and systems, the staff had this to say about "photosynthetic materials and organic wastes" (at S.9-7; footnotes omitted):

Photosynthetically produced organic material (grown specifically for utilization as fuel material) and organic solid wastes (animal wastes and sewage) can either be burned directly to produce steam in equipment similar to that used with coal or can be subjected to anaerobic fermentation to methane. To be burned directly, these fuels must first be dried in order for combustion to be self-sustaining. If the organic material has a high water content, the energy required for drying prior to combustion may equal or exceed the heat content of the material itself. The growing of plants for energy generation is relatively inefficient because the solar conversion efficiency of the photosynthetic process is seldom over 3% during the growing season. Therefore, the amount of land required for a given energy output is very high. Based on a heating value of 7500 Btu/lb of dry plant tissue and yields of 10 to 30 tons of biomass per acre per year, the land required for a 100-MWe organic-fired power plant would be between 25 and 50 sq miles, or 600 to 1200 sq miles for a plant equivalent to the proposed ACNGS.

The technical feasibility of bioconversion of organic material to methane has been established for many years. The immediate goal is to establish the economics of the process using organic wastes and organic materials resulting from photosynthesis. However, anaerobic fermentation to methane of the entire amount of organic solid wastes believed to be economically recoverable would represent a recovery of 3.6 to 7.8×10^{14} Btu/year, or approximately 2 to 3% of the yearly consumption of methane in the United States. Fifteen-year research and development programs are foreseen to make the processes for both direct combustion and conversion to methane of photosynthetically produced material and solid organic wastes economically and technically feasible on a commercial basis. Production of methane on a large scale is not now a reasonable alternative.

petitioner had "fail[ed] to controvert the detailed Staff review of biomass set out" in the FES Supplement (see fn. 5, *supra*).⁶

As the staff saw it, the principal difficulty with the contention was the absence of any assigned basis for the "allegation of environmental superiority of biomass production over the proposed facility." Beyond that, the staff found the contention unduly "speculative" in view of the like absence of a proffered basis for the implicit claim that "biomass conversion constitutes a viable energy option to Allens Creek."⁷

At a prehearing conference held on October 16, 1979, the Licensing Board called upon Mr. Potthoff to rebut the objections to contention VI. Denying that it was too vague, the petitioner stated that what he had in mind was that "they would grow kelp and take it in and have it decay into alcohol or methane or something like that" (Tr. 931). He went on to assert that the basis for his claim of environmental preferability "is project independence, which says that a biomass farm could be ready...in 1986" (Tr. 932).

In its March 10 order (at 11-12), the Licensing Board rejected contention VI on the *sole* ground that "[n]either in that contention nor during the special prehearing conference (Tr. 931-32) did Mr. Potthoff provide a basis for alleging that such a large scale marine biomass farm would be an environmentally superior alternative." Our decision in *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 162 (1978) was cited for the proposition that the National Environmental Policy Act does not require the striking of a cost/benefit balance with respect to alternatives which are not environmentally preferable.

II

We long ago held that, although a totally deficient pleading may not be justified on the basis that it was prepared by a layman without the assistance of counsel, a *pro se* petitioner is not "to be held to those standards of clarity and precision to which a lawyer might reasonably be expected to adhere." *Public Service Electric and Gas Company* (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973); see also *Detroit Edison Company* (Enrico Fermi Atomic Plant, Unit 2), ALAB-469, 7 NRC 470, 471 (1978). In this instance, notwithstanding that it scarcely qualifies as a model of artistic draftsmanship, the intended thrust of contention VI is not difficult to perceive. In essence, Mr. Potthoff

⁶"Applicant's Response to 'More Contentions Submitted by F.H. Potthoff, III'," dated June 18, 1979, at 2.

⁷"NRC Staff's Response to 'More Contentions Submitted by F.H. Potthoff, III'," dated June 18, 1979, at 2-3.

seeks to challenge the staff's dismissal of biomass production as a viable alternative to the proposed Allens Creek facility. More specifically, he insists that a *marine* biomass farm (apparently not considered by the staff in its evaluation of alternatives in the FES Supplement) should be substituted for Allens Creek. As the basis for this assertion, he relies upon the Federal Energy Administration's "Project Independence Report" issued in November 1974,⁸ as well as upon his claim that such a biomass farm would be environmentally preferable.

A. As we have seen, the Licensing Board rejected the biomass contention because, and only because, Mr. Potthoff offered no justification for the assertion of environmental superiority. Stated otherwise, the Board accepted the position of the applicant and the staff that, in order to put into litigation the marine biomass alternative (and the staff's failure to have considered it), the petitioner was required not merely to allege that that alternative would be environmentally preferable but also to explain why that is so.

That view cannot be squared with our 1973 decision in *Grand Gulf*, ALAB-130, fn. 2 *supra*. There, we were confronted with the question of the sufficiency for intervention purposes of a contention that "the alternatives of conserving electricity or utilizing other methods of producing energy have not been adequately considered." At a prehearing conference, the petitioner's counsel had stated, *inter alia*, that he proposed to introduce evidence that there were geothermal sources in the relevant service area. Given this particularization, the Licensing Board determined that the contention fulfilled the requirement (now contained in 10 CFR 2.714(b)) that a petitioner for intervention set forth the basis for each of his contentions with reasonable specificity — *i.e.*, the requirement which the Board below found that Mr. Potthoff has not satisfied here.

Appealing from the resultant grant of intervention, the *Grand Gulf* applicant pointed to the representation in both its environmental report and the staff's draft environmental statement that there were no known potential geothermal sites in the service area. More significantly, in supporting the applicant's appeal, the staff advanced precisely the same argument that was pressed upon the Licensing Board in the present case:

"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." 6 AEC at 426. But neither of these considerations carried the day. Affirming the Licensing Board, we had this to say:

⁸Although Mr. Potthoff referred simply to "Project Independence," the Licensing Board provided that further identification in its March 10 order (at 11).

...[W]e 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. It is enough that, as here, the basis for the contention respecting the inadequacy of the consideration of alternatives to the construction of this plant is identified with reasonable specificity.

Ibid.

Apparently, *Grand Gulf* was simply overlooked by both the parties and the Board below in this case.⁹ For there is no material distinction which might legitimately be drawn between the contention there involved and the one now under consideration. In both instances, the contention was addressed to the failure to have adequately considered an allegedly viable alternate source of energy. Also in each instance, the petitioner assigned reasons for his belief that the suggested alternative warranted further consideration: in *Grand Gulf*, because geothermal sources were available in this case, because (among other things) biomass sources were both available and environmentally preferable. Finally, both contentions suffered from the same *claimed* infirmity: the *Grand Gulf* petitioner did not supply the underpinnings for his assertion that geothermal sources were available; Mr. Potthoff did not attempt to justify his allegation that a marine biomass farm would be environmentally preferable.

The teachings of *Grand Gulf* thus are fully applicable here and mandate the reversal of the denial of Mr. Potthoff's petition. The short of the matter is that, just as the staff unsuccessfully endeavored to do in *Grand Gulf*, the Board below erroneously imposed upon a petitioner for intervention an obligation that, in actuality, arises only after the petitioner has become a party to the proceeding. More specifically, all that was required of Mr. Potthoff on the petition level was to state his reasons (*i.e.*, the basis) for his contention that the biomass alternative should receive additional consideration. That responsibility was sufficiently discharged by his references to

⁹In this connection, the briefs of the applicant and the staff in opposition to the appeal not only do not refer to *Grand Gulf*, but also are devoid of any mention of the many other prior decisions of this Board which have construed and applied the contentions requirement contained in 10 CFR 2.714. See *fn. 10, infra*.

Project Independence and his assertion respecting the environmental superiority of a marine biomass farm.¹⁰

B. . Our determination that Mr. Potthoff must be admitted to the proceeding on the strength of his contention VI does not carry with it any implication that we view the contention to be meritorious. To the contrary, although the content of the *Project Independence* report cited by the petitioner is not now before us, we think there to be appreciable room for doubt that the burning of methane gas produced by the harvesting and fermentation of kelp grown on a massive — *i.e.*, a 100,000 acre (or 156 square mile) — marine biomass farm could be shown to be both a viable and an environmentally preferable energy alternative to the generation of electricity by means of nuclear fission. But, again, whether Mr. Potthoff will be able to prove the assertions underlying the contention is quite beside the point at this preliminary stage of the proceeding. All that is of present moment is that, under the Rules of Practice of this Commission, as they have been uniformly interpreted, he is entitled to party status to afford him the opportunity to attempt to do so.¹¹

¹⁰There is no room for the slightest doubt that we have adhered to *Grand Gulf* over the years. See, *e.g.*, *Virginia 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), ALAB-528, 9 NRC 146, 151 (1979). In the latter case, for instance, we held adequate a contention which, without elaboration, asserted that local public safety officials were not prepared to deal with the emergency situation which might result in the event of a traffic accident involving the vehicle carrying the spent fuel between facilities. *Grand Gulf* was specifically cited as authority for the proposition that the petitioner was not required, as a precondition to intervention, "to establish that its assertion is well-founded in fact." Rather, "whether particular concern is justified must be left for consideration when the merits of the controversy are reached."

Also instructive is the discussion of the contentions requirement in *Philadelphia Electric Company* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974). In the course of that discussion, we noted that it had been 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. It is enough that the basis for at least one contention be identified with reasonable specificity.

Id. at 20. Here, such identification was provided. To repeat, given Mr. Potthoff's further particularization at the prehearing conference, the applicant and the staff were supplied with enough "so that they will know at least generally what they will have to defend against or oppose." *Ibid.*

¹¹A noteworthy page in the annals of Atomic Energy Commission adjudication illumines the importance attached by the judiciary to insuring that persons have their day in court even with respect to claims which, on their face, appear to be of highly dubious merit. See *In re Grossman*, 107 U.S.P.Q. 181 (AEC Pat. Comp. Bd. 1955); *remanded for reconsideration in light of additional evidence* (D.C. Cir. No. 12959, February 10, 1956); *decision on remand*, 111 U.S.P.Q. 388 (AEC Pat. Comp. Bd. 1956); *affirmed on further judicial review*, 246 F.2d 709 (FOOTNOTE CONTINUED ON NEXT PAGE)

It does not perforce follow, of course, that contention VI will have to be taken up at the forthcoming evidentiary hearing on the Allens Creek application. As we emphasized in *Grand Gulf*, ALAB-130, *supra*, in the context of the geothermal alternative contention there in question, "it will be open to both the applicant and the [NRC] staff to move, pursuant to [10 CFR] 2.749, for summary disposition...on the ground that 'there is no genuine issue to be heard' respecting the availability of adequate geothermal sources in the relevant area." We went on to observe that:

In responding to such a motion, should one be filed, [petitioner] will be obliged to furnish the Licensing Board with a statement of the material facts which he considers to establish the evidence of a genuine issue respecting such availability. Section 2.749(b) is most specific in this regard:

When a motion for summary disposition is made and supported as provided in this section, a party opposing the motion may not rest upon the mere allegations or denials of his answer; his answer by affidavits or as otherwise provided in this section must set forth specific facts showing that there is a genuine issue of fact. If no such answer is filed, the decision sought, if appropriate, shall be rendered.

6 AEC at 426.

That the Section 2.749 summary disposition procedures provide in reality as well as in theory, an efficacious means of avoiding unnecessary and possibly time-consuming hearings on demonstrably insubstantial issues is amply reflected by our recent decision in *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC at 451. In that proceeding, involving an application for an operating license amendment to permit the expansion of the capacity of a spent fuel pool, the Licensing Board summarily resolved in the applicant's favor all of the intervenors' contentions. One of those contentions was to the effect that there had been an inadequate consideration of certain specified alternatives to the proposed pool modification. On the intervenors' appeal, we endorsed the Licensing Board's refusal to order a hearing on that contention.¹² In doing so, we invoked the very *Midland* principal that the Licensing Board in the case at bar improperly employed for the

¹¹(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

(D.C. Cir. 1957), *appeal dismissed*, 355 U.S. 285 (1958). This chronicle involved a dentist who claimed that he was entitled to compensation under the Atomic Energy Act as (to quote the court of appeals) "the inventor who first gave the atomic hydrogen bomb formulas to the United States of America." The moral of the court's 1956 remand order should be self-evident.

¹²ALAB-584 affirmed the grant of summary disposition in its entirety. Although there is a pending petition for Commission review of that decision, it does not challenge the disposition made of the alternatives contention.

quite different purpose of denying intervention.¹³ More specifically, because, *in response to the applicant's motion for summary disposition*, the intervenors had not demonstrated that a genuine issue of fact existed respecting the environmental superiority of any of their suggested alternatives, we held that as a matter of law none of these alternatives had to be further explored at an evidentiary hearing. ALAB-584, *supra*, 11 NRC at 461-467.¹⁴

In sum, the rejection of Mr. Potthoff's contention VI, and the resultant denial of his intervention petition, rested upon a misconception respecting the time at which, under the Commission's Rules of Practice, petitioners for intervention must establish the existence of some factual support for the particular assertions which they have advanced as the basis for their contentions. This demonstration need not be undertaken as a precondition to the acceptance of a contention for the limited purpose of determining whether to allow intervention under 10 CFR 2.714. Rather, the obligation arises solely (1) in response to a subsequent motion of another party seeking to dispose summarily of the contention under 10 CFR 2.749 for want of a genuine issue of material fact; or (2) in the absence of such a motion, at the evidentiary hearing itself.

The portion of the Licensing Board's March 10, 1980 order dealing with Mr. Potthoff's contention VI is therefore *reversed* and the cause *remanded* with instructions both to accept that contention as litigable and to grant the petition for intervention.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

The concurring opinion of Mr. Farrar and the dissenting opinion of Dr. Buck follow, at 552 *et seq.*

¹³See page 546, *supra*.

¹⁴We need add only that, if contention VI is without any merit (which we may not and do not now decide), the applicant and the staff should be able to obtain summary disposition of it with little difficulty. Stated otherwise, only if there is at least some possible substance to the contention might those parties have to expend much time or effort in opposing it — either by motion or at an evidentiary hearing. In such circumstances, of course, they could scarcely be heard to complain that the admission of the contention to the proceeding imposed an *unreasonable* burden upon them.

Concurring opinion of Mr. Farrar:

The Chairman has done his customary thorough job of marshalling the facts and the law in the course of demonstrating that Mr. Potthoff should have been admitted as an intervenor on the strength of his sixth contention. That contention concerns whether a generating plant fueled by the products of a "marine biomass farm" is a preferable alternative to a nuclear power plant. Notwithstanding the force of the Chairman's opinion, some observers may nonetheless wonder why, in this era of heightened safety-consciousness, the agency's resources must be diverted to consider such a curious matter.

That would not be an unreasonable reaction to our decision. Indeed, even though I am almost entirely without knowledge of this particular subject, my intuition tells me that, when the facts are in, for one reason or another the proffered alternative will not appear to be superior to the nuclear plant. But as I understand the principles that govern all judicial and administrative proceedings, I am not allowed to decide cases on the basis of lack of knowledge, intuition, or personal predilections. Rather, there must be something put before me that would enable me to reach my judgments in knowing fashion. At this threshold juncture, I cannot do that with this contention.

This does not mean that valuable hearing time must be consumed with lengthy consideration of contentions that can be readily demonstrated to have no merit. As the Chairman has stressed, traditional procedures are available, and have proven effective when invoked, for disposing of such contentions summarily; for years we have encouraged their use. They are designed to allow adjudicators to dispose of matters on the basis of unchallenged information validly put before them, rather than on their own ingrained propensities.

In this connection, it would be unfair, unwise and (in cases involving safety matters) dangerous to allow adjudicators, before the evidence is in, to reject challenges to the plant on the basis of unspoken assumptions or their sometimes less than reliable convictions about what that evidence would show.¹ One of the prices paid — in the courts and in administrative agencies — for insuring that contestants and issues are treated fairly is seeming inefficiency, *i.e.*, some time will be used giving litigants a chance to

¹I hasten to add that I do not believe, and in no way mean to suggest by these generalized remarks, that anything like this occurred below. To the contrary, I believe the Board below simply misapplied the governing principles in what is concededly a close case (see also fn. 2, *infra*). My comments here are entirely theoretical in nature, designed to point up the rationale behind those controlling principles and why they must be applied here.

establish propositions that ultimately prove invalid. As I understand it, our system of justice in general and our Rules of Practice in particular embody the judgment that, in the long run, time used in that fashion is to be viewed as having been well spent.

For these reasons, and as unsound as the result may appear to some, I am compelled to join the Chairman in admitting the “biomass” contention into the proceeding.² How long it stays there remains to be seen. If it is as lacking in merit as the dissent would have it and as the staff and applicant appear to believe, counsel should be able easily to demonstrate that fact by affidavit of those knowledgeable in the field.³ That is how they would have to proceed if they wished to rid themselves of a non-meritorious complaint in court⁴ that is how they must proceed here. If they make a record of indisputable facts in their favor, the contention may — with certitude which is now lacking — be summarily rejected.

Except for my opening description of his opinion, the Chairman joins in the observations made herein.

Dissenting opinion of Dr. Buck:

My colleagues accept petitioner’s contention No. VI and allow him to intervene in the proceeding under 10 CFR 2.714, the Commission’s intervention rule. They do so even though the contention is invalid by its own terms. Inherent in their action is the proposition that in ruling on the admissibility of a contention contained in a petition for intervention, a licensing board need not be concerned with the substance of a contention; that all a board needs to do in this regard is to ascertain that reasons have been given for the contention without regard to whether they make

²Our decision considers only the one contention brought before us. But the Licensing Board had to deal at the prehearing conference and in its subsequent order with a myriad of potential intervenors and proffered contentions. Many were admitted, many were rejected. In the circumstances, our reversal of the Board’s action on one of the contentions should not be allowed to obscure its generally commendable handling of this complex proceeding.

³In response to Dr. Buck’s dissenting opinion, I need add only that we all agree that NEPA does not require detailed review of the environmental effects of alternatives that are only remote and speculative possibilities (cf. at 555, *infra*). But that only frames the question; it does not supply the answer. For this is an adjudicatory proceeding; until the facts are before us in some legitimate form, we cannot say definitively that the alternative the petitioner is seeking to advance fits into the “remote and speculative” mold. The Licensing Board did not characterize it as such (compare ¶I.C.3-4 of its order, at 10-11); for its part, the staff deemed similar alternatives at least worthy of discussion in the Final Environmental Statement. Of course, if on a summary judgment motion petitioner’s alternative proves to be remote and speculative, no further consideration need be given it. Then, not now, would be the time for the Board below to apply the teachings of *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837-38 (D.C. Cir. 1972); *Consumers Power Company* (Midland Units 1 and 2), CLI-74-5, 7 AEC 19, 24, 30-32 (1974); and *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council*, 435 U.S. 519, 531-35, 549-55 (1978).

⁴See Rule 56, F.R. Civ. P see also Rule 12(b), particularly its last sentence.

practical sense. I am unwilling to believe that the rule must be read to give it such unreasonable effect.

Petitioner's contention No. VI is that a large-scale, marine biomass farm, used for growing kelp to produce alcohol or methane gas, would be an environmentally superior alternative to the Allens Creek nuclear facility and should be substituted for it. Relying on the "Project Independence Report," he further asserts that a 100,000 acre marine biomass farm costing \$578 million will produce 27×10^{12} BTUs/year and that a biomass farm (presumably one of that size) can be ready in 1986. In my view, this contention is unrealistic and frivolous on its face and its rejection proper at this stage of the licensing proceeding.

Just a few simple computations utilizing petitioner's own energy output figures associated with his hypothetical marine biomass farm will suffice to show the total frivolity of his claim. As noted, according to the petitioner, a 100,000 acre (or 156 sq. mile) marine biomass farm will produce enough kelp to supply 27×10^{12} BTUs/year. The Allens Creek facility, however, is designed to produce 107×10^{12} BTUs/year, roughly four times the amount of the postulated marine biomass farm. What this means is that the farm would have to quadruple its production to meet the power needs projected to be served by the plant. Assuming a fourfold increase in the marine area necessary to produce the kelp (a reasonable assumption for this purpose), the result is a marine biomass farm comprising 400,000 acres or 624 square miles. Whether we accept petitioner's claim that a 156 square mile biomass farm is the energy equivalent to the Allens Creek plant or the extrapolated 624 square mile farm, either shows the utter unreality of the contention.¹

Moreover, contention No. VI is defective in another respect. It fails, in my view, to satisfy the Commission's intervention rule that the bases for a contention which a petitioner seeks to have litigated must be set forth with "reasonable specificity" 10 CFR 2.714(b).

The Project Independence Report on which petitioner relies as the basis

¹This observation assumes petitioner's contention in its most favorable light. Information in the Project Independence Report indicates that a marine area twice as large (1248 square miles) would be necessary to grow sufficient kelp to produce the energy equivalent of the plant. This is because the 27×10^{12} BTUs/year figure for a 100,000 acre farm was based on an assumed 60 percent conversion efficiency in the production of the gas for use in a power plant. The efficiency drops to 30 percent, according to the report, after accounting for the energy required to sustain the conversion process. Thus, the energy that would be available for use in a power plant from a 100,000 acre farm (based on 30 percent efficiency) is only 13.5×10^{12} BTUs/year; and to provide the energy equivalent to that produced at the Allens Creek facility a kelp farm of 800,000 acres, or 1248 square miles would be needed. See Tables 5 and 6 of the *Project Independence Blueprint Final Task Force Report on Solar Energy*, at V-16, V-20 through V-22. Moreover, the study emphasizes that the data in the report are speculative and work needed to support them is just beginning. *Id.* at V-14.

for marine biomass farm contention lacks information on how such a large scale farm can come into reality. As the report itself explains, the Project Independence study in this regard is, at most, an effort to conceptualize the potential energy that might be available from biomass resources. It contemplated a ten-year research and development program, to be completed in 1985, to demonstrate the economic and technical feasibility of their utilization. *Project Independence Blueprint Final Task Force Report on Solar Energy*, at V-31 through V-39. At this point, we, of course, need not be concerned with whether such a program has in fact been undertaken. But even assuming this had been done, it would be years under the study's projections before a marine biomass farm could even be expected. Apart from any other consideration, a viable alternative must be an energy source which will be commercially available by 1987, the projected date of operation of the Allens Creek plant. The report itself does not offer the marine biomass farm as such an alternative.

I find contention No. VI unacceptable for litigation purposes for still another reason. The environmental review mandated by NEPA is subject to a rule of reason. It need not include review of alternatives which are only remote and speculative possibilities. *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 551 (1978), quoting *NRDC v. Morton*, 458 F.2d 827, 837-38 (D.C. Cir. 1972). Our own decisions have declared as much. See, e.g., *Public Service Electric and Gas Company* (Hope Creek Generating Station, Units 1 and 2), ALAB-518, 9 NRC 14, 38 (1979); cf. *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 48 (1978). This being so, I find unreasonable the decision to place petitioner's contention into litigation, a contention which by its own terms is clearly unrealistic.²

In this connection, it has been held that intervention as of right in judicial proceedings must be measured by a practical rather than technical yardstick. *U.S. v. Allegheny-Ludlum Industries, Inc.*, 517 F.2d 826, 841 (1975), cert. denied, 425 U.S. 944 (1976). Absent Commission declaration to the contrary, I perceive no reason for not applying a similar standard for deciding intervention petitions under our rules.

²At footnote 3 of his concurring opinion, Mr. Farrar agrees that NEPA does not require detailed review of environmental effects of alternatives that are only remote and speculative possibilities, but argues that that rule comes into play only after the petitioner is allowed to submit his evidence, not before. That argument assumes the answer to the matter at issue here. No support is given for it. Certainly, neither NEPA nor our intervention rule specifies that there must always be some evidentiary consideration before a proffered alternative, offering only remote and speculative possibilities, can be laid aside. On the other hand, since NEPA clearly does not require agency consideration of such alternatives, there is no compelling reason for viewing our intervention rule as requiring additional treatment of an alternative which its own terms show is remote and speculative at best.

My colleagues point to our *Grand Gulf*³ and related decisions as controlling the result they reach here. In *Grand Gulf* the contention was that “the alternatives of conserving electricity or utilizing other methods of producing energy have not been adequately considered.” Relying on the statement by petitioner’s counsel that he intended to introduce evidence that there were geothermal sources in the relevant service area, we held that the contention was adequate “given this particularization.” 6 AEC at 425-26.

Far from being essentially similar as viewed by my colleagues, that case and the case before us now are significantly different. In *Grand Gulf*, there was nothing in the geothermal source contention to suggest that given the proper geothermal resource in the area, a geothermal plant could not be a viable alternative. In that circumstance, we found the contention, as particularized, to be sufficient for purposes of the intervention rule. But here we have allegations which, even if taken as true, do not support the proposition for which they are advanced. Surely, our rule should not be viewed as requiring further consideration of an issue where proof of the allegations will meet with guaranteed failure.⁴

In this regard, I do not find the support that my colleagues do in the *Grossman* case, discussed in footnote 11 of the principal opinion. They seemingly cite that case as standing for the proposition that even a frivolous claim is entitled to be heard on its merits. They obtain more from the case than can be drawn from it. To begin with, *Grossman* did not involve the question of a person’s right to intervene in a proceeding involving other parties. Beyond that, the court’s opinion is so summary that one needs to

³*Mississippi Power and Light Company* (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423 (1973).

⁴My colleague, Mr. Farrar, suggests that “inefficiency” sometimes is the price paid to achieve fairness in giving litigants a chance to have their positions established for consideration on their merits. But the question of fairness is a false issue here. The only question present is whether the petitioner has set forth allegations which have at least a modicum of apparent substance as to warrant exploring them further. Where, as here, the allegations themselves show that success cannot be achieved, their further consideration would be no more than wasted effort. Such waste should not be compelled under the guise of fairness.

Both of my colleagues suggest that the burden imposed on others by requiring further proceedings on the allegations here can be limited through utilization of the summary disposition procedure provided by our rules. But even this procedure imposes substantial burdens, not only on the parties but on the licensing board and on us as well because of appeals which often result. Even more important is the impact the ruling of my colleagues will have in the future. It would force the acceptance of obviously invalid contentions made by petitioners who seek to intervene in our license proceedings, requiring the staff and others to waste valuable time and other scarce resources which, in going through the motions of defending against them, could otherwise be put to productive use.

Mr. Farrar also alludes to the grave safety consequences which might result in other cases if the proposition they advocate here is not followed. This raises another false issue. Such problems can be dealt with if and as they arise.

examine the underlying decisions of the Atomic Energy Commission to acquire an understanding of its import.

Grossman, a dentist, had made a claim with the Atomic Energy Commission for compensation under special provisions of the Atomic Energy Act. 107 U.S.P.Q. 181 (1955). He alleged that "he had delivered to officers of the United States the disclosures of several military weapons." *Ibid.* arise.

The disclosures were explained in detail, a portion of which was as follows:

The production of a bomb or poison by placing powdered Uranium in the crucible of a High Voltage High Frequency Electro Thermic Furnace, heating to the utmost temperature, allowing it to explode by its own heat, or by the addition of Potassium Nitrate and Zirconium Powder, or Zirconium Powder with Ammonium Nitrate, Gun Powder or other explosive powder or other means of explosion. The Oxide of Uranium or the Fluoride can be substituted for the metal. Tanks of Arsenic and Hydrogen, and Fluorine can be adjuvants along with Cyanogen or Hydro Cyanics.

Id. at 182.

Following a decision by the Commission rejecting his claim, Grossman appealed to the court. As part of his appeal he claimed that he had new evidence that the United States had used his "Atomic-Hydrogen-Thermonuclear Formulas In All Detonations At First Test, Hiroshima, Nagasaki, Bikini, Ivy and Others." 111 U.S.P.Q. 388 (1956). In detailing his new evidence, he explained, *inter alia*:

The ingredients of the formula given to the U.S.A. for the Atomic H Bombs, by Dr. Cornell Grossman were *All in the Radioactive Dust from the Nuclear Detonation* that took place on Bikini Atoll on March 1, 1954.

The Institute for Chemical Research of Kyoto University, in Kyoto, Japan, published a large monograph on the FALL OUT, and specifically named Dr. Grossman's ingredients.

...

If the U.S.A. did not use Dr. Grossman's formula, how did his ingredients come out of the bomb?

To maintain national security, Dr. Grossman made a detailed synopsis of the Japanese Kyoto Report and is mailing this synopsis to the U.S.A.E.C., Counsel, specifically pointing out each of Dr. Grossman's ingredients in the Fall Out, as shown by the Kyoto University tests.

For security reasons since this is the formula of the complete bomb it is not being mailed to this court.

Ibid. Acting on these assertions, the court remanded the matter to the Commission to afford Grossman the opportunity "to present his claim in full and to submit his evidence." See 246 F.2d at 709.

From this background, I cannot understand how my colleagues find support for their position in the court's *Grossman* decision. Because of the secrecy surrounding the development of the hydrogen bomb, there was no way for the court (or for that matter, anyone other than a few who were privy to such information) to judge the character of the new information claimed by Grossman. Moreover, the alleged information could not be disproven on the basis of Grossman's statements alone. In the circumstances, I find no special lesson to be learned from the court's decision.

If the ruling of my colleagues is correct, that it is necessitated by our intervention rule, I can only second the observation made by the Dickensian character Mr. Bumble:

If the law supposes that . . . the law is a ass, a idiot.

Dickens, *Oliver Twist*. I would prefer to believe the law to be otherwise.

Fortunately, my colleagues do not necessarily have the last word for the possibility of Commission review is still open. I am convinced that if the decision here is allowed to stand, the "reasonable specificity" provision of Section 2.714(b) of our intervention rule will become meaningless and the process necessary to fashion meaningful contentions for trial turned into a charade.⁵

⁵My colleagues note in Part II of the principal opinion that the Licensing Board rejected the biomass contention on the single ground that the petitioner offered no justification for his assertion of the environmental superiority of the marine biomass farm alternative. But as we have held before, we have the authority to uphold a decision of a licensing board on independent grounds. *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 42 (1977), *affirmed*, CLI-78-1, 7 NRC 1 (1978). Such grounds clearly exist here.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Oscar H. Paris
Glen O. Bright

In the Matters 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)**

April 11, 1980

The Licensing Board issues its second prehearing conference order in this operating license proceeding, explaining certain oral rulings and denying the applicants' motions (premised on the intervenors' failure to provide adequate answers to interrogatories) to dismiss one intervenor and to prohibit two others from participating in the litigation of certain of their contentions. As a sanction against earlier actions, the Board limits the first intervenor's presentation of a direct case to those contentions of which it is the sole sponsor.

SECOND PREHEARING CONFERENCE ORDER

On February 4, 1980, the Applicants in this operating license proceeding filed three separate motions. The first two sought to prohibit two of the intervenors, respectively (Susquehanna Environmental Advocates (SEA) and Environmental Coalition on Nuclear Power (ECNP)) from participating in the litigation of certain contentions which they had sponsored. The third motion sought to dismiss another intervenor, Citizens Against Nuclear Dangers (CAND), from this proceeding. Each of those intervenors filed a response opposing the motion against it. The NRC Staff supported the motion against CAND. It supported in part but opposed in part the relief sought against the other two intervenors.

Because of the severity of the sanctions requested and the effect on the proceeding which would ensue should we grant the motions in their entirety, we convened a prehearing conference to hear oral arguments on these motions, as well as to consider other matters (such as scheduling) which might be pertinent to the course of this proceeding. Order Setting Prehearing Conference, dated February 22, 1980 (published at 45 FR 13239 (February 28, 1980)). The conference took place at Wilkes-Barre, Pennsylvania on March 20-21, 1980 (Tr. 375-757). As directed, SEA, ECNP, and CAND, as well as the Applicants and Staff, each participated. The Commonwealth of Pennsylvania also did so. (Ms. Marsh, who was invited but not directed to participate, elected not to do so.)

All three of the Applicants' motions were founded upon asserted deficiencies in each of the responses of the intervenors to discovery orders previously issued by this Board. As we announced at the conference, we are denying the motions directed against SEA and ECNP, in part as a result of their commitments to provide supplemental answers to discovery requests by May 1, 1980. (Our Memorandum of March 27, 1980, outlined the scope of the material which should be provided by that date.) We also are denying the motion to dismiss CAND but are imposing certain alternative relief against that party (including a requirement to submit answers to certain discovery requests by May 1, 1980). Following is an explanation of these actions, as well as other rulings which we announced at the conference.

I

The motions directed against SEA and ECNP each were premised on an asserted failure of those parties to comply with a provision of our Memorandum and Order on Discovery Motions (II), LBP-79-31, 10 NRC 597 (October 30, 1979). In that Order, we relieved those parties of certain discovery obligations but directed them to respond to other discovery requests by December 14, 1979 (later extended to January 18, 1980). We then provided that, if "*any intervenor fails properly to respond in a timely fashion to [certain discovery requests], it will not be permitted to present any direct testimony on that contention .*" 10 NRC at 606. We also provided that we would not dismiss a contention solely because of the default of its sponsor but that such default could be taken into account by us in considering motions for summary disposition and, in addition, could serve as grounds for dismissal of the intervenor from the proceeding. *Id.* at 607.

SEA and ECNP each filed responses to the Applicants' interrogatories. The Applicants claimed that SEA's responses to the interrogatories on Contention 1, and ECNP's responses to the interrogatories on Contentions 1, 2, and 3, were inadequate. (SEA and ECNP were each sponsors or co-

sponsors of the contentions in question.) The Applicants claimed that, as a result, and in accord with our October 30 Order, SEA and ECNP should not be permitted to present a direct case on those contentions. In addition, reflecting our earlier ruling that we would not dismiss any contention solely for the default of its sponsor, the Applicants asserted that SEA and ECNP should each be prohibited from participating in any way in the litigation of the contentions as to which each had failed to properly answer interrogatories, including undertaking cross-examination on these contentions either on its own behalf or on behalf of others. The Applicants sought this additional sanction on the basis that SEA and ECNP had not made a good faith attempt to provide answers to the particular interrogatories and that, since intervenors "typically try to make their cases by cross-examination," prohibiting SEA and ECNP from introducing direct testimony "amounts to little, if any, sanction."

SEA and ECNP each disputed the assertion that they had not made good faith attempts to answer the interrogatories in question. The Staff believed that they had not adequately answered the interrogatories in question and should not be permitted to present a direct case on the particular contentions, but that the facts did not warrant imposition of the additional limitations on cross-examination sought by the Applicants.

1. Before turning to the question of the adequacy of SEA's and ECNP's responses to interrogatories, we first consider whether we have authority to limit a party's cross-examination on an issue by reason of that party's failure to respond adequately to discovery. In other words, assuming (although not deciding) that a worst-case default situation existed, could we grant the relief requested by the Applicants?

The Applicants had not addressed this question in their motions. But we posed it to the parties by our Memorandum of February 26, 1980. Our inquiry in this regard was prompted by certain statements of the Staff in its responses to the Applicants' motions, and by the holdings of the Appeal Board and Commission in *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 AEC 857 (1974); *reconsideration denied*, ALAB-252, 8 AEC 1175 (1975); *affirmed*, CLI-75-1, 1 NRC 1 (1975). Those decisions held that, in the particular case, it was error for the Licensing Board to have precluded an intervenor from conducting cross-examination on contentions raised by other intervenors or by the Board itself. We therefore presented the following question which was to be addressed at the prehearing conference (footnote omitted):

Given the holdings of the Appeal Board and Commission in *Prairie Island*, may a party which has defaulted in responding to discovery on an issue raised by it be given lesser participational rights (such as cross-examination) on that issue than a party which did not raise the issue? May that defaulting party be given less

participational rights on its own issue than it has on issues raised by others or the Board?

Although each of the intervenors (and the Commonwealth of Pennsylvania as well) opposed imposition of the sanctions sought by the Applicants, the Applicants and Staff were the only parties explicitly addressing this legal question. Both of them took the position that *Prairie Island* precluded the prohibition of cross-examination by an intervenor only as a matter of "general practice," that it did not deal with a situation where sanctions against a party were warranted, and accordingly that it did not prevent us from imposing the requested sanction (Tr. 393, 416). The Applicants referred to 10 CFR 2.707 ("Default") as authority for such sanctions, noting accurately that that rule had not been mentioned in the *Prairie Island* decisions. They cited as precedent the Appeal Board's decision in *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear 1), ALAB-224, 8 AEC 244 (1974).

In *Bailly*, the Licensing Board had required that the Intervenor's commence their cross-examination of the Applicant's and Staff's witnesses on a given date. The Intervenor's objected, because of a substantial delay in their receipt of certain information from the Staff which they had sought through discovery. (The Intervenor's had apparently already received much information through discovery from the Applicant.) Nonetheless, the Board ruled that they should initiate cross-examination on the specified date but would be given an opportunity to re-call and cross-examine the Applicant's and Staff's witnesses, to present new evidence, and to add new contentions after they had received and reviewed the documents sought from the Commission. If the intervenors declined to participate on the specified date, however, they would lose their opportunity to conduct cross-examination at a later date. 8 AEC at 250. The Intervenor's in fact did not cross-examine on the specified date and literally walked out of the hearing. They were accordingly barred from further cross-examination, and the Appeal Board upheld this sanction.

From *Bailly*, it is clear that a licensing board has authority in some circumstances to cut off a party's right to conduct cross-examination on its own contentions. But the *Bailly* facts are quite distinguishable from those with which we are faced here. In *Bailly*, the Licensing Board in effect established terms and conditions for the conduct of cross-examination. When those terms and conditions were not adhered to, the right to cross-examination was forfeited or waived. Here, however, the asserted default has nothing to do with the conduct of cross-examination. It arises from asserted deficiencies in responding to discovery — an entirely discreet element of trial preparation. Furthermore, the *Bailly* decision predated the

Prairie Island decisions. Under *Prairie Island*, restriction of an intervenor from cross-examination of witnesses on its own contention would produce rather anomolous results: it would not bar that intervenor from cross-examination on the contentions of others; and it would not restrict other intervenors from cross-examination on the defaulting intervenor's contentions.

As the Commission stressed in *Prairie Island*, meaningful public participation in NRC's adjudicatory process is of fundamental importance. In upholding the ruling of the Appeal Board permitting an intervenor to conduct cross-examination on contentions raised by other parties or by a licensing board, it observed that such participation "is a vital ingredient in the open and full consideration of licensing issues and in establishing public confidence in the sound discharge of the important duties which have been entrusted to us." CLI-75-1, *supra*, 1 NRC at 2. We, of course, have an obligation to assure the development of an adequate decisional record (10 CFR Part 2, Appendix A, V) and, in doing so, to permit "such cross-examination as may be required for full and true disclosure of the facts" (10 CFR 2.743(a)). Given the importance of cross-examination to the Commission's adjudicatory process, and given the importance of the issues we are called upon to decide, we would be most reluctant to restrict at the outset of a proceeding, prior to any evidentiary sessions, any party's right to conduct cross-examination. Particularly is this so in a case where, as here, the reason for the sought restriction (unlike in *Bailly*) bears no relationship to the party's conduct of cross-examination.

We need not decide whether a default in discovery obligations could ever justify restriction or elimination of a party's right to conduct cross-examination. Suffice it to say, we do not regard it appropriate here. For neither SEA nor ECNP can be said to have engaged in conduct amounting to default under 10 CFR 2.707. We turn now to that question.

2. As we previously stated, the Applicants premised their requests for sanctions against SEA and ECNP on the claim that those parties had not made a "good faith" attempt to provide answers to specified interrogatories. SEA and ECNP did, however, provide answers to some interrogatories to which no objections have been lodged. Moreover, in no instance did either one outrightly refuse to answer any interrogatories. What they did was to provide incomplete or ambiguous answers in a few instances or, in the case of SEA, to file a motion for a protective order without providing any justification other than statements we had earlier ruled to be inadequate to support such an order.

SEA and ECNP each claim that, for the most part, the objected-to responses to interrogatories reflect the paucity of funding available to them or the lack of an experienced legal counsel to draft the responses. We see no

reason for not accepting that claim. Moreover, bearing in mind the information in certain areas available to the intervenors, some of the incomplete or ambiguous answers must be deemed to be adequate. Finally, both SEA and ECNP expressed a willingness to supplement or reanswer interrogatories where earlier answers were determined to be inadequate.

It is true, however, that some of the answers provided by SEA and ECNP are inadequate. We discussed the deficiencies with the various parties at the prehearing conference. In view of our responsibility to assure the development of an adequate record, and in view of the expressed willingness of SEA and ECNP to supplement their answers, we determined that none of the sanctions requested by the Applicants should be imposed at this time. Because issuance of the FES by the Staff has again been delayed, until about mid-June, 1980 (Tr. 465), we determined that SEA and ECNP should be afforded additional time to supplement their earlier answers. At the conference, the parties agreed that the supplemented answers should be filed by May 1, 1980, and we concurred in that agreement (Tr. 548, 552-54, 585-88, 716). Our Memorandum of March 27, 1980 outlined the additional information which should be supplied by May 1 by SEA and ECNP.

II

In declining to impose the sanctions sought by the Applicants against SEA and ECNP, we were motivated in part by what appeared to us to be good faith attempts to respond to rather complex questions. In sharp contrast to those good faith attempts, CAND's responses to discovery requests represent the other side of the coin. Both in reply to the inquiries themselves¹ and to subsequent orders of this Board,² CAND's responses have thus far amounted to no more than blatant refusals to answer. CAND's filings have thus far provided no substantive answers to any inquiry, and they have also failed to include particularized, specific objections to questions which CAND has declined to answer. *See* CAND

¹Staff's First Round Discovery Requests, dated May 21, 1979; Applicants' First Set of Interrogatories, dated May 25, 1979. These requests were filed within the time frame established by our Special Prehearing Conference Order of March 6, 1979, LBP-79-6, 9 NRC 291, 327.

²Memorandum and Order on Scheduling and Discovery Motions, dated August 24, 1979; Memorandum and Order on Discovery Motions (II), LBP-79-31, 10 NRC 597 (October 30, 1979); Memorandum and Order denying CAND Petition and Motions, dated January 4, 1980; Order dated January 16, 1980 (and telegraphic communication of the substance of such Order, also dated January 16, 1980).

“response” or “petitions” or “motions” dated June 16, 1979, September 10, 1979, December 11, 1979, and January 11, 1980. See also CAND’s “motion” dated February 18, 1980, filed in response to the Applicants’ February 4, 1980 dismissal motion.

It was such that failure to comply with the Commission’s discovery requirements, as well as the orders of this Board, which undergirded the Applicants’ motion (which was supported by the NRC Staff) to dismiss CAND from the proceeding. The Applicants pointed out that CAND has had more than 8 months in which to respond to discovery requests, and it has disregarded 5 explicit Board orders without valid justification. The Staff added that it would be unfair to the other parties to allow CAND to ignore the Board’s authority without sanction, and that any sanction less than dismissal would be insufficient.

At the prehearing conference, the Applicants and Staff reiterated their belief that CAND was in default and deserved to be dismissed from the proceeding (Tr. 694, 698). The CAND spokesman provided a lengthy explanation of that group’s actions (Tr. 646B-692), in which he indicated, *inter alia*, that he had not fully comprehended NRC procedures nor fully understood this Board’s orders (Tr. 682, 684, 686). In response to questioning by the Board, he committed to “answer to the best of our ability the interrogatory questions prior to May 1st, if we are allowed to do so, in accordance with what has transpired yesterday and today, and we will take your advice to clarify” (Tr. 685). SEA supported CAND by pointing out that CAND was representing the citizens who live nearest the plant and that it was participating without benefit of counsel (Tr. 713-714).

We cannot disagree with the Applicants and Staff that CAND’s performance to date in this proceeding would, on the basis of rules, precedents, and practice, fully warrant its dismissal. We so advised CAND at the conference (Tr. 659). We also acknowledge that a burden will be placed on the Applicants and Staff if CAND is allowed to commence its response to discovery at this late date (see Tr. 694-698). In another time and place we probably would have dismissed CAND long ago; but as we indicated during the prehearing conference, our present thinking is influenced by the accident last year at TMI-2, only some 60 air miles from Susquehanna (see Tr. 563). We are inclined to be lenient with local citizen groups that seek to participate as representatives of concerned individuals who live or work near the facility, in spite of the stridency and artlessness of their pleadings. We also believe, in principle, that the record in a proceeding can be made more complete, and the Board assisted in reaching a fair and sound decision, by the full participation of interested citizens. Two environmental contentions, and part of another, are solely sponsored

by CAND. Dismissal of CAND would likely considerably reduce effective citizen participation in the resolution of those issues. Further, as indicated earlier, the evidentiary hearing has been delayed through no fault at all of any of the intervenors. Guided by these considerations and concerns, we decided to deny the Applicants' motion to dismiss CAND. But to reduce the burden which this ruling will impose upon the Applicants and Staff, and as a sanction against CAND's earlier behavior, we have limited its sponsorship of environmental contentions (and hence its presentation of a direct case) to those as to which it is the sole sponsor. See our Memorandum dated March 27, 1980.³

III

In the contentions which accompanied its intervention petition, ECNP originally sought to put into issue both the quantities of various isotopes which would be released throughout the uranium fuel cycle and the health effects of such releases. We ruled, in our Special Prehearing Conference Order of March 6, 1979, LBP-79-6, 9 NRC 291, that the quantities of all the isotopes named by ECNP except for Radon-222 were specified by Table S-3 of 10 CFR 51.20 and, therefore, only the quantities of Radon-222 could be litigated. We further ruled that the health effects of all of the isotope releases could be litigated. We reformulated ECNP's contention to accord with these rulings and accepted it as Contention 1. *Id.* at 297-98.

Subsequent to that Order, the Commission amended Table S-3 to specify that no quantity figure for Technetium-99 was included. See Table S-3 to 10 CFR 51.20, fn. 1, as amended, 44 FR 45362 (August 12, 1979). The new table explicitly provided that "estimates of Technetium-99 released from waste management or reprocessing activities...may be the subject of litigation in the individual licensing proceedings." *Ibid.* Tc-99 was one of the isotopes the quantities of releases of which ECNP wished to litigate. Therefore, at the prehearing conference, we asked the ECNP representative whether she still wished to litigate the quantities of Tc-99 released from the fuel cycle (in addition to the health effects of such releases). She said that she did (Tr. 537). Therefore, we directed that Contention 1 be revised to treat Tc-99 in a similar manner as Rn-222 and to permit litigation of the quantity, as well as health effects, of specified releases of Tc-99. As revised, the contention reads as follows:

³We accept in good faith CAND's commitment to respond fully to discovery requests on those contentions specified in our March 27, 1980 Memorandum. But we admonish CAND to read *carefully* and *thoughtfully* all of our future orders and memoranda, in an effort to avoid further misunderstandings.

1. A. The quantity of Radon-222 which will be released during the fuel-cycle required for the Susquehanna facility, and the quantity of Technetium-99 which will be released from waste management or reprocessing activities resulting from operation of the Susquehanna facility, have not been, but should be, adequately assessed. The radiological health effects of this radon and technetium should be estimated and these estimates factored into the cost-benefit balance for the operation of the plant.
- B. The radiological health effects of all isotopes other than Radon-222 and Technetium-99 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.

IV

Several other matters considered at the prehearing conference warrant some comment.

1. SEA filed a motion for a protective order with respect to its answering questions concerning Contention 1. We advised SEA that we regarded its motion as an adequate answer, inasmuch as it suggested that SEA had no current information relevant to Contention 1 (Tr. 586). SEA indicated that that view was mistaken and that it only had not been able to provide answers in the time frame available to it (Tr. 715-16). Nevertheless, its offer to provide further answers by May 1 appears satisfactory to us and obviates the need for a protective order.

In similar fashion, ECNP's various requests for protective orders are obviated by the discovery arrangements which we approved at the conference and outlined in our Memorandum of March 27, 1980.

2. With respect to the obligations to supplement answers by May 1, we advised the intervenors not to let that date slip by without response — that if unforeseen circumstances developed which foreclosed them from answering on time, they should request an extension (which, for "good cause" shown, we can grant). We also advised the intervenors that specific grounds must be advanced for any such extension, that we would be reluctant to grant further extensions absent a strong showing, and that, in any event, at least partial compliance by May 1 would be expected. See Tr. 552, 554-55, 585, 594, 710. We also stated that if the Applicants (or Staff) believe that

ECNP, SEA or CAND has not made a good faith effort to respond to interrogatories on the schedule we approved, they could file motions seeking appropriate relief (Tr. 712).

3. At the prehearing conference, we were asked whether persons who made limited appearances early in the proceeding would be permitted to make additional statements at a later date. We expressed the view that normally a person may make only one appearance but that, given the widely varying subjects to be considered at various stages of this proceeding, we would permit such additional statements, as long as they did not repeat what had been stated earlier by the person in question (Tr. 597, 602). We precluded statements by members of intervening groups on subjects related to contentions being litigated, unless the member had a different view from that being advanced by the group (Tr. 597-98).

4. Finally, SEA advised us that copies of the NRC Issuances and AEC Reports were not available in the Wilkes-Barre area (or anywhere else near the plant). Other intervenors confirmed that situation. We expressed our view that this situation was serious, inasmuch as we frequently cite the decisions reported therein as precedent for our rulings (Tr. 718). We asked the Staff to attempt to arrange for a set of reports to be placed in the local public document room (a local public library) — perhaps through the vehicle of an inter-library loan (Tr. 719). By letter dated April 3, 1980, the Staff advised that it had arranged to loan to the library in question a microfiche set of reports from 1 AEC through 9 NRC, and a microfiche reader. The Staff also agreed to loan the library a softbound set of 10 NRC through November, 1979, and to provide future issues as they become available. Also, the Staff reported that it had recently surveyed the local public document room and had updated and straightened the files. We find these actions of the Staff to be most helpful and in accord with the desire of the Commission (which we share) to make information relevant to its licensing proceedings readily available to persons in the locale of a facility. Again, we commend the Staff for its assistance in this matter.

For the foregoing reasons, the Applicants' motions to restrict the participation on certain contentions of SEA and ECNP, and their motion to dismiss CAND from the proceeding, are *denied*. CAND's sponsorship of environmental contentions is *limited* to contentions, or portions of contentions, of which it is the sole sponsor. The parties shall adhere to the

discovery arrangements outlined in this Order. SEA's and ECNP's motions for protective orders are *dismissed* as moot or as unnecessary in light of the further discovery measures we have approved.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Dr. Oscar H. Paris, Member

Charles Bechhoefer, Chairman

Mr. Bright did not participate in the consideration or disposition of the matters discussed in this Order.

Dated at Bethesda, Maryland,
this 11th day of April 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)

April 22, 1980

The Licensing Board grants an untimely petition for leave to intervene in this operating license proceeding, subject to the submission by petitioners of an adequate contention relating to emergency planning or radiological monitoring.

RULES OF PRACTICE: INTERVENTION PETITION

Apart from the matter of standing, untimely intervention petitions must be evaluated by a balancing of the five factors specified in 10 CFR 2.714(a).

RULES OF PRACTICE: INTERVENTION PETITION

Newly-acquired organizational existence does not constitute good cause for delay in seeking intervention. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1-4), ALAB-526, 9 NRC 122, 124 (1979).

RULES OF PRACTICE: INTERVENTION PETITION

New regulatory developments and the availability of new information may constitute good cause for delay in seeking intervention.

MEMORANDUM AND ORDER

On March 21, 1980, an untimely petition for leave to intervene in this operating license proceeding was filed jointly by two organizations, Zimmer Area Citizens (ZAC) and Zimmer Area Citizens of Kentucky (ZACK). ZAC represents certain Ohio citizens, whereas ZACK represents persons residing in Kentucky. The Applicants oppose the petition. The Staff would grant it, subject to the furnishing by ZAC-ZACK of an adequate contention. No other party has responded to the petition. Subject to ZAC-ZACK's furnishing at least one adequate contention, we agree with the Staff that the organization's intervention petition should be granted.

A. Before turning to the question of timeliness, we must first ascertain whether the petition before us demonstrates that other requirements for intervention have been satisfied. To be admitted, a petitioner must show that it has standing to intervene and that it is advancing at least one acceptable contention. 10 CFR 2.714(a) and (b).

As a basis for standing, ZAC and ZACK each claim that they have members residing from one to ten miles from the plant. Twelve individuals are listed, with their addresses. At least some, if not all, of these addresses are located within 10 miles of the plant (e.g., the addresses in California, Kentucky and New Richmond and Point Pleasant, Ohio). SER, NUREG-0528, Fig. 2-1. ZAC-ZACK claims, *inter alia*, that it is concerned about the health of its members, the safe operation of the facility, "and the effect upon petitioner's safety and property in the event of emergency, particularly in view of its members' homes being located within a ten-mile radius of the facility and its children attending schools within that radius." The Staff asserts that the organization has standing, and the Applicants advance no claim to the contrary. We agree that ZAC-ZACK has demonstrated its standing to participate in this proceeding. *Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), ALAB-549, 9 NRC 644, 646 (1979); *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (1979); *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-322, 3 NRC 328, 330 (1976).

With respect to the contention requirement, the ZAC-ZACK petition at this time includes no contentions, although it sets forth certain general "issues" with respect to which the organization seeks intervention. The order we are issuing requires the petitioner to satisfy the contention requirement as a pre-condition to its admission to the proceeding.¹

¹A petitioner seeking intervention after the normal time for submission of contentions should as a general rule include contentions in its petition. But in view of the normally bifurcated procedure envisaged by 10 CFR 2.714(b), we will permit ZAC-ZACK to file its contentions at a later date.

B. The primary issue raised by the intervention petition before us is its admitted tardiness. This proceeding commenced more than 4 years ago, and intervention petitions were required to be filed by October, 1975. 40 FR 43959, 43960 (September 24, 1975). In these circumstances, we may grant the petition in question only after balancing the five factors specified in 10 CFR 2.714(a).

1. The first factor is whether there is "good cause" for the delay. ZAC-ZACK advances three reasons for its tardiness. It claims (1) that its two constituent organizations were established shortly after the accident at Three Mile Island (which occurred in March, 1979) and hence that it was not in existence when a timely filing could have been submitted; (2) that it did not seek intervention until it achieved the degree of expertise "sufficient to be productive and assistive as a party"; and (3) that it "now seeks intervention in view of the regulatory revisions mandated by the experience and subsequent findings of the Three Mile Island accident." It emphasizes the latter point by stressing the "several new developments with respect to the standards governing evacuation and monitoring."

We agree with the Applicants that the first two reasons do not constitute adequate "good cause" for ZAC-ZACK's tardy filing. The Appeal Board has rejected newly-acquired organizational existence as an acceptable reason for delay in seeking intervention. *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1-4), ALAB-526, 9 NRC 122, 124 (1979); see also *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-582, 11 NRC 239 (February 22, 1980).² Moreover, ZAC and ZACK were organized almost a year ago and, presumably, might have sought intervention considerably earlier. And the organization's acquisition of expertise, while certainly to be encouraged, does not seem to us to constitute "good cause" for not earlier informing the Board and the parties of its intention to participate. To the extent this reason may be deemed to reflect a preoccupation with other matters (a position advanced by the Applicants), it is also clear that it cannot serve as "good cause" for tardiness. *Duke Power Company* (Cherokee Nuclear Station, Units 1, 2 and 3), ALAB-440, 6 NRC 642, 644 (1977).

The Applicants have misconstrued ZAC-ZACK's third expressed reason for tardiness — *i.e.*, new regulatory developments in areas such as emergency planning and monitoring. They claim that ZAC-ZACK could

²The *WPPS* decision also cited by the Applicants held only that deficiencies in organizational standing could not be cured retroactively so as to obviate the need for application of the 10 CFR 2.714(a) factors. *Washington Public Power Supply System* (WPPS Nuclear Project No. 2), LBP-79-7, 9 NRC 330 (1979). But it suggests that the "cure" may not be enough *per se* to establish "good cause" for lateness.

have intervened at the outset on issues such as emergency planning and monitoring, and they cite cases holding that a petitioner cannot sit back and, if it decides that its interests are not being adequately represented by existing parties, thereafter seek for that reason to enter the proceeding. See, e.g., *Cherokee*, ALAB-440, *supra* at 645; *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-583, 11 NRC at 447 (March 12, 1980). ZAC-ZACK has not advanced the adequacy or lack thereof of other parties' participation as a basis for "good cause" for delay but, rather, only to demonstrate that other parties will not adequately represent its interests — a showing which is relevant to another of the factors which must be balanced under 10 CFR 2.714(a) (see *infra*). Instead, what ZAC-ZACK's "good cause" argument amounts to is that the regulatory developments themselves constitute "good cause" for the late intervention.

We agree with the Staff that the recent regulatory developments in emergency planning (including evacuation) and radiological monitoring do constitute "good cause" for ZAC-ZACK's untimely filing. It is true, of course, that emergency planning and radiological monitoring could have been raised as issues back in 1975, when the proceeding commenced. Both Dr. Fankhauser and the City of Cincinnati did so. But, at the time, the relief which could be granted was far less than what it is today.

For example, as late as 1977 emergency planning would have extended no further from the facility than the low population zone (LPZ), which for this plant represents a radius of about 3 miles from the facility (SER, Section 2.1.2). *New England Power Company* (NEP, Units 1 and 2), ALAB-390, 5 NRC 733 (1977). Any plan for evacuation sought by an intervenor would have been limited to that area and hence would have excluded the residences of many, if not most, of the ZAC-ZACK members who have been identified to us, particularly those residing in Kentucky. The Commission at that time indicated, however, that it was in the process of reviewing these questions "as a priority matter." *Id.*, CLI-77-14, 5 NRC 1323 (1977)

About a year later, the Commission published proposed rules, which it directed be used on an interim basis, providing for emergency planning outside the LPZ in specified circumstances. 43 FR 37473 (August 23, 1978). In the same time frame, the Commission and the Environmental Protection Agency also undertook a joint study which recommended, *inter alia*, the establishment for emergency planning purposes (including evacuation) of Emergency Planning Zones (EPZs). NUREG-0396, December, 1978. The

Commission has endorsed the concepts in that report. 44 FR 61123 (October 23, 1979).³ And the Staff issued guidelines incorporating those concepts. NUREG-0610, September, 1979. The EPZs for airborne exposures would extend about 10 miles from the facility and for ingestion pathways about 50 miles. No special circumstances would have to be shown to justify emergency planning within such EPZs. But an applicant would be free to seek smaller zones, and any party could seek to justify larger zones, in appropriate circumstances.

In December, 1979, the Commission issued revised proposed amendments which superseded the 1978 interim proposals and sanctioned the guidelines in NUREG-0610 for interim use. 44 FR 75167, 75168 n. 1 (December 19, 1979). And just last month, as the Staff points out, applicants have been advised to comply, on an interim basis, with NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants."

In short, the criteria for emergency planning have undergone vast changes since the inception of this proceeding. The scope of relief which we can consider has expanded greatly. And while emergency planning issues could have been, and were, accepted back in 1975, those issues were necessarily narrower than those which we may entertain today. The most recent emergency planning regulatory developments occurred March, 1980, and the changes are still evolving. Similarly, according to the Staff, the NRC's radiological monitoring standards are also undergoing change, with the most recent revision being incorporated in a March 7, 1980 draft of NUREG-0660, "NRC Action Plans Developed as a Result of the TMI-2 Accident."⁴

The availability of new information appearing in previously unavailable documents has long been recognized as a valid reason for accepting new contentions or for admitting new intervenors. *Indiana and Michigan Electric Company* (Donald C. Cook Nuclear Plant, Units 1 and 2), CLI-72-25, 5 AEC 13, 14 (1972); see also *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 385-87 (1979); *id.*, ALAB-539, 9 NRC 422 (1979); *id.*, ALAB-544, 9 NRC 630 (1979); *accord*, *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, 4), LBP-78-4, 7 NRC 92, 97 (1978). The publication of significant changes in the criteria governing emergency planning and radiological monitoring in March, 1980 constitutes new

³EPA has also endorsed the EPZ concept. 45 FR 2893 (January 15, 1980).

⁴The Board has not had access to this draft. But we have no reason for questioning the Staff's description of it.

information on these subjects and provides "good cause" for the petitioner's delay until March, 1980 in its seeking intervention with respect to these matters.

We note that the ZAC-ZACK petition seeks intervention not only with respect to emergency planning and radiation monitoring, but also with regard to "the adequacy of research and expertise pertaining to thyroid disorder, or disease, leukemia, and other untoward effects, of and to children due to radiation release and radioactive effluents." ZAC-ZACK has provided no new information or other reason explaining its tardiness in seeking intervention on this subject, and we are not aware of any. We therefore find no "good cause" for ZAC-ZACK's tardiness on this matter. We accordingly balance the first factor in favor of admitting ZAC-ZACK, but only with respect to issues bearing on emergency planning or radiological monitoring.⁵

Notwithstanding this showing of "good cause" for the untimely filing, we must also consider and balance the other factors appearing in 10 CFR 2.714(a). But as strong a demonstration on those factors is not required as in the case where an adequate showing of "good cause" for lateness has not been made. *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 2), ALAB-384, 5 NRC 612, 616 (1977); *cf. Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975). We turn now to those other factors.

2. The second factor for consideration under 10 CFR 2.714(a) is the availability of other means whereby the petitioner's interest will be protected. This factor has been construed as bringing into consideration means other than participation as a party in the subject NRC proceeding whereby the petitioner itself can protect its interests. *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-292, 2 NRC 631, 647-48 (1975). ZAC-ZACK asserts generally that there are no other means for protecting its interests, although it does not address the issue in any detail.

The Applicants suggest that ZAC-ZACK might seek relief from other State or Federal agencies, inasmuch as "most" of the organization's concerns pertain to matters for which those agencies will assume primary responsibility. The Staff, on the other hand, states that it is not aware of any formal adjudicatory proceedings which would afford petitioners the opportunity to participate in a hearing on the issues of emergency planning and radiological monitoring, "although other agencies are considering issues relating to emergency planning."

⁵If ZAC-ZACK becomes a party, it will of course have the same right as other parties to raise additional issues based on new information.

It does not appear to us that the entire scope of relief available in this proceeding could be obtained by ZAC-ZACK before any other governmental agency or group of agencies. The Applicants do not appear to claim otherwise, asserting only that "most" of the relief would be available elsewhere. The availability of only partial relief, however, does not satisfy the condition that there be means available to protect the petitioner's interest; for some part of that interest *per force* would not be protected. We find, therefore, that there are no other means available whereby ZAC-ZACK's interest will be adequately protected, and we balance this factor in favor of ZAC-ZACK's admission to this proceeding.

3. The third factor under 10 CFR 2.714(a) is the extent to which the petitioner's participation may be expected to assist in developing a sound record. Both the Applicants and Staff agree that the ZAC-ZACK petition does not indicate whether the organization has any special expertise, either through its members or other qualified experts, which could be of assistance in developing a sound record. Indeed, the Applicants refer to ZAC-ZACK's assertions (made in connection with its "good cause for delay" arguments) that its expertise is developing, and they maintain that the organization's single year of existence is not sufficient for ZAC-ZACK to have developed expertise. The Staff, however, notes that some members of ZAC-ZACK (who reside near the plant) may possess some practical working knowledge as to transportation and traffic conditions which may be relevant to emergency planning.

In our view, 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 the organization's contentions encompass such matters. This is particularly true with respect to members living in Kentucky, an area which does not appear to be of primary interest to the other private party intervenors in this proceeding (although it is of concern to the City of Mentor and the Commonwealth of Kentucky). Absent any contentions at this time, however, we are unable to accord much weight to ZAC-ZACK's showing on this factor, and we accordingly balance it (although not strongly so) against admission of the organization.

4. The fourth factor we must consider is the extent to which the petitioner's interest will be represented by existing parties. Specific contentions concerning emergency planning and monitoring have, of course, been sponsored by Dr. Fankhauser and the City of Cincinnati. However, these parties represent only Ohio residents. The City of Mentor, Kentucky, and the Commonwealth of Kentucky are also participating with respect to these subjects, but they did not (and were not required to) advance any specific contentions in this regard. ZAC-ZACK claims that these other parties will not adequately represent the totality of its interests,

particularly with respect to the interests of pre-school and school age children residing within ten miles of the facility in both Kentucky and Ohio. The Staff agrees with this assessment. The Applicants claim that ZAC-ZACK's interests will be adequately represented, not only by existing intervenors (including the City of Mentor and the Commonwealth of Kentucky) but also by the NRC Staff.

We agree with ZAC-ZACK and the NRC Staff that the interests represented by the organization diverge in some measure from those represented by other participants, considered either singly or in totality. Particularly is this so with respect to interested governmental bodies, whose interests are "presumably broader" than those of any private party. *West Valley*, CLI-75-4, *supra*, 1 NRC at 275. Nevertheless, it appears to us that ZAC-ZACK's Ohio interests in emergency planning and monitoring will likely be adequately represented by existing parties, which have advanced several contentions in these areas. On the other hand, ZAC-ZACK's Kentucky interests do not appear to be adequately represented. The existing Kentucky participants are both doing so pursuant to (10 CFR 2.715(c), and neither has sponsored any contentions on emergency planning or monitoring (although they have indicated their intent to participate on these subjects). That being so, we cannot say that all of ZAC-ZACK's interests will be represented by existing parties, and we balance this factor in ZAC-ZACK's favor. We expect, however, that ZAC-ZACK will submit at least one acceptable contention bearing upon emergency planning or radiological monitoring in Kentucky, and our balancing of this factor in ZAC-ZACK's favor is subject to its doing so.

5. The fifth and final factor under 10 CFR 2.714(a) is the extent to which the petitioner's participation will broaden the issues or delay the proceeding. ZAC-ZACK claims that its participation will not have these effects, inasmuch as it "accepts that it must take the proceedings as it now finds them." See *West Valley*, CLI-75-4, *supra*, 1 NRC at 276. ZAC-ZACK also points out that the hearings pertaining to evacuation and monitoring have been recessed pending the development of new criteria in these areas.

The Applicants perceive that some delay could result from ZAC-ZACK's participation, owing to the possible need for additional pleadings, additional prehearing conferences, additional time for evidentiary hearings, additional cross-examination, and possibly evidence-in-chief. On the other hand, the Staff indicates that little, if any, delay should occur. It does not expect the hearings on emergency planning or radiological monitoring to be held until late fall 1980 or early 1981, and it expects that no more than a week's delay would result from ZAC-ZACK's presentation of its own evidence (if it chooses to do so) or from its cross-examination. The Staff asserts that a delay of this magnitude does not substantially prejudice the

Applicants' rights. It also points out that we have authority to control any potential delay resulting from the discovery process. Balancing the rights of the Applicants and ZAC-ZACK in regard to delay, the Staff concludes that the interests of the petitioners should prevail.

We agree. Our order permitting ZAC-ZACK to participate will provide that it must take the proceeding as it finds it and limit its sponsorship of contentions to those subjects as to which it has shown "good cause" for delay and which have not as yet been scheduled for hearing — *i.e.*, emergency planning and radiological monitoring. With this limitation, the issues before us will not be broadened (although their scope may be somewhat expanded). We will exercise care in avoiding duplicative testimony or cross-examination, so that delay should be minimal. 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. 10 CFR 2.715a.

It should be remembered that the same Three Mile Island accident which engendered the formation of ZAC and ZACK also created a hiatus in this proceeding. Issues such as those on which ZAC-ZACK seeks to participate have had to be substantially delayed to accommodate TMI-inspired developments. Though ZAC-ZACK's tardiness under normal circumstances might have proved fatal, in the present situation we cannot close our eyes to the realities of nuclear licensing in the era of TMI and the concomitant obligation we face to provide every reasonable opportunity to develop a complete record on significant safety questions.

Given the steps we are taking to minimize delay, the small effect on the progress of this proceeding which can foreseeably result from the action we are here taking is far outweighed by the potential for achieving a more satisfactory answer to the serious questions which we face in this proceeding.

6. In sum, upon balancing the five factors, we find "good cause" for the untimely filing, to the extent ZAC-ZACK wishes to raise issues concerning emergency planning and radiological monitoring; no other means available whereby ZAC-ZACK's interests will be adequately protected; no other party that will adequately represent ZAC-ZACK's Kentucky interests; and no broadening of the issues or significant delay likely to result from the admission of ZAC-ZACK on the terms we have provided. Although ZAC-ZACK has not yet demonstrated that its participation will assist in developing a sound record, its submission of contentions and its representation of certain interests diverse from those of other participants could lead to that result. In those circumstances, and subject to ZAC-ZACK's submission of at least one adequate contention, we find the balance of the factors to favor admission of the petitioner as a party to this proceeding.

C. The Staff would afford ZAC-ZACK 30 days within which to submit contentions. Following such submission, other parties would have to be afforded time to respond to the contentions. A substantial period would thus have to elapse before we could approve contentions (assuming they are adequate) and initiate discovery. In order to alleviate any delay, we would urge the Applicants and Staff to attempt to reach agreement with ZAC-ZACK as to the acceptability of contentions. To this end, we direct ZAC-ZACK to provide copies of proposed contentions to the Applicants and Staff (and other parties if it wishes) within 20 days of service of this Order. (We repeat that at least one contention must bear upon emergency planning or radiation monitoring in Kentucky.) The Applicants and Staff and ZAC-ZACK shall then try and reach agreement on contentions and shall report to us within 20 days of the service of the proposals the results of such negotiations (and their positions on proposed contentions, to the extent they cannot reach agreement). Thereafter, we will issue an order indicating which contentions, if any, are acceptable. Formal discovery shall commence with our acceptance of the contentions, except that, if there is agreement of the parties on any particular contentions, discovery may commence as of the time such agreement is communicated to us. (Informal discovery may commence at any time.)

In our Memorandum and Order of August 7, 1979, LBP-79-22, 10 NRC 213, we established a discovery schedule for certain contentions which provides, *inter alia*, that discovery requests must be submitted within 10 days of service of the Staff's recommendations for monitoring and emergency planning arising from the TMI accident. Responses were to be submitted within 15 days after service of a discovery request. 10 NRC at 218. The same schedule will govern ZAC-ZACK's contentions. However, to the extent discovery requests are filed earlier than the latest date indicated above, they should provide at least 30 days for response (to the extent that the response date does not extend beyond the latest date for response permitted by our August 7, 1979 schedule).

D. In its petition, ZAC-ZACK designated 12 individuals as "its representatives" (two of whom apparently are attorneys) and requested that all papers be served upon one of those attorneys. We are not certain whether the 12 individuals were listed for representation purposes or as part of ZAC-ZACK's demonstration of standing to intervene. In any event, the Applicants and Staff both construe the petition as requesting that any or all of the named individuals be permitted to appear as ZAC-ZACK's representative in the proceeding. The Applicants point out that this arrangement would not be in accord with our Memorandum and Order Concerning Intervenors' Requests to Utilize Lay Representatives, LBP-79-

17, 9 NRC 723 (1979). The Staff asks us to provide that ZAC-ZACK may only appear and be represented by its counsel.

In its participation in this proceeding, ZAC-ZACK will be bound by the same terms as are imposed on other intervenors by LBP-79-17. Thus, ZAC-ZACK will normally not be permitted to use non-attorney members in the presentation of its own case, or in the cross-examination of other parties' witnesses on issues raised by ZAC-ZACK (except as permitted by 10 CFR 2.733).⁶ But although we encourage ZAC-ZACK to have an attorney present at all times, we will permit designated non-attorney members of the organization to represent ZAC-ZACK's interests in issues raised by other parties or by the Board itself. 9 NRC at 725.

Subject to its furnishing at least one adequate contention, ZAC-ZACK's petition for leave to intervene is *granted*.

This Order is subject to appeal pursuant to the terms of 10 CFR 2.714a. It will become final for purposes of appeal, however, only following our issuance of a further order accepting or rejecting contentions. *Detroit Edison Company* (Greenwood Energy Center, Units 2 and 3), ALAB-472, 7 NRC 570, 571 (1978).

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman

Mr. Bright, who is recovering from surgery following an accident, did not participate in the consideration or disposition of the matters discussed herein.

Dated at Bethesda, Maryland,
this 22nd day of April 1980.

⁶Each of the attorneys whom ZAC-ZACK intends to use as its representative should file a notice of appearance, as provided by 10 CFR 2.713(a).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**Docket No. 50-289
50-320**

**METROPOLITAN EDISON
COMPANY
(Three Mile Island Nuclear
Station, Units 1 and 2)**

April 7, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 that requested certain actions with respect to radiation monitoring and emergency planning at the site of the Three Mile Island Nuclear Station.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

General allegations that a particular action is needed or certain objectives should be met are, without more, insufficient to provide an adequate basis for relief under 10 CFR 2.206.³

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a petition of February 25, 1980, Robert Gary of Philadelphia, Pennsylvania, requested pursuant to 10 CFR 2.206 that the Commission take certain actions with respect to radiation monitoring and emergency planning at the site of the Three Mile Island Nuclear Station. Specifically, Mr. Gary requests three basic actions:

1. Institution of a monitoring program that would include collection and sampling of various domestic animals' thyroids, planting of a certain variety of spiderwort, and collection and sampling of the flesh, bones, and teeth of various wild animals;
2. Double placement of thermoluminescent dosimeters to be read on a "blind" basis by two independent laboratories; and

3. Preparation and dissemination of an evacuation plan "before any further planned criticality of fuel in the Unit 2 reactor vessel."

As the "specification of facts that constitute the basis of this request," Mr. Gary restates some of the history of the Three Mile Island accident and alleges that "the health effects to be expected from the releases of the noble gases from the stack vent are more severe than presently recognized by the NRC." Petition at 7. Mr. Gary apparently believes that, without his special monitoring program, the public will not have "an accurate or complete official record" kept of releases from operation of the Three Mile Island units. Therefore, Mr. Gary reasons, the public will be unable to make "informed decisions about where to situate themselves and/or reside" and will be precluded in the future from "being able to put on successful litigation to receive compensation for radiogenic harms." Petition at 8. Finally, Mr. Gary contends that the public is harmed by "having to live under circumstances such that if a major radiological release which would call for immediate evacuation of the area were to occur, there is no . . . feasible plan whereby the area could be evacuated." *Id.*

Mr. Gary does not show why existing radiation monitoring and plans for emergency preparedness are inadequate nor does he identify how his requested actions will satisfy his particular concerns. As required under 10 CFR 2.206(a), it is incumbent upon Mr. Gary to establish facts or reasons that provide a basis for taking particular action. General allegations that a particular action is needed or certain objectives should be met are, without more, insufficient to provide an adequate basis for relief under 10 CFR 2.206. See *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), Commission Memorandum and Order at 8 (Docket Nos. 50-546 and 50-547, March 13, 1980). In considering a petition under 10 CFR 2.206, the Director of Nuclear Reactor Regulation is not required "to accord presumptive validity to every assertion of fact" or to surmise the underlying facts or reasons that form the basis of the petition. See *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear 1), CLI-78-7, 7 NRC 429 (1978), *aff'd sub nom. Porter County Chapter of the Izaak Walton League v. NRC*, 606 F.2d 1363 (D.C. Cir. 1979).

Mr. Gary makes his request for a special monitoring program as part of any action "taken for purposes of the cleanup of Unit 2." Petition at 1. The staff notes that radiological environmental monitoring capabilities have been provided by the NRC, the Environmental Protection Agency (EPA), the Commonwealth of Pennsylvania and the licensee. These capabilities are described in NUREG-0662, "Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," a copy of which has been previously provided to Mr. Gary. This monitoring program would also be used during the decontamination of the reactor

building atmosphere, and the staff believes that these monitoring programs would be adequate for this phase of decontamination operations. To the extent that additional or different capabilities are required for future operations, the Commission will ensure that appropriate capabilities are provided. Mr. Gary provides no reasons why his particular program should be instituted now or in the future. Mr. Gary's petition only describes the measures that he believes should be taken and generally alleges that there is a need for adequate monitoring. In the absence of a particular showing that, for example, current monitoring efforts are inadequate or that Mr. Gary's proposal has some special advantages, I see no purpose to instituting a proceeding to consider Mr. Gary's proposed monitoring plan.

As to emergency preparedness, Mr. Gary raises particularly the issue of evacuation of the area around the Three Mile Island site. Specifically, Mr. Gary requests that an adequate evacuation plan be prepared and disseminated prior to "any further planned criticality of fuel in the Unit 2 reactor vessel." The fuel in the Unit 2 reactor is not critical. "Planned criticality" of the reactor implies resumed operation of Unit 2, and operation of Unit 2 would not resume, if at all, until Unit 2 had been repaired. The operating authority for the Unit 2 reactor was formally suspended in July 1979. Order for Modification of License, *published in* 44 FR 45271 (August 1, 1979). The current provisions for emergency preparedness for Unit 2 generally meet the Commission's current emergency planning requirements. However, the Commission has taken significant steps in recent months to upgrade the quality and scope of emergency planning at all nuclear reactor sites. Plans for TMI-2 will necessarily be revised in the future to conform to the Commission's requirements. Although evacuation of the population is the responsibility of State and local officials, the NRC has proposed a revision to its rules on emergency planning to require NRC concurrence in State and local government response plans. *See* 44 FR 75167 (December 19, 1979). As described in the Memorandum of Understanding between NRC and the Federal Emergency Management Agency (FEMA), 45 FR 5847 (January 24, 1980), FEMA will take the lead in reviewing the adequacy of State and local emergency plans. In January 1980, NRC and FEMA jointly issued for interim use and comment "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (NUREG-0654/FEMA-REP-1). Mr. Gary has been provided a copy of this document with this decision. One of the objectives of these criteria (*see* at 42) is similar to Mr. Gary's concern: that information concerning emergency preparedness is available and disseminated to the public. While the staff cannot say that the State, local and licensee plans approved for TMI-2 will track Mr. Gary's proposal

exactly (e.g., that plans will be exactly 50 pages in length or that Educational Testing Service will be consulted on the vocabulary used in the written plans), the Commission intends to assure, prior to any planned operation of the Unit 2 reactor, that adequate emergency response plans exist for TMI-2 and are appropriately distributed. The current focus of efforts to improve emergency preparedness at the Three Mile Island site concerns specifically Unit 1. The Commission's Order and Notice of Hearing, CLI-79-8, 10 NRC 141 (August 9, 1979), in the Three Mile Island Unit 1 restart proceeding requires the Metropolitan Edison to improve its emergency preparedness capability. As described in the attached portions of the staff's "Status Report on the Evaluation of Licensee's Compliance with the NRC Order dated August 9, 1979" (Docket No. 50-289, January 11, 1980), Metropolitan Edison Company has submitted an upgraded emergency plan that conforms to Regulatory Guide 1.101 (Rev. 1, March 1977) and NUREG-0610, "Draft Emergency Action Level Guidelines for Nuclear Power Plants" (September 1979). Included in the appendices to Metropolitan Edison's plans are supporting emergency plans for the Commonwealth of Pennsylvania and for counties near the Three Mile Island site. The Commonwealth's and local governments' plans provide for protective actions, including evacuation, in the event of a radiological emergency. The Pennsylvania Emergency Management Agency is the lead State agency for the coordination of radiological emergency response plans. The State and local plans are under review by the Regional Advisory Committee, consisting of FEMA, NRC, EPA, the U.S. Department of Transportation and the Food and Drug Administration. In view of the foregoing, I do not intend to institute another proceeding on emergency preparedness based on Mr. Gary's particular request.¹

Accordingly, Robert Gary's petition of February 25, 1980, is denied. 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 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 7th day of April 1980.

¹The staff also notes that emergency planning contentions have been admitted in the hearing on Unit 1's restart. See Third and Fourth Special Prehearing Conference Orders (Docket No. 50-289, January 25 and February 29, 1980).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-224

**THE UNIVERSITY OF
CALIFORNIA AT BERKELEY
(TRIGA Reactor)**

April 14, 1980

The Director of Nuclear Reactor Regulation denies a petition filed under 10 CFR 2.206 of the Commission's regulations requesting the Director to suspend all activities of the TRIGA reactor at Etcheverry Hall at the University of California, Berkeley, to remove all radioactive material from the site and to permanently revoke the operating license because of allegations of an increased threat to the public health and safety due to inadequate seismic design of the reactor.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated December 11, 1979, the Friends of the Earth (FOE) requested, pursuant to 10 CFR 2.206 of the Commission's regulations, that the Nuclear Regulatory Commission: (1) suspend all activities under Docket No. 50-224 at Etcheverry Hall, University of California at Berkeley (UCB), (2) order the removal of all radioactive materials from the site, (3) permanently revoke the operating license under Docket No. 50-224, and (4) hold public hearings before any reactor operation is resumed. Receipt of the petition was acknowledged by letter dated January 10, 1980.

The bases for the FOE's requested action were contentions that the seismic design of the reactor at UCB was inadequate based on current seismological data and analysis, the potential threat to public health and safety is greater than previously analyzed and that current evacuation plans are inadequate.

After consideration of the information presented by FOE, I have determined, for the reasons set forth below and in the attached documents, that the requests for action should be denied.

In the January 13, 1965 original Hazards Analysis (Enclosure 1) under Site Evaluation (page 3), the staff documented its evaluation of the affects of the loss of core cooling by a rupture of the reactor pool along with the rupture of a large number of fuel elements by mechanical damage and also the failure of the walls and ceiling of the reactor room. The staff concluded that the exposure to the public is within 10 CFR Part 100 guidelines and therefore acceptable. More recently, on September 28, 1979, the NRC issued a Safety Evaluation and Environmental Impact Appraisal supporting Amendment No. 2 (Enclosure 2). This amendment authorizes continuing operation of the UCB TRIGA Mark III nuclear research reactor. This Safety Evaluation documents the staff's analysis of the design basis accident; a major seismic event leading to a complete loss of cooling water, core disruption and breach of the building walls (see pages 3 and 4 of Enclosure 2). The staff concluded that the radiological consequences in the near vicinity of the reactor building are of the order of the limits of 10 CFR Part 20 (Normal Operational Limits) and are only a small fraction of the limits 10 CFR Part 100 (Accident Analysis Limits for Siting Reactors).

In the Emergency Planning section of the Safety Evaluation (see pages 5 and 6 of Enclosure 2), the review and acceptance of the UCB plan currently in effect is documented. However, the Commission is currently upgrading the requirements for Emergency Planning by amending 10 CFR Part 50, Sections 50.33, 50.47, and 50.54 and Appendix E as a result of our review of the Three Mile Island accident. When this rulemaking process is completed, the licensees of all reactors will be required to revise their Emergency Plans accordingly.

In conclusion, my review of the allegations contained in your petition dated December 11, 1979, finds that since (1) the current design basis accident for UCB assumes a complete loss of cooling water, core disruption and breach of the building walls and results in acceptable radiological consequences and (2) the current approved Emergency Plan for UCB meets our requirements, the University of California TRIGA Mark III reactor does not pose any undue threat to the public health and safety. Therefore, I find under 10 CFR Part 2, Section 2.206, that no proceeding on the issues raised in your petition will be instituted in whole or in part.

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. A copy of this decision will also be filed with the Secretary for review by the Commission in accordance with 10 CFR 2.206(c) of the regulations of the Commission. 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 the review of this decision within that time.

**FOR THE NUCLEAR
REGULATORY COMMISSION**

**Harold R. Denton, Director
Office of Nuclear Reactor
Regulation**

**Dated at Bethesda, Maryland
this 14th day of April 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-320

METROPOLITAN EDISON
COMPANY
(Three Mile Island Nuclear
Station, Unit 2)

April 16, 1980

The Director of Nuclear Reactor Regulation denies in part and grants in part two petitions filed by the Environmental Coalition on Nuclear Power that requested public hearings and other relief with respect to Unit 2 of the Three Mile Island Nuclear Station.

ATOMIC ENERGY ACT: RIGHT TO HEARING

A petitioner under 10 CFR 2.206 is not legally entitled to a hearing on his or her petition.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated April 27, 1979, Dr. Chauncey Kepford requested on behalf of the Environmental Coalition on Nuclear Power (ECNP) that the Director of Nuclear Reactor Regulation institute public hearings prior to any alteration of the "experimental and operational status" of the Three Mile Island Unit 2 (TMI-2) reactor. Dr. Kepford filed a supplemental petition dated May 16, 1979, which expanded the scope of ECNP's original request for relief. Notice was published in the *Federal Register*, 44 FR 40986 (1979), that ECNP's petitions were being considered under 10 CFR 2.206.

The bases for ECNP's petitions concern the status of the damaged Unit 2 reactor in the aftermath of the accident of March 28, 1979, at Three Mile Island. ECNP's April 27th petition was directed primarily at the conversation to natural convective circulation cooling of the damaged reactor core, although ECNP apparently intended its petition to extend to all future

actions of the Commission concerning TMI-2. The May 16th petition cited additional concerns regarding radiation monitoring and waste disposal.

ECNP's petitions were styled as requests for "emergency action." To the extent that the petitions requested could be said to require "emergency action," (e.g., to prevent the unassessed release of contaminated water) the staff believes that the Commission has taken action essentially along the course ECNP requested. This decision addresses the requests for relief found in ECNP's two petitions. For the reasons stated in this decision, ECNP's petitions have been granted in part and are denied in part.

THE APRIL 27TH PETITION

The main thrust of the April 27th petition is ECNP's request that "a public hearing be held prior to any further experimentation at TMI-2" (Petition at 4). While "experimentation" is not explicitly defined in the petition, ECNP was concerned at the time about the transition to natural circulation to cool the damaged reactor core. On April 27, 1979, the same day ECNP submitted its petition, the transition to natural circulation was safely performed. See "Abnormal Occurrence Event; Nuclear Accident at Three Mile Island." 44 FR 45803, 45807 (1979). Prior to the initiation of the transition, the staff had evaluated the proposal to cool the damaged reactor core by natural convective circulation and had concluded that the transition could be accomplished with minimal risk to public health and safety. The staff's evaluation was reported in NUREG-0557. "Evaluation of Long-Term Post-Accident Core Cooling of the Three Mile Island Unit 2." In the proceeding — to which ECNP is a party — being held on the restart of Three Mile Island Unit 1, the Board has admitted contentions regarding the adequacy of natural convective circulation cooling. First Special Prehearing Conference Order at 20. (Docket No. 50-289, December 8, 1979) (UCS contentions 1 and 2).

ECNP apparently intended its demand for public hearings prior to further "experimentation" at TMI-2 to extend beyond the transition to natural convective circulation cooling of the core. In assessing this request, the staff can only assume that, by the term "experimentation," ECNP means those actions requiring the Commission's formal approval, *i.e.*, license amendments and orders of the Commission.¹ Of course, the Atomic Energy Act of 1954, as amended, requires the Commission to grant a hearing upon the request of any person whose interest may be affected in

¹The Commission's regulations contemplate that certain changes in a facility or in procedures and certain tests or experiments may be conducted by the licensee without the Commission's prior approval. Such changes, tests, or experiments may not involve and unreviewed safety question or a change in technical specifications. 10 CFR 50.59(a)(1).

any proceeding "for the granting, suspending, revoking or amending of any license." Section 189a., 42 U.S.C. 2239(a). Although the Commission must grant a hearing upon the demand of any person who has an interest affected by a proceeding to grant, suspend, revoke or amend a license, every such proposed action does not require notice and hearing prior to the effectiveness of the proposed action.² In taking action at its own initiative, the Commission has the authority — indeed, the responsibility — to order the modification, suspension or revocation of a license when public health, safety, and interest so requires. 10 CFR 2.202(f), 2.204. *See Nuclear Engineering Company, Inc., CLI-79-6, 9 NRC 673 (1979)*. Although administrative procedure normally contemplates the holding of required hearings prior to the effectiveness of proposed actions, it is inappropriate, in view of the potential need for the Commission to take emergency action, to promise unequivocally in response to ECNP's petition that hearings will be held before any action is taken at TMI-2.³

The Commission has offered, in fact, the opportunity to request a hearing in connection with various orders related to the Three Mile Island reactors.⁴ To the extent that ECNP believes it has interest affected by various Commission proceedings, it is incumbent upon ECNP to request a hearing under applicable orders or other notices.

In connection with any further "experimentation" at TMI-2, ECNP requested that a "Safety Evaluation report" be made available prior to such further "experimentation." Of course, the Commission must establish a technical basis for issuing an order or for issuing a license amendment requested by a licensee. *See e.g., 10 CFR 2.105(b), 2.106(b), 2.202(a)(1)*. The Commission has in fact made available safety evaluation reports and environmental evaluations which have accompanied major proposed actions. All future safety evaluation reports or other documents which establish the technical bases for proposed actions will be publicly available.

²See Sections 186b, and 189a, of the Atomic Energy Act, 42 U.S.C. 2236(b) and 2239(a); 10 CFR 2.202(f) and 2.204.

³Under Section 189a. of the Atomic Energy Act the holding of hearings is mandatory only on applications for a construction permit under Section 103, 104b. or 104c. Of course, persons who demand a hearing as a matter of right in proceedings must establish that they are adversely affected by the proposed action. *Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2)*, Commission Memorandum and Order (Docket Nos. 50-546 and 50-547, March 13, 1980); *Portland General Electric Company (Pebble Springs Nuclear Plant, Units 1 and 2)*, CLI-76-27, 4 NRC 610 (1976); *Nuclear Engineering Company (Sheffield Low-Level Radioactive Waste Disposal Site)*, ALAB-473, 7 NRC 737 (1978).

⁴See Order (February 11, 1980), published in 45 F.R. 11282 (1980); Order for Modification of License (October 18, 1979), published in 44 F.R. 61277 (1979); Order and Notice of Hearing, CLI-79-8, 10 NRC 141 (1979) (TMI-1 Restart Proceeding). ECNP has intervened in the Unit 1 restart proceeding, and in a request dated March 15, 1980, has asked for a hearing on the Order of February 11, 1980.

ECNP also requests that it "be informed prior to any further experimentation or change of licensed procedures or other alteration of the facility which may affect the health and safety of the public." Dr. Kepford, who filed the petition on behalf of ECNP, has been on the distribution list for orders and other formal actions of the Commission with respect to TMI-2. Orders or other relevant notices have also been published in the *Federal Register*. To the extent that the public health, safety or interest requires Commission Orders to immediately effective, ECNP would of course not receive notice prior to the effectiveness of such actions, nor is ECNP entitled to such notice as a matter of law.

Prior to further "experimentation" at TMI-2, ECNP asks that the public be evacuated from areas that would be affected "should the experiment fail and control of the reactor be lost." In the first instance, it should be noted that the Commission does not have the authority to order evacuation of the population surrounding a reactor site. This authority rests with responsible State and local officials. The Commission advises these officials as appropriate in emergency circumstances. In all events, ECNP simply presents no basis for this request. The TMI-2 reactor is in a stable state, and authorized activities at the site do not involve risks to the public that warrant evacuation.

In its fifth request for relief in the April 27th petition, ECNP asks that the Commission deploy "live, real-time" radiation detectors in a 40 mile radius around the Three Mile Island site. ECNP provides no reasons for instituting such a program. Radiological environmental monitoring conducted by the licensee and by State and Federal agencies in the area surrounding the Three Mile Island site is described in the "Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere" (NUREG-0662, March 1980). To the extent that additional or different capabilities are required in the future, particularly for future decontamination operations, the Commission will ensure that appropriate capabilities are provided.

Finally, ECNP requested that the Commission require public announcement of future planned releases of radioactive materials from Unit 2. In view of its Statements of May 25, 1979, and November 21, 1979 (published in 44 FR 67738) and the Order of February 11, 1980 (45 FR 11282), the Commission has essentially granted this request. The Commission has prohibited various decontamination activities that might result in planned releases of radioactive materials until such activities have been approved by the Commission. Any such authorization would be by its very nature a matter of public record and as such would be "publicly announced" as ECNP requests.

THE MAY 16th PETITION

Dr. Kepford expanded on ECNP's April 27th request for relief in a supplemental petition dated May 16, 1979. ECNP primarily requests in the May 16th petition that the Commission prohibit further releases of radioactive materials from TMI-2 pending the conclusion of a hearing on the issues raised in ECNP's two petitions. In the first instance, ECNP is not legally entitled to a hearing on its petitions.⁵ *Porter County Chapter of the Izaak Walton League v. NRC* 606 F.2d 1363 (D.C. Cir. 1979); *Illinois v. NRC* 591 F.2d 12 (7th Cir. 1979). As to some of the issues, e.g., whether the Commission was "negligent" in licensing TMI-2 and whether the operating license should be permanently revoked, ECNP establishes no basis for prohibiting planned releases pending conclusion of a hearing on these issues. ECNP bears the burden of showing why consideration of such issues is necessary prior to the commencement of controlled releases as part of a decontamination program. See *Public Service Company of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2)*, DD-79-17, 10 NRC 613 (1979).

Moreover, ECNP presents no convincing rationale for instituting a special hearing to consider the issues in its petitions, regardless of the timing of any such hearing. A number of these issues (2, 3, 7 and 8 in the May 16th petition) relate directly to the need to evaluate the environmental consequences of proposals to decontaminate the TMI-2 facility and to dispose of various gaseous, liquid or solid wastes. The Commission has already expressed its intent to prepare an environmental impact statement. "Statement of Policy and Notice of Intent to Prepare a Programmatic Environmental Impact Statement," 44 FR 67738 (November 27, 1979). In its "Statement" the Commission noted that:

In the Commission's judgment an overall study of the decontamination and disposal process will assist the Commission in carrying out its regulatory responsibilities under the Atomic Energy Act to protect the public health and safety as decontamination progresses. It will also be in keeping with the purposes of the National Environmental Policy Act to engage the public on the Commission's decision-making process, and to focus on environmental issues and alternatives before commitments to specific clean-up choices are made.

The Commission cautioned, however, that:

⁵Similarly, a final decision on ECNP's petition is not required prior to issuing an authorization to undertake decontamination operations. See *Toledo Edison Company (Davis-Besse Nuclear Power Station, Unit 1)*, DD-80-2, Decision at 2 n.4 (Docket No. 50-346, January 17, 1980); cf. *Sacramento Mun. Utility Dist. (Rancho Seco Nuclear Generating Station)*, CLI-79-7, 9 NRC 680, 681 (1979)

The development of a programmatic impact statement will not preclude prompt Commission action when needed. 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. As in settling upon the scope of the programmatic impact statement, CEQ can lend assistance here. For example should the Commission before completing its programmatic statement decide that it is in the best interest of the public health and safety to decontaminate the high level waste water now in the containment building, or to purge that building of its radioactive gases, the Commission will consider CEQ's advice as to the Commission's NEPA responsibilities. Moreover, as stated in the Commission's May 25 statement, any action of this kind will not be taken until it has undergone an environmental review, and furthermore with opportunity for public comment provided.

However, consistent with our May 25 statement, we recognize that there may be emergency situations, not now foreseen, which should they occur would require rapid action. To the extent practicable the Commission will consult with CEQ in these situations as well.

The staff believes, therefore, that the Commission is already embarked on a course that will satisfy the petitioner's concerns, i.e., that waste disposal is carefully assessed and that the Commission provide a mechanism for public participation in the decision-making process. To the extent that such releases require further order, ECNP may have a right to demand a hearing, if one of its members has an interest affected by such order within the meaning of section 189a, of the Atomic Energy Act.

Several other issues (1, 6(c), and (d)) proposed for hearing in the May 16th petition concern the validity of population exposure estimates and the "intent" of the Commission to ensure that adequate radiation monitoring capabilities will be provided. The staff does not perceive a need to hold a hearing to explore the conclusions reached in the Ad Hoc Population Dose Assessment Group's report, "Population Dose and Health Impact of the Accident at the Three Mile Island Nuclear Station" (NUREG-0558, May 1979), nor does ECNP provide particular reasons, other than its dissatisfaction with the report, why such a hearing should be held. ECNP's concern with the adequacy of radiation monitoring appears to be directed primarily at assurance of adequate capabilities during decontamination operations. Of course, the Commission intends to assure that adequate monitoring is conducted during all phases of decontamination. In this regard, the staff described the program for radiological environmental monitoring that will be provided if decontamination of the reactor building atmosphere through containment venting is approved. See "Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," Ch. 7 (NUREG-0662, March 1980). To the extent that

additional or different capabilities are required for future operations, the Commission will assure that appropriate capabilities are provided. If monitoring issues are relevant to future proceedings in which ECNP has intervened, ECNP may of course raise such issues. The staff sees no need to institute a special hearing on radiation monitoring.

ECNP also wants the Commission to convene a hearing on the "management capability" of Metropolitan Edison (issues 4 and 5 in May 16th petition). To the extent that this issue has current relevance, that issue has been admitted in the form of various contentions in the TMI-1 restart proceeding. The Commission has provided further guidance on the scope of that issue in its Order of March 6, 1980 (CLI-80-5, Docket No. 50-289). ECNP itself has raised and had admitted such a contention in that proceeding. The staff sees no reason, therefore, to institute another proceeding to consider the issue. To the extent that such an issue may be relevant to other hearings that may be held concerning TMI-2, intervenors would have an opportunity to raise contentions concerning "management capability."

ECNP also desires a hearing on "the possible negligent role of the Commission in licensing TMI-2." Apart from ECNP's failure to state the basis for or purpose of a hearing on this issue, the staff notes that the Commission's exercise of its responsibilities has been the subject of intense public scrutiny by the Congress and the President's Commission on the Accident at Three Mile Island. Such forums, particularly the Congress, are most appropriate for conducting an inquiry into the Commission's regulatory practices. In a similar vein is ECNP's request (issue 6(a) and (b) in the May 16th petition) that the Commission conduct hearings on its "capability and intent" to obey its governing statutes and its regulations. It is unreasonable to suggest that the Commission should hold hearings to determine whether it will obey the law. If ECNP believes that the Commission has not fulfilled its responsibilities or has violated its rules or federal statutes, ECNP has appropriate remedies in the federal courts.

Lastly, ECNP wishes that the Commission institute a hearing on whether the TMI-2 operating license should be "temporarily or permanently withdrawn" from Metropolitan Edison for "gross violations" of the Commission's regulations and license conditions. The Commission has already suspended the operating authority in License No. DPR-73 for the TMI-2 facility. Order for Modification of License (July 20, 1979), *published in* 44 FR 45271 (August 1, 1979). The question whether this operating authority should be permanently revoked is a question for another day. The Commission's immediate concern is safe decontamination and disposal of wastes from Three Mile Island Unit 2.

In its final requests in the May 16th petition, ECNP asks that it be informed of all releases of radioactive materials and that it be furnished copies of all materials pertinent to "the ongoing crisis at TMI-2." Information concerning Three Mile Island is available to ECNP and other members of the public in the Commission's public document rooms in Washington, D.C. and in Harrisburg, Pennsylvania. The Commission has made public announcements and made available information concerning radioactive releases from TMI-2. ECNP has been on the distribution list for orders and other significant documents related to TMI-2. As a participant in the TMI-1 restart proceeding, ECNP receives documents relevant to that proceeding. In effect, ECNP asks that it become another public document room for conceivably *all* materials related to Three Mile Island. ECNP offers no reasons why it should be accorded such a special status. To the extent that ECNP wishes to obtain information it has not received, that information is generally available to ECNP, as it is to any other member of the public, in the Commission's public document rooms.

CONCLUSION

As described in this decision, the staff believes that the Commission has essentially satisfied some of the petitioner's concerns. The staff finds no basis with respect to the petitioner's other requests to take the requested action. This decision does not bar ECNP, assuming it has an interest affected within the meaning of section 189a, of the Atomic Energy Act, from seeking intervention or hearings in future proceedings to raise similar issues.

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 (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 16th day of April 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-311

**PUBLIC SERVICE ELECTRIC
AND GAS COMPANY, *et al.***
**(Salem Nuclear Generating
Station, Unit 2)**

April 16, 1980

The Director of Nuclear Reactor Regulation denies a petition filed under 10 CFR 2.206 of the Commission's regulations requesting to stay the issuance of the operating license for Salem Nuclear Generating Station, Unit No. 2 pending the resolution of ten issues.

NRC RESPONSIBILITIES UNDER NEPA

Where a petition under 10 CFR 2.206 asks that the Commission re-open the need-for-power determination, the staff will consider whether the petition presents new information that represents a significant new environmental impact or information which would clearly mandate a change in the Commission's original determination.

ATOMIC ENERGY ACT: ALTERNATIVES

The Atomic Energy Act does not make NRC 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.

DIRECTOR'S DENIAL OF REQUEST UNDER 10 CFR 2.206

By petition dated August 3, 1979, and a supplement filed on August 31, 1979, Alfred C. Coleman and Eleanor G. Coleman requested that the issuance of the operating license for Salem Nuclear Generating Station, Unit No. 2 be stayed until various questions they raise, set forth in ten contentions, are resolved. They also requested that an adjudicatory hearing

be held to consider the issues raised in their contentions. The Coleman's petition has been 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*, 44 FR 50932 (August 30, 1979).

Each of the Coleman's contentions are dealt with, in turn, below.

Contentions 1, 2 and 8

(1) The Nuclear Regulatory Commission has failed to act on information already known to it regarding projected needs for the PJM grid. The actual assumptions used, calculations performed, and results obtained to justify licensing Salem Unit No. 2 are ambiguous and inadequate.

(2) The Nuclear Regulatory Commission has failed to act on information already known to it regarding projected plant capacity, maintenance, and operating costs for similar facilities (cost/benefit analysis).

(8) The Nuclear Regulatory Commission has failed to require of the licensee cost-benefit analysis and consideration of alternative conversion of Salem No. 2 to natural gas or coal. (Final Environmental Impact Statement - Docket Nos. 50-272 and 50-311 - April 1973 - Pages 10 Alternatives, 10-1 through 10-17 and 12-9 (12A and 12-16 (12X)). The NRC has failed to require in their analysis of "Request for Additional Financial Information Concerning Unit No. 2" (NRC request to PSE and G, April 18, 1978 - Olan D. Parr to R.L. Mittl) the alternative of conversion to natural gas or coal.

Response

All three of these contentions appear to be related to the Commission's obligations under the National Environmental Policy Act of 1969 (NEPA): need-for-power, operation and maintenance costs, cost/benefit analyses, and consideration of the alternative of conversion to natural gas or coal.

NEPA requires balancing of environmental costs against the expected benefits of major federal actions which significantly affect the environment before the actions are taken. "Need-for-power" is a shorthand expression for a primary aspect of the "benefit" side of the cost-benefit balance which NEPA mandates in considering the licensing of a nuclear power plant.¹ "A nuclear plant's principal 'benefit' is of course the electric power it generates. Hence, absent some 'need for power,' justification for building a facility is

¹Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 90 (1977).

problematical." *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 405 (1976).

The Commission has recognized, however, that uncertainty is inherent in any prediction of the need for or demand for the electricity to be generated by a nuclear plant.

"[E]very prediction has an associated uncertainty and . . . long range forecasts of this type are especially uncertain in that they are affected by trends in usage, increasing rates, demographic changes, industrial growth or decline, the general state of the economy, etc. These factors exist even beyond the uncertainty that inheres in demand forecasts: assumptions on continued use from historical data, range of years considered, the area considered, extrapolations from usage in residential, commercial, and industrial sectors, etc." *Carolina Power and Light Company* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), CLI-79-5, 9 NRC 609, 610 (1979).

As the Atomic Safety and Licensing Appeal Board has stated, "[g]iven the legal responsibility imposed upon a public utility to provide at all times adequate, reliable service — and the severe consequences which may attend upon a failure to discharge that responsibility — the most that can be required is that the forecast be a reasonable one in the light of what is ascertainable at the time made." *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 328 (1978) (citation omitted).

In the course of fulfilling this obligation under NEPA, the Commission staff prepared an Environmental Impact Statement² for Salem, Units 1 and 2 which concluded that the power to be generated by the facilities was needed to meet the applicants' future demands for electric power.³ No environmentally preferable alternatives were found to be available⁴ and the results of the cost/benefit analysis for the Salem facilities found that the environmental costs of the facility were outweighed by the benefits to be derived from the facility.⁵ The Commission, therefore, made a good faith assessment of the need for the Salem facility based on the information available to it and considered possible alternatives to the construction and operation of the facility.

²Final Environmental Impact Statement, Docket Nos. 50-272 and 50-311, Salem Nuclear Generating Station, Units 1 and 2, April 1973.

³FES, *supra*, Section 9.6.

⁴FES, *supra*, Section 10.1.

⁵FES, *supra*, Section 11.

Now the Colemans are requesting that the Commission re-open the need-for-power determination and its consideration of alternatives. Previous Director's Decisions have set forth the standard which is followed in consideration of such a request, i.e., whether the new information presented represents a significant new environmental impact or information which would clearly mandate a change in the Commission's original determination of the need for the facility and the acceptance of the nuclear generation alternative.⁶

The Colemans have not submitted any specific information on projected needs or costs of operation of Salem Unit 2 versus other, e.g., coal or natural gas, facilities. Rather, they merely assert that the Commission has failed to act on information known to it regarding costs and need for power and failed to require the licensee to do a cost-benefit analysis on the alternative of converting Salem Unit 2 to natural gas or coal.

While the exact nature of their assertion of failure to act on information regarding costs of similar facilities is unclear, it should be noted that under 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.⁷ Furthermore, under our NEPA obligations, cost is relevant only to the extent an environmentally preferable alternative exists. If one does exist, then costs are considered to determine if they outweigh the environmental advantages to be gained.⁸

In the Environmental Impact Statement, the staff concluded that the alternatives of coal and natural gas did not reasonably exist.⁹ Even assuming they reasonably exist, when the sunk costs of the essentially completed Salem Unit 2 facility are considered,¹⁰ it would be extremely difficult to find that the benefits to be derived from converting the plant would be outweighed by the costs of such an action. Moreover, as set forth

⁶The staff has applied this standard in previous Director's denials under 10 CFR 2.206. See e.g., *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), DD-79-10, 10 NRC 129 (1979); *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582 (1979). The staff believes that this standard is consistent with NEPA and is appropriate in considering under 10 CFR 2.206 petitions to reopen the record in a proceeding in light of the well-recognized need for finality in the administrative process. See *Greene County Planning Board v. FPC*, 559 F.2d 1227, 1233 (2d Cir. 1976), cert. denied, 434 U.S. 1086 (1978); *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 750-51 (1977).

⁷*Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 162 (1978); see also *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, Docket Nos. 50-338SP, 50-339SP, at 455-458, (March 24, 1980).

⁸*Consumers Power Company*, *supra*.

⁹FES, *supra*, Sections 10.1.5 and 10.1.6.

¹⁰*Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 530-6 (1977).

below, the staff has concluded that an already constructed nuclear unit is cheaper to operate than existing fossil fuel units because of lower fuel, operation and maintenance costs.

The 1980 nuclear fuel cost for Salem Unit 1 is estimated at 4.3 mills/kilowatt hours (kWh).¹¹ The 1980 operation and maintenance cost is estimated at 2.0 mills/kWh.¹² The Public Service Electric and Gas Company's 1980 average fuel cost for an oil unit is 29.34 mills/kWh, for a coal unit it is 14.7 mills/kWh.¹³ The 1980 average operation and maintenance cost for an oil unit is 5.9 mills/kWh while the coal unit's average 1980 operation and maintenance cost is 4.32 mills/kWh.¹⁴ The 1980 weighted average fuel cost for the oil and coal baseload units is 23.07 mills/kWh and the weighted operation and maintenance cost is 5.22 mills/kWh. (The majority of Public Service Electric and Gas Company's baseload capacity is generated by oil fired units.)¹⁵

The staff generally assumes using a 40 percent capacity factor for the initial year of operation of nuclear plants, 65 percent for the second year and 70 percent for the third through the 15th years of operation. It was also assumed that both nuclear and fossil fuel costs escalated at 10 percent per year and that operation and maintenance costs escalated at 8 percent per year.

Based on these capacity factors, Salem Unit 2 would be capable of producing 3.90 billion kWh of electricity the first year, 6.3 billion kWh the second year, and 6.8 billion kWh of electricity for the third through the 15th year. If the equivalent energy is generated by existing oil and coal units, the economic penalty in increased production costs alone would be \$372 million in 1980 dollars for the first three years that Salem Unit 2 was not allowed to operate. Actually, the staff believes the applicants would use Salem Unit 2 to replace its more expensive oil base load capacity and not a combination of oil and coal. The resulting economic penalties in 1980 dollars for the first three years, considering the replacing by oil fired units alone, would be \$487 million. In subsequent years the economic penalty would, in all probability, be even greater because even equivalent escalation rates impact more heavily on oil and coal which start at larger base values than nuclear production costs. Therefore, even in the highly unlikely event

¹¹Uniform Statistical Reports - Year Ending December 31, 1978 — for Public Service Electric and Gas Company, April 24, 1979, Schedule XIX.

¹²"A procedure for Estimating Non-Fuel Operation and Maintenance Cost for Large Steam-Electric Power Plants," ORNL/RM 6467.

¹³Uniform Statistical Reports, *supra*.

¹⁴"Steam Electric Plant Construction Cost and Annual Production Expenses 1977" DOE/EIA-0033/3(7).

¹⁵Uniform Statistical Reports, *supra*.

that demand did not grow and Salem's output could be provided by existing units, the operation of Salem 2 would result in substantial production cost savings to the rate payers served by Public Service Electric and Gas.

Consequently, the Staff does not believe that the Colemans' petition and the information referred to therein represents a major new environmental impact or change in facts which would warrant re-opening consideration of the original NEPA analysis and its consideration of need for power alternatives and attendant cost/benefit analyses.

Contention 3

The Nuclear Regulatory Commission has failed to act on information already known to it regarding unresolved safety issues. "Public safety is the first, last and a permanent consideration in any decision on the issuance of a construction permit or a license to operate a nuclear facility." *Power Reactor Development Corp. v. International Union of Electrical Radio and Machine Workers*, 367 U.S. 396, 402, 81 S. Ct. 1529, 1532 (1961).

Response

The NRC staff continuously evaluates the safety requirements used in its reviews against new information as it becomes available. Information related to the safety of nuclear power plants comes from a variety of sources including experience from operating reactors, research results, NRC staff and Advisory Committee on Reactor Safeguards safety reviews, and vendor, architect/engineer and utility design reviews. Each time a new concern or safety issue is identified from one or more of these sources, the need for immediate action to assure safe operation is assessed. This assessment includes consideration of the generic implications of the issue.

Where it is concluded to be necessary, immediate action is taken to assure safety, e.g., the shutdown of nuclear reactors due to piping seismic design deficiencies in 1979. In other cases interim measures, such as modifications to operating procedures, may be sufficient to allow further study of the issue prior to making licensing decisions. In most cases, however the initial assessment indicates that immediate licensing actions or changes in licensing criteria are not necessary. In any event, further study may be deemed appropriate to make judgments as to whether existing NRC staff requirements should be modified to address the issue for new plants or if backfitting is appropriate for the long-term operation of plants already under construction or in operation.

These issues are sometimes called "generic safety issues" because they are related to a particular class or type of nuclear facility rather than a specific plant. These issues have also been referred to as "unresolved safety

issues.” However, as discussed above, such issues are considered on a generic basis only after the staff has made an initial determination that the safety significance of the issue does not prohibit continued operation or require licensing actions of the facility(s) under consideration while the longer term generic review is underway.

These longer generic studies were the subject of a decision by the Atomic Safety and Licensing Appeal Board of the Nuclear Regulatory Commission. In *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 at 775 (1977), the Appeal Board set forth the manner in which the staff should deal with unresolved generic safety questions for a particular facility.

The Appeal Board stated:

“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. Once again, this assessment might well have a direct bearing upon the ability of the licensing board to make the safety findings required of it on the construction permit level even though the generic answer to the question remains in the offing. Among other things, the furnished information would likely shed light on such alternatively important considerations as whether (1) the problem has already been resolved for the reactor under study; (2) there is a reasonable basis for concluding that a satisfactory solution will be obtained before the reactor is put in operation; or (3) the problem would have no safety implications until after several years of reactor operation and, should it not be resolved by then, alternative means will be available to insure that continued operation (if permitted at all) would not pose an undue risk to the public.”

Since the issuance of the ALAB-444 the NRC has addressed this matter in its SERs (Safety Evaluation Reports) as they relate to specific applications.

With respect to Salem Unit 2, we have reviewed the generic safety issues in accordance with ALAB-444. Our evaluation of this matter will be addressed in a supplement to the Safety Evaluation Report which will be issued prior to a decision to issue the operating license.¹⁶

¹⁶See Appendix C, Supplement No. 4, Safety Evaluation Report for Salem Nuclear Generating Station Unit 2, Docket No. 50-311, April, 16, 1980.

Contention 4

The NRC has failed to consider the outstanding adjudicatory hearing on Salem Unit No. 1 with regard to expansion of the spent fuel pool, as it pertains to expansion at Salem Unit No. 2 located at a multi-nuclear complex.

Response

Public Service Gas and Electric Company has requested an amendment to the operating license for its Salem Unit 1 facility to provide additional storage capacity in the Salem Unit 1 spent fuel pool (SFP). That amendment as petitioner has correctly stated, is currently the subject of an adjudicatory proceeding. Further, by letter dated April 12, 1978, the licensee submitted Amendment No. 42 to the Application for License for Construction and Operation of the Salem Nuclear Generating Station Unit 2, which stated that the design changes proposed for the SFP at Salem Unit 1 would be made at Unit 2 as well.

In the course of evaluating the proposed spent fuel pool expansion for Unit 1, the Office of Nuclear Reactor Regulation prepared an Environmental Impact Appraisal (EIA) of the proposed amendment. That EIA was issued on January 15, 1979. The Salem Station Final Environmental Statement (FES) which was issued in April 1973 considered the environmental impacts of the Salem Station rather than for Salem Unit 1 alone. Since PSE and G has indicated it will make identical modifications to the SFP at Unit 2, the EIA addressed the cumulative environmental impacts of the expansion of both SFPs.

The Commission concluded in the EIA that the environmental impacts associated with the proposed modification to both facility spent fuel pools will not be significantly changed from those analyzed in the FES for Salem Units 1 and 2 issued in April 1973. Consequently, the cumulative environmental impacts of the expansion of the spent fuel pools at the two Salem facilities have been adequately assessed.

With respect to the spent fuel pool expansion of Unit 1, our safety evaluation is presented in "Unit 1 Modification of Spent Fuel Pool Storage," dated January 15, 1979. We concluded that since the proposed modifications to the Unit 2 spent fuel storage and spent fuel pool facilities are identical to those at Unit 1, they are acceptable on the basis of the Unit 1 Evaluation.

Contention 5

The Nuclear Regulatory Commission has failed to require an "independent" and separate "fire protection" water backup system for Salem Unit No. 2.

Response

We have reviewed the Salem Nuclear Generating Station Units 1 and 2 fire protection program and fire hazards analysis submitted by the licensee. This submittal, which was in response to our request for an evaluation of the fire protection program against the guidelines of Appendix A to BTP ABSCB 9.5-1, states that a common yard fire main loop may serve multi-unit nuclear power plant sites, if cross-connected between units. Sectional control valves would permit maintaining independence of the individual loop around each unit. For such installation, common water supplies may also be utilized with the water supply sized for the largest single expected flow. For multiple reactor sites with widely separated plants (approaching 1 mile or more), separate yard fire main loops should be used.

The Salem Units are not widely separated plants and, therefore, do not require separate and independent yard fire main loops. The fire protection water supply system is common to both units and consists of two full capacity diesel-engine-driven fire pumps. Each pump has a separate discharge header that is connected to the yard fire main loop. Post type indicator valves have been provided to isolate them in the pumps' discharge headers in the yard loop and in the yard loop itself to provide sectionalization so that independence of the loop around each unit can be maintained. The water supply source to the pumps is from two 350,000 gallon water tanks (each tank has 300,000 gallons dedicated to fire protection). The fire suppression system with the greatest demand is the 1400 gpm deluge system (primary) plus the 1000 gpm for the manual hose station (backup). This 2400 gpm demand is within the design capacity of 2500 gpm for the system.

In addition to the above, the automatic sprinkler system and manual hose station hose standpipe systems are fed by the main yard loop with multiple connections to interior fire protection systems header. Each sprinkler system and manual hose station has an independent connection to the fire protection header fed from two directions; therefore, a single failure cannot impair both the primary and backup fire protection system.

Based on our review, we find that the Fire Protection Program for the Salem Nuclear Generating Station is adequate and with the scheduled modifications committed to by the applicants, will meet the guidelines contained in Appendix A to Branch Technical Position ASB 9.5-1 and the General Design Criterion 3 "Fire Protection."

Contention 6

The recommendations from the NRC Task Force contains 23 recommendations for administrative and design changes to Salem Unit No. 2, proposed requirements arising from "Lessons-Learned: Study of the Accident at TMI." These should be completed prior to licensing and

commercial start-up as well as additional corrective action on potential defects.

Response

Over the past several months following the Three Mile Island accident, the NRC staff has been conducting an intensive review of the design and operational aspects of nuclear power plants and the emergency procedures for coping with potential accidents. The purpose of these efforts was to identify measures that should be taken in the short-term to reduce the likelihood of such accidents and to improve the emergency preparedness in responding to such events:

The TMI-2 related requirements for near-term operating license (NTOL) applications were initially identified in the January 5, 1980 memorandum from the Executive Director for Operations, to the Commissioners, "TMI Action Plan Prerequisites for Resumption of Licensing." On February 6, 1980, a revision of this list of requirements based on the latest draft of the Task Action Plans as of February 6, 1980 was prepared and discussed with the Commission. These requirements were listed in two categories; those required prior to fuel load and low power testing operation up to five percent power (designated as FL) and those required prior to operation above five percent power (designated as FP).

These requirements were developed from all available sources such as the recommendations of the Bulletins and Orders Task Force, the Presidential Commission to Investigate TMI-2, and the NRC Special Inquiry Group, and those which resulted from the Lessons Learned Task Force Short Term Recommendations (NUREG-0578), and the Lessons Learned Task Force Final Report (NUREG-0585).

Those requirements in the February 6, 1980 list which resulted from the Lessons Learned Task Force Short Term Recommendations (NUREG-0578), and those resulting from the Advisory Committee on Reactor Safeguards (ACRS) review of that document and the additional requirements of the Director, Office of Nuclear Reactor Regulation, were previously approved by the Commission. On September 27, 1979, a letter was issued transmitting these requirements to all pending operating license applicants. On November 9, 1979, a letter clarifying these requirements was issued to all pending operating license applicants to assist in their understanding of our requirements.

The response of the Public Service Electric and Gas Company to our letters has been the subject of staff review since October 1979. Meetings were held with the applicants in Bethesda on November 20 and December 11, 1979, and February 26, 1980. Site visits were made on January 10 and 11, and February 27, 1980 to check hardware installation, review proposed

support centers, and to review specific administrative procedures relating to operating personnel and accident response.

In addition, for all the remaining items in the February 6, 1980 listing of requirements, the staff and the applicants have had ongoing reviews and meetings concerning these requirements and the applicants' responses to these additional items. Further site visits were held, for example, the March 5-7, 1980 visit by a team headed by an office of Inspection and Enforcement leader and composed of the NRR licensing project manager, the Office of Inspection and Enforcement site representative, and technical members from NRR. They evaluated the onsite and offsite support centers and their staffing and installed communications system between the plant and NRC Incident Response Center. This evaluation included the review of licensee management organization and managerial capabilities.

Our evaluation regarding Three Mile Island matters will be presented in Supplement Number 4 of the Salem Unit 2 Safety Evaluation Report which will be issued prior to a decision to issue the operating license for the Unit 2 facility.¹⁷

Contention 7

The NRC has failed to consider the "menu for disaster" track record of Salem Unit No. 1 as it relates to known shutdown and power reductions (forced) for the following reasons:

- A. Equipment Failure
- B. Maintenance or Test
- C. Refueling
- D. Regulatory Restriction
- E. Operator Training and License Examination
- F. Administrative
- G. Operational Error
- H. Other

as it affects the *performance* of Salem Unit No. 2. Additionally, the NRC has failed to recommend changes to Salem Unit No. 2 as a result of "Lessons Learned" at Salem Unit No. 1 mentioned operating status and "Reportable Occurrences" as filed in License Event Reports (LERs) since fuel loading 1976 to date. This corrective action as a result of "Lessons Learned" from Salem Unit No. 1 should be completed prior to licensing and commercial startup of Salem Unit No. 2.

¹⁷See part II of Supplement No. 4, Safety Evaluation Report, Salem Nuclear Generating Station Unit 2, Docket No. 50-311, April, 16, 1980.

Response

With respect to Salem Unit 1, actions for deficiencies identified by any means such as a reportable occurrence are manifested in one of two ways; design change or procedure modification. These items are routinely verified for Salem Unit 1 through Our Office of Inspection and Enforcement inspection program.

In addition, inspection by our Office of Inspection and Enforcement has been conducted to verify that such corrective measures have been applied to Salem Unit 2. The enclosed applicable portions of the Office of Inspection and Enforcement inspection reports 50-311/78-47 and 50-311/79-23 (Enclosure 2) are examples of such inspection effort. It should be additionally noted that the basis for the Salem Unit 2 operating procedures has been the Unit 1 operating procedure, complete with all changes and iterations which have accrued from three years of use.

The Office of Inspection and Enforcement inspection program has verified, through sampling inspection, that corrective measures taken at Salem Unit 1 have been considered for applicability at Salem Unit 2 and where applicable, have been incorporated.

Contention 7A

The Nuclear Regulatory Commission has failed to require the licensee and/or the manufacturer of reactor/steam generators to retrofit, as a result of testing, evaluating and analysis from "Lessons Learned"; from the 1974 incident in Switzerland (Westinghouse reactor) and Davis-Besse Unit No. 1, Ohio (Licensee: Toledo Edison Company - Docket No. 50-346).

Response

At Davis-Besse Unit No. 1 and at the reactor in Switzerland of a Westinghouse design, both failures of the relief and/or safety valves to close resulted in small break loss-of-coolant accidents. In both of these cases actuation of engineering safety features and an appropriate reactor operator action prevented the event from evolving into a situation similar to that experienced at Three Mile Island Unit 2, even though there were a number of similarities between the Three Mile Island Unit 2 event and the events at these two reactors.

In NUREG-0578, the NRC staff's Three Mile Island Unit 2 Lessons Learned Task Force has disclosed a number of actions in the areas of design, analysis, and plant operations that will deal with the events similar to the ones that took place at Davis-Besse Unit No. 1 and at the Westinghouse designed reactor in Switzerland. The response to Contention 6 addresses the requirements which have been imposed on the applicants and staff's evaluation of the implementation of those requirements.

Contention 8

The Nuclear Regulatory Commission has failed to require of the licensee cost-benefit analysis and consideration of alternative conversion of Salem No. 2 to natural gas or coal. (Final Environmental Impact Statement - Docket Nos. 50-272 and 50-311 - April 1973 - Pages 10 Alternatives, 10-1 through 10-17 and 12-9 (12A and 12-16 (12X)). The NRC has failed to require in their analysis of "Request for Additional Financial Information Concerning Unit No. 2" (NRC request to PSEandG; April 18, 1978 - Olan D. Parr to R. L. Mittl) the alternative of conversion to natural gas or coal.

Response

See response to Contentions 1 and 2.

Contention 9

The NRC has failed to review and compel the licensee to explain apparent discrepancies in seismic findings by Dames and Moore for PSEandG and Delmarva Power and Light Company. (Summit Nuclear Plant - Delaware) as it relates to the effect of a possible earthquake. The final Safety Analysis Report reflects there is no earthquake fault in the vicinity of Artificial Island, site of Salem Nuclear Generating Station Nos. 1 and 2.

This appears to be in contrast to the study and findings of the University of Delaware which states there is a fault down the middle of the Delaware River. This study is available to the NRC staff. The NRC staff order for seismic inspection of 29 reactors failed to include reactor containment structure, fuel handling, and spent fuel facilities. This must be determined prior to licensing Salem Unit No. 2. (Attachment - Article from "Today's Sunbeam," August 24, 1979). The NRC is already aware of the condition of the containment building (reactor) (cracks - NRC inspection report) and is unable to determine width, depth, extent or cause because of sand blasting by the licensee prior to NRC inspection.

Response

The geology and seismology of the Salem site were reviewed during the construction permit stage by the U.S. Atomic Energy Commission (USAEC) staff (now the NRC), the U.S. Geological Survey (USGS) and the U.S. Coast and Geodetic Survey (U.S.C.andGS), the seismological review group which is now part of the USGS. The conclusions from that review are summarized in the Safety Evaluation Report for the Salem Nuclear Generating Station Units 1 and 2 dated July 16, 1968. In that report it was concluded that there were no identifiable geologic structures that could be

expected to localize earthquakes in the site vicinity, and that 0.2g and 0.1g for the safe shutdown earthquake and operating basis earthquake would provide adequate earthquake protection for the plant.

On September 25, 1968 the Commission issued provisional construction permits for Units 1 and 2. Subsequent to this action, in 1972 and 1973, Dr. N. Spoljaric of the Delaware Geological Survey reported faulting along the Fall Zone in the Newark, Delaware area and in the Red Lion area. Those faults were investigated by the staff in considerable detail in regard to the Summit Nuclear Power Station site studies. As the result of its review of data from these studies and based on advice from the USGS, the NRC staff concluded that the oldest unfaulted strata overlying any of these faults was at least 65 million years old. Therefore these faults are not considered capable within the meaning of the NRC seismic and geologic siting criteria, Appendix A to 10 CFR Part 100 and were not considered significant to the nuclear sites on Artificial Island, which includes Salem 1 and 2 and Hope Creek 1 and 2. Because consideration of these faults did not alter the original conclusion regarding the seismic safety of Salem 1 and 2, the staff did not address specific geologic anomalies in the Safety Evaluation Report for the operating license of Salem 1 and 2, but simply restated the original conclusion.

In regard to the fault down the middle of the Delaware River proposed by the University of Delaware, we assume that you are referring to one of the faults discussed in a 1976 article by Spoljaric and others, entitled "Inference of Tectonic Evolution from LANDSAT-1 Imagery," which was published in Photogrammetric Engineering and Remote Sensing, Vol. 52, No. 8, pages 1069-1082. While this paper postdates publication of the Salem SER, we have considered it and reviewed its significance. The fault in the Delaware River discussed in the referenced article, which is based primarily on the interpretation of LANDSAT-1 imagery, is believed by the authors to be equivalent to one of the fault systems described by Spoljaric in 1972 and 1973. This fault system was investigated during the Summit site studies and shown to be at least 65 million years old. Based on the results of that investigation, we see no reason to change our conclusion arrived at during the CP review, that is, there are no known geologic structures that could tend to localize earthquakes in the site vicinity, and the SSE of 0.2g and the OBE of 0.1g are acceptable.

The NRC staff order regarding seismic inspection of 29 reactors was related to the specific area of the design of safety related piping (Office of Inspection and Enforcement Bulletin 79-07, "Seismic Stress Analysis of Safety-Related Piping") and does not include matters related to the seismic design of safety-related structures.

Our review of the seismic design of all Category I (safety-related) structures including the containment structure and fuel building is presented in Section 3.7 of the Safety Evaluation Report and Section 3.7 of Supplement No. 3 to the Safety Evaluation Report. As stated in Section 3.7 of Supplement No. 3, we require additional information regarding the seismic design as it relates to (1) a comparison of the response spectra and damping values between those currently adopted by us and those adopted by the applicants; (2) a justification of the use of a ± 10 percent peak width increment; (3) criteria used for the selection of lumped masses; and (4) criteria used for either coupling or decoupling a subsystem to its supporting system.

In letters dated January 21, 1979 and February 6, 1979, the applicants provided the necessary information. On the basis of our review of these matters, we concluded that the information provided was acceptable and consider the matter related to the seismic design of Category I structures resolved. We have not issued a supplement to the SER since that time. Our evaluation of these matters will be presented in a supplement to the Safety Evaluation Report prior to a decision concerning the issuance of an operating license.¹⁸

With respect to the fuel handling system and spent fuel pool facilities, our evaluation of the seismic design of this system and facilities for Unit 1 is presented in a safety evaluation related to the Unit 1 modification of the Spent Fuel Storage Pool dated January 15, 1979. Since the Unit 2 fuel handling system and spent fuel pool facilities are identical to the Unit 1 fuel handling system and spent fuel pool facilities, we conclude that they are acceptable on the basis of the Unit 1 Evaluation.

With respect to the containment structural integrity test (CSIT) the Office of Inspection and Enforcement indicated in their report 50-311/78-51 that crack patterns were located on the exterior of containment utilizing the test procedure and Regulatory Guide 1.18, "Structural Acceptance Test for Concrete Primary Reactor Containments" requirements. The area of each crack pattern exceeded the Regulatory Guide 1.18 requirement of 40 square feet. A grid network of one foot squares was superimposed on the crack pattern area as an aid for transcribing crack details.

The inspection report (50-311/78-51) indicated that the applicants sandblasted the surface of the containment structure at the crack pattern areas to remove a coating of Modac in order to expose the actual concrete surface. During the inspector's observations of the crack pattern areas, it was noted that the sandblasting operations had weathered the edges of the

¹⁸See Supplement 4, Section 3.7, Safety Evaluation Report for Salem Nuclear Generating Station Unit 2, Docket No. 50-311, April, 16, 1980.

existing cracks, thus making it somewhat difficult to obtain consistent crack width readings. The inspectors alerted test personnel of their concerns in this area. The inspectors further observed the initial crack survey at atmospheric pressure just prior to the start of pressurization and expressed their concern to the applicants about the methods being used to measure cracks. In response the applicants conducted additional training of each crack mapping team.

The report (50-311/78-51) further indicates that based on interviews, observations, and independent measurements performed, the inspectors felt that the test was conducted in accordance with the test procedure and that valid test data were obtained.

In the Office of Inspection and Enforcement Report 50-311/79-10, it is indicated that the inspector reviewed the test records relative to the containment structural integrity test. These final data were compared to the acceptance criteria stated in the Final Safety Analysis Report and also to the results of Salem Unit 1 containment structural integrity test.

With respect to crack measurements, it is stated in the Office of Inspection and Enforcement Report that:

"The FSAR limit of 0.030 inches maximum crack growth during pressurization from 0 psig to 54 psig was exceeded in a total of 39 instances. Of these 39 instances, 30 were in the area of the equipment hatch and 6 were in the area of the personnel hatch. The licensee elected to chip away approximately 1/8" of surface concrete in the area of 4 of these cracks to determine their depth. This was accomplished at the maximum test pressure of 54 psig. It was determined that in none of the 4 cracks explored did the crack width exceed 0.015 inches 1/8" deep into the concrete.

The FSAR limit 0.020 inches maximum residual crack growth after depressurization was exceeded in one instance in the area of the equipment hatch. The licensee intends to explore this crack.

The above results are not consistent with Unit 1. However, the FSAR stated acceptance criteria for the containment structure is "... demonstration that the overall structure exhibits elastic behavior throughout the test range." The Licensee feels, based on the values of the other measurements and the results of the crack exploration, that the containment structure did demonstrate elastic behavior and that the crack growth data is anomalous. This displacement and strain measurement data examined by the inspectors appeared to support this conclusion. The licensee will offer an explanation for the crack growth in the final CSIT report. The licensee has stated that the CSIT test results will be submitted by letter to NRR with an evaluation of the crack."

On April 24, 1979, the Public Service Electric and Gas Company submitted to the Office of Nuclear Reactor Regulation (NRR) the report "Structural Integrity Tests, Unit 2 Containment, Salem Nuclear Generating Station" dated February 26, 1979.

We have reviewed the information provided by the applicants and our evaluation regarding this matter is presented in the following paragraphs.

The applicants have tested the Salem 2 containment following the non-prototype test requirements identified in Regulatory Guide 1.18, with some expanded measurements which utilized already installed strain gauges. These additional measurements were used to correlate test results between Units 1 and 2.

The verification of the containment design was made by comparing the measured displacements and strains with the computed values. The applicants have shown in the subject report that the measured displacements and strains were within the acceptable range of their corresponding computed values. The crack pattern and widths were shown to be in general agreement with the computed values. Some cracks exceeded the acceptable width limit. This problem was investigated by the applicants to determine whether these larger cracks might affect the structural integrity of the containment. It was determined that these cracks were shallow surface cracks which were not induced by excessive rebar strains.

Based on the review of the information contained in the subject report, we conclude that the applicants have adequately demonstrated that the concrete containment is capable of withstanding the postulated pressure loads with no adverse effects to its functional integrity and the subject test is judged acceptable.

Contention 10

The NRC has failed to require the licensee to consider, evaluate, and analyze the possible effects of a Class 9 accident for the Salem Nuclear Generating Station.

The term "Class 9 accident" derives from the Commission's December 1971, proposed rulemaking on "Consideration of Accidents in Implementation of the National Environmental Policy Act of 1969," 36 FR (1971). The proposed rulemaking would have added an Annex to Appendix D of 10 CFR Part 50, set forth the manner in which various categories of accidents should be taken into account in the environmental review. In the proposed Annex, the Commission divided into classes a theoretical spectrum of accidents ranging in severity from "trivial" (Class 1) to "very serious" (Class 9). Each class of accidents, except Classes 1 and 9, is required to be analyzed in environmental reports and statements. According to the proposed Annex, Class 1 accidents need not be considered because of their

trivial consequences. Accidents within Classes 2 through 8 "found to have significant adverse environmental effects shall be evaluated as to probability, or frequency of occurrence, to permit estimates to be made of environmental risk or cost arising from accidents of the given class" 36 FR 22852 (1971). With regard to "Class 9" accidents, the proposed Annex states:

"The occurrences in Class 9 involve sequences of postulated successive failure more severe than those postulated for the design basis for protective systems and engineered safety features. Their consequences could be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defense in depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low." 36 FR 2286 (1971).

Accordingly, the Annex does not require discussion of Class 9 accidents in environmental reports and statements.

Although the Annex has never been formally adopted by the Commission, the Commission noted upon publication that the Annex would be useful as "interim guidance" until the Commission took further action on the Annex. 36 FR 22851 (1971). Upon promulgation of 10 CFR Part 51 in 1974, the Commission stated that the adoption of Part 51 did not affect the proposed Annex, which was "still under consideration by the Commission." 39 FR 26279 (1974). Reliance on the Annex has been upheld by decisions of the Commission's adjudicatory panels and by Federal Courts. *See Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 259 n. 6 (1979), and cases cited therein; *Pennsylvania Power and Light Company* (Susquehanna Steam Electric Station Units 1 and 2), LBP-79-29, 10 NRC 586, 590 (1979).

The Colemans now request the Director of NRR to reverse the Commission's existing policy and to require the Public Service Electric and Gas Company, to consider the possible effects of a Class 9 accident for the Salem Unit 2 facility.¹⁹ I do not find such a course of action appropriate in light of the Commission's expressed intention in its recent decision in *Offshore Power Systems, supra*. Although the Commission ruled that consideration of Class 9 accidents was proper in the environmental review of floating nuclear power plants, the Commission did not alter the status of the proposed Annex as the Commission's "interim guidance" pending completion of the rulemaking on the proposed Annex. Moreover, the Commission expressed its intent "to complete the rulemaking begun by the Annex and to re-examine Commission policy in this area." *Id.*, at 603, *supra*. The Commission cautioned, however, that it was not "expressing any views on the question of environmental consideration of Class 9 accidents at land-based reactors," specifically noting that "[s]uch a generic action is more properly and effectively done through rulemaking proceedings in which all interested persons may participate." *Id.* ²⁰ In the meantime, the Commission requested *Offshore Power Systems* that the staff:

"1. Provide us with its recommendations on how the interim guidance of the Annex might be modified, on an interim basis and until the rulemaking on this subject is completed, to reflect development since 1971 and to accord more fully with current staff policy in this area; and

2. In the interim, pending completion of the rulemaking on this subject, bring to our attention any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered." 10 NRC at 262-63.

¹⁹The staff has previously indicated in a Director's Decision under 10 CFR 2.206 that the fact that the Three Mile Island accident occurred will not itself cause the staff to institute a proceeding to consider generally the environmental effects of Class 9 accidents at a facility. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station Units 1 and 2), DD-79-21, 10 NRC 717 (Docket Nos. 50-546 and 50-547; November 27, 1979). Although at least two Licensing Board panels have acknowledged, consistent with the proposed Annex, the admissibility of "Class 9 contentions" involving a *specific* accident sequence based on the Three Mile Island accident, these same Boards have recognized that *general* consideration of the consequences of Class 9 accidents at land-based reactors would be inconsistent with Commission policy. *Metropolitan Edison Company* (Three Mile Island Nuclear Station Unit 1), First Special Prehearing Conference Order (Restart Proceeding) (Docket No. 50-289, December 18, 1979; *Pennsylvania Power and Light Company, supra*, 10 NRC at 591.

²⁰The Commission reaffirmed this view in its recent decision *Public Service Company of Oklahoma* (Black Fox Station Units 1 and 2), CLI-80 (Docket Nos. 50-556 and 50-557, March 21, 1980).

The Commission has under consideration a proposed revised policy and pending consideration and guidance by the Commission on the proposed policy, the staff plans to withhold completion of any unissued Environmental Impact Statements on cases under current review.

We believe that the course of developing a revised general NRC policy on reviewing the risks of nuclear accidents, taking into account the suggestions in the Lewis Committee Report and the lessons learned from the accident at Three Mile Island, will in the long run result in sounder reviews than if we attempted to supplement reviews for individual plants before the general policy was determined. The Commission itself has said, "[W]e did not believe that the NRC's generic policy on consideration of Class 9 accidents would properly be developed ruling on a case-by-case basis. Such piecemeal consideration is not appropriate to such an important policy area, and we decline to adopt such an approach now." *Public Service Company of Oklahoma* (Black Fox Station Units 1 and 2), CLI-80-8, Docket Nos. 50-556 and 50-557, (March 21, 1980).

The staff is mindful, however, that the Commission also requested the staff to bring to the Commission's attention "any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered." *Off Shore Power Systems*, *supra* 10 NRC at 263. See also *Public Service Company of Oklahoma supra* at 3 and n.3. The staff has reviewed information concerning the Salem facility to determine whether "special circumstances" exist which might warrant a detailed Class 9 accident evaluation.²¹ The results of the staff's review follow:

²¹The staff's review is similar to one undertaken in a recent decision under 10 CFR 2.206, in which the staff reviewed information concerning the Seabrook Station in light of the special circumstances identified in the staff's brief to the Commission (dated January 12, 1979) in *Offshore Power Systems. Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), DD-80-6, Docket Nos. 50-443 and 50-444, at 379-381 (February 11, 1980). In the brief submitted in *Offshore Power Systems* the staff listed three special circumstances:

"To date, only three types of special circumstances have been identified that would trigger a detailed Class 9 accident evaluation: a high population density for the proposed site (above the trip points in the Standard Review Plan and Regulatory Guide), a novel reactor design (a type of power reactor other than a light water power reactor), or a combination of a unique design and a unique string mode (a floating nuclear plant." Brief at 47.

See also *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants - LWR Edition*, NUREG-75-087 (September 1975); *General Site Suitability Criteria for Nuclear Power Stations*, Regulatory Guide 4.7 (November 1975). In *Public Service Company of Oklahoma, supra*, at 3, the Commission noted in addition to these three criteria that proximity of a plant to a "man-made or natural hazard" might also represent "the type of exceptional case that might warrant additional consideration."

As noted in Section 1.2 of the Safety Evaluation Report,²² the nuclear steam supply system for each Salem unit will consist of a pressurized water reactor using a four-loop reactor coolant system. The Salem facility is a typical light water reactor facility similar to several other reactor designs of the Westinghouse Electric Corporation licensed for construction and operations, and therefore is not a novel reactor design.

In *Offshore Power Systems*, the unique design and unique siting mode consisted of a nuclear power plant 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 population exposure from the liquid pathway for a floating nuclear plant is significantly greater than for a land based plant because of the inability to interdict releases in the vicinity of the floating nuclear plant.

The Salem Nuclear Generating Station is located on Artificial Island, a man-made peninsula in the Delaware River estuary in Salem County, New Jersey. This estuary is the nearest surface water body which could be affected by liquid release from a Class 9 accident.

The most likely groundwater path to the estuary would be through a permeable sand layer approximately 30 feet below the surface. Groundwater velocity is conservatively estimated to be about 3 feet per day.

The time for contaminated liquids, generated by a postulated core-melt accident, to travel the groundwater pathway (approximately 780 feet) to the estuary would be in excess of 8 months. Due to this slow rate of groundwater movement, the staff concludes that there are no unusual features or special circumstances with regard to the groundwater contamination interdiction characteristics of this site that would distinguish it from other land based light water reactor sites to the extent that, under the present Commission policy, would warrant consideration of environmental consequences of Class 9 accidents.

However, the Task Action Plans contained in Draft NUREG-0660 (TMI Lessons Learned) as proposed to the Commission, identify Task Action Plan III.D.2.3, liquid pathway interdiction (an in-depth study of one of the special factors of Class 9 events). Assuming approval of this plan, Salem and all other plants would be analyzed as part of Task Action Plan III.D.2.3. If that should result in the liquid pathway being identified as a unique consideration at Salem, and the Commission's interim policy on Class 9 accident consideration has not yet clarified the situation in this regard, methods of interdiction and mitigation will be identified. Based

²²"Safety Evaluation of the Salem Nuclear Generating Station Units 1 and 2, Docket Nos. 50-272 and 50-311," U.S. Atomic Energy Commission, Directorate of Licensing, October 11, 1974.

upon the Liquid Pathway Study and preliminary discussions with Argonne National Laboratory on liquid pathway mitigation methods, it is possible to interdict within the time period indentified above and 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. However, site specific techniques if required, will be identified as a part of the Liquid Pathway Interdiction review.

On the question of proximity to man-made or natural hazards, the Staff concluded, in Section 2.2 of Supplement 1 to the Safety Evaluation Report, on the basis of its analysis of site characteristics, that the site was acceptable, relative to seismology, geology and foundations.²³ The Staff also concluded that the probability of damage to safety-related portions of the nuclear power plants on Artificial Island due to accidents occurring to waterborn commerce involving hazardous cargoes on the Delaware River was sufficiently low that these accidents need not be the bases for the design of the Salem facility.²⁴ In a recent decision which considered the issue of hazards due to water traffic on the Delaware River for the Hope Creek facilities, which are also located on Artificial Island, the Appeal Board concluded that there need not be any modification to the design of those facilities to accommodate possible hazards.²⁵ Moreover, conditions were included in the construction permits for the Hope Creek facilities which require reports to the Commission periodically of any changes in actual or projected traffic on the Delaware River.²⁶ These reporting requirements will provide information directly relevant to Salem Unit 2 and will keep the Commission informed of any changes that might affect the above conclusions.

With regard to the high population special circumstance, the staff's brief in *Offshore Power Systems* noted that the "special attention" called for by the Standard Review Plan and Regulatory Guide 4.7,²⁷ in the case of sites

²³Supplement 1, Safety Evaluation Report, Salem Nuclear Generating Station, Docket No. 50-311, June 28, 1976, Section 2.5. See also the response to Contention 9 herein.

²⁴Supplement 1, Safety Evaluation Report, Salem Nuclear Generating Station Docket No. 50-311, June 28, 1976, Section 2.2.

²⁵*Public Service Electric and Gas Company, et al.* (Hope Creek Generating Station, Units 1 and 2), ALAB-518, 9 NRC 14, 37 (1979).

²⁶*Id.* at 39-40.

²⁷Section C.3 of Regulatory Guide states:

"If the population density, including weighted transient population, projected at the time of initial operation of a nuclear power station exceeds 500 persons per square mile averaged over any radial distance out to 30 miles (cumulative population at a distance divided by the area at that distance), or the projected population density over the lifetime of the facility exceeds 1,000 persons per square miles averaged over any radial distance out to 30 miles, special attention should be given to the consideration of alternative sites with lower population densities."

exceeding the population level "trip points" entails a consideration of comparative population exposures for Class 9 accidents at the proposed site and alternative sites. The "trip points" apply to proposed new sites at the construction permit stage and were not evaluated nor proposed for plants beyond the construction permit stage. The consideration of population exposures for Class 9 accidents has been utilized by the staff in assessing the relative differences between a proposed site and candidate alternative sites. The consideration of population exposure for Class 9 accidents is not used as an absolute site-specific criterion for evaluating the suitability of a proposed site and sites are not necessarily found unsuitable if they exceed the population density guidelines given in the Standard Review Plan and Regulatory Guide 4.7. As indicated by the staff criteria in Regulatory Guide 4.7 and described in the Pilgrim final environmental statement,²⁸ a site that exceeds the population density guidelines can nevertheless be selected and approved if, on balance, it offers advantages compared with available alternative sites when all of the environmental, safety, and economic aspects of the proposed site and the alternative sites are considered.

It is current staff practice to assess the relative differences in population exposures from a Class 9 accident at a proposed new site and the alternative sites, using population distribution and population density as a surrogate for accident consequences. The consequences of radiological accidents, from minor or trivial releases up to and including severe events, is directly related to the number of people surrounding a particular site and to the distance of the population from the reactor location. The staff recognizes that the population distribution of a site is a relatively crude measure of the risk associated with the accidental releases of radioactivity. The risk from any accidental releases would depend not only upon the population distribution of a site but also upon many other factors that would enter into the determination of the actual consequences of the accident. However, insight gained in the evaluation of the relative consequences of accidents in the Perryman alternative site study (SECY-78-137, Enclosure D) led the staff to conclude that (1) the relative differences in the population distribution between sites is a reasonable measure of the relative magnitude of potential consequences, (2) relatively large differences in the population densities between two sites are required to exist before significant differences in accident risks would be expected to be discernible, and (3) the risk is not uniform for all members of the population regardless of distance from the site but is higher for those persons relatively close to the site and

²⁸"Final Supplement to the Final Environmental Statement related to construction of Pilgrim Nuclear Power Station Unit No. 2," (NUREG-549) May 1979.

generally decreases with distance away from the site.

The 1970 population density in the vicinity of the Salem site was less than 100 persons per square mile within 10 miles, and was about 320 persons per square mile at 30 miles. Population projections for the year 2000 indicate that the population density is expected to increase to about 130 persons per square mile within 10 miles, and to a value of about 450 persons per square mile at 30 miles. Based on these data, it is clear that the population density in the vicinity of the Salem site does not exceed the population level "trip points" of Regulatory Guide 4.7, and that the population density cannot, therefore, be considered to be a special circumstance that would trigger a detailed Class 9 accident evaluation.

CONCLUSION

Based on the foregoing analysis of the Contentions, I have determined that each has been adequately resolved. Consequently, the Colemans' request for a stay of the issuance of the operating license for Salem Nuclear Generating Station Unit 2, is denied.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and in the local Public Document Rooms for the Salem Unit 2 facility located at Salem Free Public Library, 112 West Broadway, Salem, New Jersey 08079. A copy of this decision will also be filed with the Secretary for review by the Commission in accordance with 10 CFR 2.206(c). of the regulations of the Commission.

As provided in 10 CFR 2.2068(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 the review of this decision within that time.

FOR THE NUCLEAR
REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 16th day of April 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-272
50-311
50-354
50-355PUBLIC SERVICE ELECTRIC
AND GAS COMPANY, *et al.*
(Salem Nuclear Generating
Station Units 1 and 2, Hope
Creek Generating Station,
Units 1 and 2)

April 18, 1980

The Director of Nuclear Reactor Regulation denies a petition filed under 10 CFR 2.206 of the Commission's regulations requesting the Director to suspend or revoke the operating license for Salem Nuclear Generating Station, Unit 1 and 2, and Hope Creek Generating Station, Units 1 and 2, and to stay issuance of the operating license for Salem Unit 2 because of an alleged failure to fulfill Commission responsibilities under the Endangered Species Act of 1973, as amended.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petitions dated October 18, 1979, Mr. and Mrs. Alfred Coleman, requested, pursuant to 10 CFR 2.206 of the Commission's regulations, that a show cause order be issued to Public Service Electric and Gas Company, *et al.* (hereinafter the "licensee") to suspend or revoke the operating license for Salem Nuclear Generating Station, Unit 1 and the construction permits for Salem Unit 2 and Hope Creek Generating Station, Units 1 and 2, and stay issuance of the operating license for Salem Unit 2. Notice of receipt of the Colemans' petition was published in the *Federal Register*, 44 FR 67253 (November 23, 1979).

The basis for Colemans' request is the assertion that previous findings made by the NRC in the Final Environmental Impact Statements for Salem, Units 1 and 2 and Hope Creek, Units 1 and 2¹ do not fulfill the Commission's responsibilities under the Endangered Species Act of 1973, as amended.² Specifically, they allege that the fact that two specimens of *Acipenser brevirostrum* LeSueur, the shortnose sturgeon, an endangered species designated under 16 U.S.C. 1533, were found by the Licensee on the intake trash bars and screens of Salem Unit 1, constitutes a "taking" in violation of the Endangered Species Act. The Colemans contend that the "shortnose sturgeon is being impinged or is highly susceptible to impingement on the Circulating Water System (CWS) traveling screens and the Service Water System (SWS) traveling screens at the Artificial Island site." Petitions at 5. Because the NRC has not taken any specific action, such as requiring protective measures to be implemented, the NRC has not taken adequate measures "to protect, guarantee and insure that no adverse action shall jeopardize the continued existence of any endangered, threatened or of special concern species." Petitions at 5.

For the reasons set forth below, the requests of the Colemans are denied.

I

Section 7(a) of the Endangered Species Act provides that:

All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 1533 of this title. Each Federal agency shall, in consultation with, and with the assistance of the Secretary, insure that any action authorized, funded or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of this section, 16 U.S.C. 1536.

Following receipt of the Colemans' petitions, the Commission staff began informal discussions with the National Marine Fisheries Service, National Oceanic and Atmospheric Administration (hereinafter NMFS) on the effects of operation of Salem Unit 1 and the construction and operation of Salem 2 and Hope Creek Units 1 and 2 on the endangered species, the shortnose sturgeon.³

¹Final Environmental Impact Statement for Salem Nuclear Generating Station, Unit No. 1 and No. 2, Docket No. 50-272 and 50-311, April, 1973. Final Environmental Impact Statement, Hope Creek Nuclear Generating Station, Unit No. 1 and No. 2, Docket No. 50-354 and 50-355, February 1974.

²16 U.S.C. 1531 *et seq.* (1979), amended P. L. 96-159, 93 Stat. 1225 (December 26, 1979).

³Because the shortnose sturgeon is considered to be an anadromous fish, protection of the species is under the jurisdiction of the National Marine Fisheries Service.

Two specimens of shortnose sturgeon had been found at the Salem Unit 1 facility. On January 12, 1978, one specimen, already dead, was collected from the trash bars at the Salem Unit 1 intake structure. On June 26, 1978, a second specimen was recovered from the screen wash water at the plant. It was in poor physiological condition and subsequently died despite attempts to resuscitate it in a flowing ambient water bath.

On October 31, 1979, the NRC requested formal consultation⁴ with NMFS to determine "whether construction and operation of Salem 2 and Hope Creek 1 and 2 and long-term continued operation of Salem 1 and their associated intake structures would jeopardize the continued existence of this endangered species or result in the destruction or modification of any critical habitat of this species." See Enclosure 1.

NMFS, on December 7, 1979, rendered a Threshold Examination and Biological Opinion for Salem 1, concluding that continuation of the existing water intake activities at Salem Unit 1 was not likely to jeopardize the continued existence of the shortnose sturgeon, nor to destroy or adversely affect habitat that may be critical to the shortnose sturgeon.

Based on this finding by the National Marine Fisheries Service, the Director of Nuclear Reactor Regulation concluded that there would be no adverse effect on the continued existence of the shortnose sturgeon in the Delaware River due to long-term operation of Salem Unit 1. Consequently, that part of the Colemans' petitions which requested the suspension or revocation of the Salem Unit 1 operating license was denied in a Director's Decision issued February 7, 1980 (45 FR 9842, February 13, 1980).

In its Threshold Examination and Biological Opinion, however, NMFS indicated that insufficient information existed to make a determination for Salem 2 and Hope Creek 1 and 2. Therefore, the NRC staff prepared a biological assessment of the impact due to construction and operation of Hope Creek 1 and 2, the continued operation of Salem Unit 1 and the future operation of Salem Unit 2 on the shortnose sturgeon.⁵ A copy is attached and hereby incorporated by reference. (See Enclosure 2).

The biological assessment includes a description of the Artificial Island site and the intake and discharge systems for each of the four units existing or under construction at the site. The life history of the shortnose sturgeon is examined, including its spawning and early life history, its migratory movements, its food habits, its hardiness and susceptibility to capture. The history of the shortnose sturgeon in the Delaware River Estuary is also presented. Finally, potential impacts from construction and operation, *et*

⁴16 U.S.C. 1536(a) and (b).

⁵*Assessment of the Impacts of the Salem and Hope Creek Stations on Shortnose Sturgeon, Acipenser brevirostrum LeSueur.* Masnik, M.T. and Wilson, J.H. (Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C.) March 5, 1980.

seq., entrainment, impingement, acute thermal effects, chronic thermal effects, biocides, plume entrainment effects, gas bubble disease and coldshock are examined. Based on this extensive evaluation, the NRC staff has concluded that the continued operation of Salem Unit 1, the future operation of Salem Unit 2 and the construction and operation of Hope Creek Units 1 and 2 will not jeopardize the continued existence of the shortnose sturgeon.

II

By letter dated March 14, 1980, the NRC staff submitted its biological assessment to NMFS, setting forth its conclusions and stating that it believed that the information contained therein now provided an adequate basis for NMFS to resolve any concerns for adverse impact on shortnose sturgeon from the Salem and Hope Creek Stations.⁶ (See Enclosure 3).

On April 15, 1980, the NMFS issued a biological opinion on the NRC biological assessment. The NMFS opinion concludes that the operation of Salem Nuclear Station, Unit 1 and the construction and operation of Salem Unit 2 and Hope Creek Nuclear Station Units 1 and 2 as described in the NRC assessment are not likely to jeopardize the continued existence of the shortnose sturgeon in the Delaware River, nor are they likely to destroy or adversely affect habitat that may be critical to the shortnose sturgeon in the Delaware River. NMFS Opinion at 5 - 6. A copy is attached and hereby incorporated by reference. (See Enclosure 4).

On the basis of the information set forth in the NRC Staff's Biological Assessment of the shortnose sturgeon and the conclusions stated by the National Marine Fisheries Service, I have determined that the continued operation of Salem Unit 1, the future operation of Salem Unit 2 and the construction and operation of Hope Creek Units 1 and 2 are not likely to jeopardize the continued existence of *Acipenser brevirostrum* LeSueur, the shortnose sturgeon, a federally recognized endangered species.⁷ Consequently, the Colemans' requests are *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 Salem Nuclear Generating Station,

⁶By letter dated March 14, 1980, copies of the Staff's Biological Assessment were also provided to Mr. and Mrs. Coleman.

⁷Whether or not the incidental impingement of the two shortnose sturgeons at the Salem Unit 1 facility constituted a violation of the Endangered Species Act is a question which lies outside the purview of the agency. See 16 U.S.C. 1540(a) - (e) (1979). The NRC's obligation under the Act is to insure, in consultation with, and with the assistance of the Secretary that action authorized by NRC is not likely to jeopardize the continued existence of an endangered species. That has been done in this case.

Jersey 08079. A copy of this decision will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

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

**FOR THE NUCLEAR
REGULATORY COMMISSION**

**Harold R. Denton, Director
Office of Nuclear Reactor
Regulation**

**Dated at Bethesda, Maryland
this 18th day of April 1980.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**Docket No. 50-311
50-272**

**PUBLIC SERVICE ELECTRIC
AND GAS COMPANY, *et al.*
(Salem Nuclear Generating
Station, Units 1 and 2)**

April 29, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 which requested a (1) stay of issuance of the operating license for Salem Unit 2 pending conclusion of a hearing on a license amendment for Salem Unit 1, and (2) a stay of issuance of the Unit 2 operating license and Unit 1 license amendment until an environmental impact statement on storage of spent fuel is completed.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

If a petitioner is also an intervenor in a proceeding concerning the same issues as are raised in a 10 CFR 2.206 petition, those issues are properly resolved in the proceeding and not under 10 CFR 2.206.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

A petition under 10 CFR 2.206 should identify new information which would suggest a major change in facts to warrant further consideration of an issue.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated March 25, 1980, Samuel E. Donelson, as Mayor of Lower Alloways Creek Township, New Jersey, requested the Director of the Nuclear Reactor Regulation to: 1) stay issuance of the operating license for Salem, Unit 2 until conclusion of a hearing currently being

Units 1 and 2 and Hope Creek Nuclear Generating Station, Units 1 and 2, located at the Salem Free Public Library, 112 West Broadway, Salem, New conducted on a license amendment for Salem, Unit 1 to permit expansion of the spent fuel pool storage capacity; 2) stay issuance of the operating license for Unit 2 and the license amendment for Unit 1 until an environmental impact statement on storage of spent fuel at Salem Units 1 and 2 is completed or until a generic environmental impact statement on the national policy of the temporary or permanent storage of spent fuel at nuclear facilities is completed. Mr. Donelson's petition has been treated as a request for action under 10 CFR 2.206 of the Commission's regulations. For the reasons set forth below, I have determined Mr. Donelson's petition should be denied.

I

As the basis for his request that environmental impact statements be prepared, Mr. Donelson asserts that the enlargement of the spent fuel pool at Salem 1 and the potential long term de facto storage of spent fuel at Salem 1 and 2 have not received the environmental analysis, *i.e.*, consideration in an environmental impact statement, which he feels is required under the National Environmental Policy Appraisal (EIA) on January 15, 1979. An appraisal was prepared for the proposed licensing action of amending the Operating License No. DPR-70 for Salem Unit 1 to modify the storage capacity of its spent fuel pool. However, recognizing that the Licensee had indicated it also intended to make identical modifications to Salem 2, and in view of the fact that the Final Environmental Statement (FES) for the Salem Station addressed both facilities, the Commission Staff (Staff) addressed the cumulative environmental impacts of the expansion of both spent fuel pools in the EIA. The Staff concluded that proposed modifications would not significantly affect the quality of the human environment and that there would be no significant environmental impact attributable to the modifications other than those which had already been predicted and described in the Staff's FES for the facility.¹

¹"Environmental Impact Appraisal by the Office of Nuclear Reactor Regulation Relating to the Modification of the Spent Fuel Pools; Facility Operating License No. DPR-70 Construction Permit No. CPR-53 Public Service Electric and Gas Company; Salem Nuclear Generating Stations Unit 1 Docket No. 50-272" at 27.

In August 1979, the Staff issued its generic EIS on spent fuel storage.² On the basis of that analysis, the Staff concluded that increasing the capabilities of individual spent fuel storage pools was environmentally acceptable.³

It is clear the Staff has addressed, both generically and for the Salem facility specifically, the environmental effects of expansion of the spent fuel pool. Mr. Donelson has not provided any information which would suggest a major change in facts which would warrant any further consideration of this issue.⁴

II

To the extent that Mr. Donelson's concern about "the potential long term de facto storage of spent fuel at Salem Unit 1 and 2," represents a concern about the ultimate disposal of the spent fuel, that concern is currently being addressed in the Commission's Rulemaking Proceeding on the Storage and Disposal of Nuclear Waste. See 44 FR 61372 (October 25, 1979). The purpose of that proceeding is to:

(1) reassess [the Commission's] confidence that safe off-site disposal of radioactive waste from licensed facilities will be available; (2) determine when any such disposal or off-site storage will be available; (3) if disposal or off-site storage will not be available until after the expiration of the license of certain nuclear facilities, determine whether the wastes generated by those facilities can be safely stored off-site until such disposal is available.

The Commission, in its Notice of Proposed Rulemaking, also noted that licensing practices need not be altered during this proceeding nor should the issues being considered in the rulemaking be addressed in individual licensing proceedings. All licensing proceedings currently underway, however, would be subject to whatever final determination is reached.⁵ While the Commission's limitation on consideration of these issues is addressed only to licensing proceedings, I can perceive no reason why a different course should be followed in consideration of a request for action

²Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, NUREG-0575, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, August 1979.

³NUREG-0575, Vol. 1, *supra*, at 8-1 to 8-3.

⁴Director's Decision Under 2.206 in Public Service Company of Indiana, *et al.* (Marble Hill Nuclear Generating Station Units 1 and 2, DD-79-21, 10 NRC 717, 719 (1979).

⁵44 FR 61372, 61373.

under 10 CFR 2.206. Whatever rule is promulgated following the conclusion of the generic rulemaking proceeding will apply to all nuclear reactor facilities, including Salem 2.⁶

III

Mr. Donelson also asserts that in view of the fact that a licensing board is currently conducting a hearing on the proposed expansion of the spent fuel pool at Salem Unit 1, which involves consideration of various questions of safety and health, it would be "arbitrary, capricious and unreasonable to issue the operating license for Salem Unit 2 which would permit the same enlarged spent fuel pool...prior to the conclusion of the hearing on Salem Unit 1." Petition at 2.

The Commission Staff prepared a safety evaluation on the modifications proposed for the spent fuel pool at Salem Unit 1.⁷ On the basis of that evaluation, the Staff concluded that there was reasonable assurance that the health and safety of the public will not be endangered by operation with an expanded spent fuel pool and that such activity can be conducted in compliance with the Commission's regulations.⁸ That analysis is set forth in Section 9.4 and Appendix D to Supplement No. 4 to the Safety Evaluation Report for Salem Unit 2.⁹

Based on the Staff's review of modifications to the Unit 1 spent fuel pool and on the fact that the Unit 1 and Unit 2 pools are identical, the Staff concluded in Section 9.4 of the Safety Evaluation Report for Unit 2 that the modifications to the Salem Unit 2 spent fuel pool are acceptable from a health and safety and an environmental standpoint. The Licensee has advised, however, that it will not need, and presently does not plan, to use the modified high density racks for storing spent fuel until the end of the first fuel cycle of Unit 2. The NRC Staff will carefully examine the Commission's ultimate disposition of the ongoing proceedings regarding the re-racking of the spent fuel pool at Salem, Unit 1. If the Staff determines, on the basis of that examination, that further action is appropriate at the Unit

⁶Id.

⁷Safety Evaluation by the Office of Nuclear Reactor Regulation Relating to the Modification of the Spent Fuel Storage Pool; Facility Operating License No. DPR-70, Public Service Electric and Gas Company, Salem Nuclear Generating Station, Unit No. 1, Docket No. 50-272 (January 15, 1979).

⁸Safety Evaluation Report, *supra*, at 3-1, 4-1.

⁹NUREG-0517, Supplement No. 4 to the Safety Evaluation Report by the Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission. In the Matter of Public Service Electric & Gas Co. (Salem Nuclear Generating Station, Unit 2) Docket No. 50-311, April, 1980.

2 spent fuel pool, it will take such action.

Consequently, Mr. Donelson's request to stay the issuance of the operating license of Salem Unit 2 is *denied*.

A copy of this decision will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and in the local Public Document Room for the Salem Unit 2 facility located at the Salem Free Public Library, 112 West Broadway, Salem, New Jersey 08079. A copy of this decision will also be filed with the Secretary for review by the Commission in accordance with 10 CFR 2.206(c) of the regulations of the Commission. 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 the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 29th day of April 1980.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

**WESTINGHOUSE ELECTRIC
CORPORATION**
(Exports to the Philippines)

Docket No. 110-00495
Application No. XR-120
Application No. XCOM-0013

May 6, 1980

The Commission authorizes the issuance of licenses for the export of a nuclear reactor and certain components to the Republic of the Philippines, determining that the applications meet all export licensing criteria set forth in the Atomic Energy Act and that issuance of the licenses would not create unacceptable health, safety or environmental risks to United States territory or the global commons. The Commission also denies requests to stay its decision pending judicial review.

MEMORANDUM AND ORDER

The Commission has determined that License Applications XR-120 and XCOM-0013, which cover the export of a reactor and certain components to the Republic of the Philippines meet all the applicable export licensing criteria set forth in the Atomic Energy Act of 1954, as amended, and would not create unacceptable health, safety or environmental risks to U.S. territory or the global commons. The Commission therefore directs the Assistant Director for Export-Import and International Safeguards, Office of International Programs, to issue these licenses to the Westinghouse Electric Company.

The Commission has also denied requests to stay its decision on the Philippine license applications.

As more fully stated in their separate statements, Chairman Ahearne has dissented from the Commission's jurisdictional determinations and has abstained from the decision on the Philippine applications; Commissioner Bradford has dissented on the jurisdictional issues and has voted against issuance of the Philippine licenses.

It is so ORDERED.

By the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 6th day of May 1980.

OPINION OF COMMISSIONERS KENNEDY AND HENDRIE

I. Background

On November 18, 1976, the Westinghouse Electric Corporation filed Application No. XR-120 with the Commission seeking authorization to export a nuclear reactor to the Philippines for use in the Napot Point nuclear power project. On December 12, 1977, the Executive Branch recommended that NRC issue the license.^{1 2} Subsequently, on January 25, 1978, the State Department requested the Commission defer action on the application until "we have reviewed the legal and other implications of the recent allegations."³

The Department of State was referring, in part,⁴ to allegations that the proposed reactor site is unsuitable because of its proximity to volcanic formations.⁵ The site is also approximately twelve miles from the Subic Bay Naval Base and 40 miles from Clark Air Force Base, two U.S. military

¹Letter from Peter Tarnoff, Executive Secretary, U.S. Department of State, to Lee V. Gossick, Executive Director for Operations, NRC.

²Consistent with the nuclear export licensing procedures set forth in Executive Order 11902, the NRC awaited receipt of Executive Branch views before acting upon this application. This procedural requirement is codified in the Nuclear Nonproliferation Act of 1978 (NNPA), 42 U.S.C. 2155(a)(1). After enactment of the NNPA, E.O. 11902 was revoked.

³Letter from Dixon B. Hoyle, Director of the Office of Export and Import Control, U.S. Department of State, to Michael Guhin, Assistant Director for Export-Import and International Safeguards of NRC's Office of International Programs.

⁴There were also allegations pertaining to irregularities in the contracting process used by the Philippine Government.

⁵See, e.g., letter from Congressman Clarence Long to Secretary of State Cyrus Vance dated January 4, 1978, reproduced in "Foreign Assistance and Related Agencies Appropriations for 1979, Hearings before a Subcommittee of the Committee on Appropriations" — Part I, U.S. House of Representatives, 95th Cong., 2nd Sess. (1978) at 68-70.

installations. The State Department said it would provide its views to the NRC upon completion of its review.

In the meantime, construction activities proceeded at the site, using materials and equipment not requiring an NRC license. On August 3, 1978, while the Executive Branch continued its review of the facility application, Westinghouse filed Application No. XCOM-0013, seeking authorization to export several components needed to permit continued construction of the reactor. This application included some items covered by the facility application. On November 3, 1978, the Executive Branch advised the Commission that the component application satisfied all Atomic Energy Act licensing requirements and recommended issuance of the license.⁶ Consistent with its practice of not acting upon component applications until it had received Executive Branch views on the facility license, the Commission deferred action on the component application.

On April 19, 1979, the Commission received a petition for leave to intervene and requesting a hearing on application No. XSNM-1471,⁷ a Westinghouse application for the export of special nuclear material to the Philippines. The petitioners also requested the Commission to consolidate consideration of that application with applications XR-120 and XCOM-0013. The petition was filed on behalf of the Center for Development Policy, Jesus Nicanor P. Perlas, III, and the Philippine Movement for Environmental Protection. Petitioners specifically requested a hearing on seven issues: (1) the nature and magnitude of seismic and geological risks posed by the reactor site; (2) the adequacy of the reactor's seismic design; (3) the environmental impact of the proposed reactor and disposition of its spent fuel; (4) dangers to the health and safety of the Philippine citizens posed by the reactor; (5) dangers to the health and safety of U.S. citizens residing in the Philippines; (6) risks to the effective operation of U.S. military installations in the Philippines; and (7) generic safety questions posed by nuclear power plants, and by Westinghouse reactors in particular.⁸

⁶Letter from Louis V. Nosenzo, Deputy Assistant Secretary of State, to James R. Shea, Director of NRC's Office of International Programs.

⁷The Commission had published a notice of receipt of this application in the Federal Register of March 20, 1979, 44 FR 16987.

⁸Petitioners did not raise any issues pertaining to whether the Philippine applications met the licensing criteria relating to nuclear proliferation and safeguards set forth in Sections 127 and 128 of the Atomic Energy Act, 42 U.S.C. 2156 and 2157.

On September 28, 1979, the Executive Branch provided its views to the Commission on Application No. XR-120, concluding that the application met all the licensing requirements set forth in the Atomic Energy Act and recommending issuance of the license.⁹ The Executive Branch, as part of its submission, included an environmental assessment of the proposed reactor export.¹⁰

In response to the hearing request, on October 19, 1979, the Commission ordered further public proceedings on issues raised by the Philippine license applications XR-120 and XCOM-0013¹¹ to assist it in making the statutory licensing determinations required by the Atomic Energy Act and to advance the public interest.¹² The Commission invited members of the public to submit views on six specific generic issues relating to the proper scope of the Commission's jurisdiction to examine health, safety and environmental questions arising from construction and operation of exported nuclear facilities, and the appropriate procedural framework for considering such issues, if they were found to lie within NRC's authority. The Commission decided not to solicit comments at that time on issues related to the particular health, safety and environmental aspects of the Napot Point facility, and to defer consideration of such issues until the Commission ruled on the jurisdictional and procedural questions.

On January 29, 1980, after reviewing comments received from more than twenty individuals, groups, organizations, and agencies, the Commission met in public session to discuss jurisdictional issues. The Commission determined the scope of its jurisdiction (this decision is described in the Commission's Memorandum and Order), and decided to solicit additional public comments specifically focusing on the Philippine applications. On February 8, 1980, the Commission published an order requesting comment

⁹Letter from Louis V. Nosenzo to James R. Shea. Under section 126a.(1) of the Atomic Energy Act, 42 U.S.C. 2155a.(1), the Department of State is responsible for providing the Executive Branch's views to the NRC. The Department of State is required to solicit the views of the Departments of Commerce, Defense, and Energy, and the Arms Control and Disarmament Agency before making its submission to the NRC.

¹⁰On January 4, 1979, President Carter issued Executive Order 12114 entitled "Environmental Effects Abroad of Major Federal Actions." Under the Order the Executive Branch is required to prepare an assessment of the environmental effects resulting from an export of a nuclear reactor. Section 2-1 of the Order directs the Executive Branch agencies to establish procedures implementing this order. Before these procedures had been published in the Federal Register, the Executive Branch consistent with the intent of the Order, submitted an assessment of the Philippine application to the Commission. The implementing procedures were subsequently published in 44 FR 65560 (November 13, 1979)

¹¹10 CFR 110.84(d) provides that the Commission "will not grant a hearing request prior to receipt and evaluation of Executive Branch views on the license application." Because the Commission had not received Executive Branch views on Application No. XSNM-1471, a hearing was not ordered on that application.

¹²This Order was published in the Federal Register, 44 FR 61475 (October 25, 1979).

upon (a) the health, safety or environmental effects the proposed exports would have upon the global commons or the territory of the United States, and (b) the relationship of these effects to the common defense and security of the United States.¹³ The Commission received twelve submissions in response to this request.

II. The Commission's Jurisdiction Over Health, Safety and Environmental Impacts Occurring Abroad

The Petitioners in this proceeding argue that in making its export licensing determinations on the Philippine application, the Commission must consider the health, safety and environmental impacts of the proposed reactor export upon (a) Philippine citizens residing near the reactor site; (b) the 30,000 American citizens residing near the site; and (c) the effective operation of two U.S. military installations in the Philippines — Clark Air Force Base and the Subic Bay Naval Base.

This is not the first occasion upon which the Commission has been requested to review health, safety and environmental effects occurring abroad as part of its export licensing process. In the past four years the Commission has issued a series of opinions holding that the Commission lacks jurisdiction to consider such matters. In *Edlow International* (Export of special nuclear material to India), CLI-76-6, 3 NRC 563 (1976), three public interest groups asserted that the Commission was required to consider the health and safety risks that would occur in India if the United States were to authorize the export of reactor fuel to India for use at the Tarapur reactors. The Commission decided not to embark on such a review, stating:

[I]t would be extraordinary, as a matter of international law, to conclude that we had authority to address ourselves to, or attempt to regulate matters so clearly domestic to the Indian nation and within the purview of its own regulatory responsibilities. 3 NRC at 582.

The Commission reaffirmed that finding in *Westinghouse Electric Company* (export of a reactor to Spain), CLI-76-9, 3 NRC 739 (1976); *Babcock & Wilcox* (export of a reactor to West Germany), CLI-77-18, 5 NRC 1332 (1977); and *Edlow International* (export of special nuclear material to India), CLI-77-20, 5 NRC 1358 (1977). In *Babcock & Wilcox, supra*, a West German citizens group argued that the Commission was required to prepare an environmental impact statement assessing the impact of a proposed reactor export on the West German environment before acting on the license. In a lengthy opinion, the Commission held that the National Environmental Policy Act (NEPA) did not require the

¹³This order was published in 45 FR 10099 (February 14, 1980).

Commission to prepare an individual environmental impact statement assessing the site specific impacts of a particular proposed nuclear export on territory within the sovereign jurisdiction of a foreign government.

Because the Philippine applications raise foreign health and safety questions in a different context than those previously considered, the Commission decided to re-examine its foreign health and safety jurisdiction before acting on these applications.

In determining the scope of the Commission's jurisdiction, three legal questions must be resolved: (1) may or must the Commission evaluate health, safety and environmental effects that would occur in the recipient nation and do not affect U.S. interests¹⁴ or the global commons¹⁵ in making its export licensing determinations; (2) may or must the Commission evaluate the health, safety and environmental effects of exported facilities upon U.S. interests abroad in making its export licensing determination; and (3) may or must the Commission evaluate the health, safety, and environmental effects of exported facilities upon the global commons in making its export licensing determinations.

¹⁴We are defining "U.S. interests" to include military bases located abroad and large communities of American citizens residing on a permanent basis in the recipient nation. The term does not include impacts on American tourists or speculative foreign policy impacts such as harm to U.S. foreign relations with the recipient country that could result from an accident at a U.S. supplied reactor.

¹⁵We are defining "global commons" to include areas, such as the high seas, Antarctica, and the portions of the atmosphere that are not within the territorial jurisdiction of a single nation state. There is no international consensus on defining precisely where the territorial sea of the recipient nation ends and the global commons begins. Some nations' claims assert territory extending three miles into the sea; others claim twelve miles; and some claim "what international law allows." See Harris, *Cases and Materials on International Law* (1973), at 303-306. In its February 29, 1980 "Response to the Commission's Order of February 8, 1980," the Department of State suggest that to the extent that impacts may affect resources over which the coastal state exercises recognized jurisdiction (usually fisheries resources within 200 nautical miles of the coast) such impacts should be treated as impacts in a foreign jurisdiction and not on the global commons. The NRC staff in the Philippines cases prepared its analysis of radiological impacts on the global commons on the basis of a territorial sea extending 12 miles. In the absence of a clear international rule on this matter, we will use the twelve mile zone used by the NRC staff as a rough approximation of the bounds of the territorial sea figure for the purpose of analyzing the proposed Philippine export.

V

A. NRC authority to evaluate impacts occurring abroad that do not bear on U.S. interests or the global commons

1. Legal Considerations

Several of the public interest group commenters¹⁶ take the position that the Atomic Energy Act, NEPA, NNPA, and E.O. 12114 provide the Commission with legal authority to conduct a full-scale health, safety and environmental review that would include a consideration of impacts upon the citizens of the recipient nation. These commenters primarily rely upon Section 103(d) of the Atomic Energy Act, which provides that before the Commission may issue a reactor export license, it must determine that proposed export is not "inimical to the common defense and security or health and safety of the public."

The NRC staff, the Department of State (speaking on behalf of the Departments of Commerce, Defense and Energy, and the Arms Control and Disarmament Agency) and the nuclear industry commenters took the position that the NRC lacked the legal authority to consider health, safety and environmental impacts upon the citizens of the recipient nation.

We have reviewed the arguments and conclude that the Commission lacks the legal authority to consider health, safety and environmental impacts upon the citizens of the recipient nation. This conclusion is mandated by the traditional rule of domestic U.S. law that federal statutes apply only to conduct within, or having effect within, the territory of the United States, unless the contrary is clearly indicated in the statute.¹⁷

This rule of domestic U.S. law is linked to the fundamental international law concept of "territorial sovereignty" which governs the conduct of relations between nation states. The character of territorial sovereignty in international law has been described by The Permanent Court of International Justice in the following terms:

...The first and foremost restriction imposed by international law upon a State is that — failing the existence of a permissive rule to the contrary — it may not exercise its power in any form in the territory of another State.¹⁸

¹⁶A detailed description of the views of the participants on the issues raised in the Commission's October 19, 1979 order is set forth in Appendix I to SECY 80-20 and will not be repeated here.

¹⁷Restatement (Second) of Foreign Relations Law Section 38 (1972); *Steele v. Bulova Watch Company*, 344 U.S. 280, 285 (1952); *Foley Bros. v. Filardo*, 336 U.S. 281 (1949); *American Banana Company v. United Fruit Company* 213 U.S. 347 (1909).

¹⁸The *S.S. Lotus* (France v. Turkey [1927], P.C.I.J., ser. A, No. 10.

Regulation of economic and industrial activities taking place within a nation's territorial boundaries, to protect the health and safety of persons residing in that nation, is a recognized function of the territorial sovereign. Therefore, unless a nation agrees — by treaty or other appropriate international arrangement — to cede all or part of these functions to another nation or some other entity, attempts by a foreign nation to carry out such functions generally would be regarded as an unwarranted intrusion into the affairs of the territorial sovereign.

The courts have not hesitated to apply these principles in the environmental context. In *United States v. Mitchell*, 553 F.2d 996 (5th Cir. 1977), the court refused to apply the Marine Mammal Protection Act to an American citizen taking dolphins within the territorial waters of a sovereign foreign nation. The Court asserted:

When Congress considers environmental legislation, it presumably recognizes the authority of other sovereigns to protect and exploit their own resources. Other states may strike balances of interests that differ substantially from those struck by Congress. The traditional method of resolving such differences in the international community is through negotiation and agreement rather than through the imposition of one particular choice by a state imposing its law extraterritorially. 553 F.2d at 1002.

In the present proceeding, the Government of the Philippines has made it clear that a detailed health and safety review of the Napot Point Reactor conducted by agencies of the U.S. Government as part of the export licensing process, would be regarded as an intrusion into its sovereign responsibilities.¹⁹

In our review of the Atomic Energy Act and its legislative history outlined above, we are unable to find any clear statutory evidence that Congress expected the Commission to consider health, safety and environmental impacts on the citizens of the recipient nation.

Until recently, the Section 103(d) requirement that the Commission may not issue a reactor export license application if it determines that "issuance would be inimical to the common defense and security or to the health and safety of the public" was the sole determination that the Commission was required to make before issuing an export license. The legislative history of the 1954 Atomic Energy Act provides no additional guidance regarding what factors the Commission may or must take into account in making this determination. In particular, Congress never explicitly stated whether the

¹⁹See the November 15, 1979 *Statement of Views* filed with the Commission by the National Power Corporation (NPC), a corporation solely owned by the Government of the Republic of the Philippines. These views were forwarded by the Philippine Ambassador to the United States who stated the NPC views were those of "an agency of the Government of the Philippines."

public health and safety finding was intended to cover solely impacts on U.S. residents or whether it also applied to citizens of the recipient nation, or to Americans residing abroad. Prior to enactment of the NNPA, in making its inimicality determination, the Commission reviewed responses to eight questions which it posed to the Executive Branch on each license application. These questions focused primarily on safeguards and nonproliferation concerns, but permitted consideration of "other factors." As noted above, the Commission in a series of decisions issued in 1976 and 1977 stated that in making its licensing determinations it would not consider health, safety, and environmental effects that would occur in a recipient nation as a result of a U.S. nuclear export.

A primary purpose of the Nuclear Nonproliferation Act of 1978 was to give the Commission clear guidance on the criteria to be applied in its export licensing determinations. During the legislative development of the NNPA, Congress was well informed about the Commission's *Edlow* and *Babcock & Wilcox* decisions regarding foreign health, safety and environmental reviews.²⁰ If Congress disagreed with the Commission's interpretation of its foreign health, safety and environmental jurisdiction, the NNPA would have been a logical vehicle for addressing the issue²¹ The fact that the NNPA did not explicitly address many of the questions regarding the

²⁰The Commission provided copies of these opinions at the time they were issued to the Congressional committees with NRC oversight jurisdiction. Also see the statement of Senator Wallop during the Senate floor debate on the NNPA. 124 Cong. Rec. S.1081 (Daily Ed. February 2, 1978).

²¹Before enacting this legislation a variety of Congressional committees held numerous hearings over a three year period focusing in large part on what criteria should be applied by the NRC in making its export licensing determinations. See. e.g., Hearings on the Export Reorganization Act of 1975 before the Senate Government Operations Committee, 94th Cong., 1st Sess. (April 24, 30, and May 1, 1975); Hearings on Nuclear Proliferation: Future U.S. Foreign Policy Implications before the Subcommittee on International Security and Scientific Affairs of the House Committee on International Relations, 94th Cong., 1st Sess. (October 21, 23, 28, 30, November 4 and 5, 1975); Hearings on the Export Reorganization Act of 1976 (S. 1439) before the Senate Committee on Government Operations, 94th Cong., 2nd Sess. (January 19, 20, 29, 30, and March 9, 1976); Hearings on the Export Reorganization Act of 1976 (S. 1439, S. 3770 and H.R. 15273) before the Joint Committee on Atomic Energy, 94th Cong., 2d Sess. (June 22, July 28 and August 31, 1976); Hearings on the Nuclear Nonproliferation Act of 1977 (S. 897) before the Subcommittee on Energy, Nuclear Proliferation and Federal Services of the Senate Committee on Government Affairs, 95th Cong., 1st Sess. (April 1, 25, 29, May 6, 11, 13, 1977); Hearings and Markup on the Nuclear Antiproliferation Act of 1977 (H.R. 8638) before the Subcommittees on International Security and Scientific Affairs, and on International Economic Policy and Trade of the House Committee on International Relations, 95th Cong., 1st Sess. (April 4, May 19, 26, July 27, 29, August 1 and 2, 1977); Hearings on Nuclear Nonproliferation and Export Controls (S. 897 and S. 1432) before the Subcommittee on Arms Control, Oceans, and International Environment of the Senate Committee on Foreign Relations, 95th Cong., 1st Sess. (May 23, June 8 and 15, 1977); Hearings on the Nuclear Nonproliferation Policy Act of 1977 (S. 897 and S. 1432) before the Subcommittee on Energy Research and Development of the Senate Committee on Energy and Natural Resources, 95th Cong., 1st Sess. (June 10, September 13 and 14, 1977).

Commission's authority is therefore a strong indication that Congress did not believe the Commission had misconstrued the law.

After conducting this extensive examination of U.S. nonproliferation policy, Congress in fact added specific licensing criteria to the Atomic Energy Act, but also preserved the requirement that the Commission make the inimicality finding set forth in Section 103(d). The House Committee report commented upon the retention of this requirement:

[i]n the absence of unusual circumstances, the committee believes that any proposed export meeting the criteria set forth in subsection 127a. and, when it becomes effective, subsection 128a.,²² would also satisfy the common defense and security standard.²³

This report language indicates that the committee did not contemplate that NRC would use the "inimicality" finding to broaden the licensing requirements to include matters far beyond the explicit nonproliferation criteria set forth in the act.²⁴

The Senate report is more explicit, clearly rejecting any thought that non-U.S. interests would be considered. It states:

Although the NRC finding on the health and safety of the public refers only to the American public, it should be recognized that certain overseas activities could pose a threat to Americans.²⁵

This conclusion that Congress did not intend the Commission to consider impacts upon foreign nations is fortified by provisions contained in Section 126 of the Atomic Energy Act concerning the expected timing of various steps in the nuclear export licensing process. These provisions were added to the Act by the NNPA. The procedures provide that the Executive Branch will furnish its views to the NRC on an export licensing application within 60 days of its receipt of the application, unless the Secretary of State determines that it is in the national interest to provide additional time for

²²Section 127 and 128 of the Atomic Energy Act set forth specific export licensing criteria. These criteria relate to nuclear nonproliferation and safeguards concerns and do not pertain to health, safety and environmental concerns.

²³H. Rep. 95-587, 95th Cong., 1st Sess., at 21.

²⁴Referring to this NNPA legislative history as an aid to interpreting the meaning of the "common defense and security and public health and safety" finding required by the Atomic Energy Act of 1954 is consistent with the most recent Supreme Court decisions which have considered the use of post-enactment legislative history. The Court in *Seatrain Shipbuilding Corporation, et al. v. Shell Oil Company*, U.S. , 48 U.S.L.W. 4149, 4156 (February 20, 1980), stated that while legislative history developed by a "subsequent Congress cannot override the unmistakable intent of the enacting one, *International Brotherhood of Teamsters v. United States*, 431 U.S. 324, 359 n.39 (1977), such views are entitled to significant weight, *NLRB v. Bell Aerospace Company* 416 U.S. 267, 275 (1974), and particularly so when the precise intent of the enacting Congress is obscure."

²⁵S. Rep. 95-467, 95th Cong., 1st Sess., at 13.

consideration of the application.²⁶ After receiving the Executive Branch views the Commission has 120 days to make its licensing determination.²⁷ These time limits are expanded if the Commission orders public proceedings on the application. In such a case the NRC has 60 days after the termination of the proceeding in which to act. The full scale environmental review that would be comparable to that performed in NRC domestic licensing proceedings which several commentators in these proceedings urged the Commission to perform could not be completed within that time frame. The Congress was well aware that the domestic environmental review of a nuclear power plant typically extends over several years.²⁸ Because such a prolonged review would be fundamentally inconsistent with the time limits for export licensing set forth in the NNPA, we conclude that Congress could not have contemplated such a review if it expected the NRC to act promptly on export license applications.

The Commission could adopt a policy of routinely expanding the time limits on each reactor export application by ordering a public proceeding on each such application and conducting a detailed health, safety and environmental review as part of the proceeding. This approach would give the NRC 60 days after completion of the review to act upon the application. Although such a procedure would be legally possible under a strict reading of the statute, it would conflict with the clear expectation of Congress that reviews would ordinarily be completed in a much shorter time frame. Therefore, we believe that such an approach should not be implemented²⁹ in the absence of a clear congressional mandate to do so.

²⁶See Section 126a.(1) of the Atomic Energy Act, 42 U.S.C. 2155(a)(1).

²⁷These maximum limits were, by no means, expected to be the norm — the legislative history contains expression of hope that the process would usually be shorter.

²⁸See, e.g., Testimony of Lee V. Gossick, NRC's Executive Director for Operations on Proposed Nuclear Powerplant Siting and Licensing Legislation Before the Joint Committee on Atomic Energy, 94 Cong. 1st Sess. (June 25, 1975) at 178; Nuclear Regulatory Commission Annual Report 1977 at 17. The NRC staff estimates that at least two years would be required to conduct a detailed health, safety and environmental review in the export licensing context. "NRC Staff's Submission in Response to Commission's Order Dated October 19, 1979" at 17.

²⁹Another indication that Congress did not expect the NRC to conduct a foreign health, safety, and environmental review is the House of Representatives' defeat on July 27, 1978, by a vote of 266-106, of an amendment offered by Congressman Cavanaugh to a bill extending the life of the Export-Import Bank (H.R. 12157). In cases where the Export-Import Bank was considering the financing of a nuclear reactor export, the proposed amendment would have required NRC to prepare an analysis describing the nuclear regulatory organization and practices of the recipient country, and indicating the extent to which the recipient country's health and safety standards were consistent with those established by NRC and with any applicable International Atomic Energy Agency (IAEA) standards and recommendations. Several statements were also made during the floor debate that even this limited type of review, which would not require site visits, would constitute an unwarranted intrusion into foreign sovereignty.

Other portions of the NNPA, which specifically pertain to environmental protection, do not compel the NRC to undertake foreign environmental reviews as part of the export licensing process. In Section 2(d) Congress stated a national policy of cooperation with foreign nations in identifying and adopting suitable technologies for energy production that would be "consistent with the economic and material resources of those nations and environmental protection."³⁰ Section 501 of the Act implements this policy by providing that the United States "shall endeavor to cooperate with other nations...in protecting the international environment from contamination arising from both nuclear and non-nuclear energy activities...."³¹ The President is required to report annually to Congress on how this section of the Act is being implemented.

It is significant that when this statute, which sets forth the most recent and comprehensive definition of the nuclear export process, speaks of foreign environmental matters it does so in terms of cooperative efforts. There is no reference to conducting an NRC health, safety and environmental review as part of the export licensing process. The legislative history of these provisions also fails to reveal a Congressional intent that the NRC conduct such reviews before making its export licensing determinations.

Various commenters also argued that the National Environmental Policy Act (NEPA) requires the Commission to conduct a review of the impact of the proposed reactor on the Philippine people. The NEPA argument is premised on an expansive reading of Section 102(2)(F) of that Act which requires federal agencies to the fullest extent possible to:

Recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment.

Various provisions of the NNPA which pertain to cooperation with foreign nations on environmental matters are also cited.

³⁰22 U.S.C. 3201(d).

³¹22 U.S.C. 3261.

In the *Babcock & Wilcox* opinion, 5 NRC 1332 (1977), the Commission carefully analyzed NEPA and its legislative history, and determined that NEPA did not specifically provide for assessments of impacts occurring in foreign countries. The Commission reasoned that reading NEPA to require such assessments would constitute an extraterritorial application of U.S. law which would only be authorized if Congress had clearly expressed such an intention. The Commission reviewed the text and legislative history of NEPA and found no such expression of Congressional intent. Subsequently, the Department of Justice examined the scope of NEPA and reached the same conclusion.³² Consistent with the Department of Justice views, Executive Order 12114, which mandates a procedure for assessing environmental impacts occurring abroad which may result from certain major federal activities, significantly does not cite NEPA as legal authority for the President's action. Instead, it states that the order: "[W]hile based on independent authority...[it] furthers the purpose of the National Environmental Policy Act...." In sum, we find no basis for modifying the Commission's *Babcock & Wilcox* opinion.³³

Finally, we have examined E.O. 12114. That Order specifically requires Executive Branch agencies to prepare an environmental assessment of nuclear reactor exports because they "significantly affect the environment of a foreign nation."³⁴ The stated purpose of this order "is to enable responsible officials of federal agencies having ultimate responsibility for authorizing and approving actions encompassed by this Order to be informed of pertinent environmental considerations and to take such considerations into account, with other pertinent considerations of national policy, in making decisions regarding such actions."³⁵ However, Section 2-5(v) of the Order specifically exempts NRC export licensing decisions from the provisions of the Orders. Thus, under E.O. 12114 only the Executive Branch recommendation to the Commission on whether a given license should be issued is covered.

³²The Justice Department views are set forth in the *Legal Times of Washington*, October 9, 1978 at 30.

³³The Council on Environmental Quality argues in its January 25, 1980 submission to the Commission that even if NEPA is read not to require an examination of impacts arising in a foreign country, the Commission as a matter of discretion could elect to analyze and consider such impacts because such a review would be consistent with goals and policies set forth in Section 102(F). We disagree with the CEQ analysis because in our view the rule of statutory interpretation discussed above, which prohibits application of U.S. law extraterritorially without a clear Congressional mandate, precludes a discretionary review.

³⁴See 2-3(c)(1) of the Order.

³⁵*Id.* 1-1.

In sum, we are unable to find any Congressional assertion that the NRC is to take into account health, safety, and environmental matters that do not affect U.S. interests or the global commons.

B. NRC Authority to Evaluate the Health, Safety and Environmental Effects of Exported Facilities Upon U.S. Interests Abroad

1. Legal considerations

Public interest group commenters in the instant proceeding took the position that Section 103(d) of the Atomic Energy Act, which sets forth the inimicality determination which the NRC is to apply in its export licensing process (discussed in detail above), requires the Commission to consider the health, safety and environmental effects resulting from a reactor export which could affect U.S. interests such as U.S. military bases located near the proposed reactor site, or large communities of American citizens residing abroad.

The commenters suggested a number of U.S. interests which could be implicated by construction and operation of the proposed Napot Point reactor. Several commenters noted that two U.S. military bases are located within forty miles of the reactor site. They argued that an accident at the plant could be inimical to the common defense and security of the United States because radioactive releases from the plant might contaminate the bases, rendering them unusable for an indefinite period. The argument was also made that the proposed Philippine export could adversely affect the public health and safety of the more than 30,000 American citizens residing near the proposed reactor site. These commenters also noted that reactor exports are generally financed by the U.S. Government (Export-Import Bank), that citizens of the recipient nation therefore tend to view U.S. exported reactors as American projects, and that the U.S. would be blamed for any accident thereby jeopardizing U.S. relations with the recipient nation. One commenter stated that the United States would be severely criticized if any accident occurred, and raised the possibility that claims might be filed against the United States for compensation, for aid in clean-up operations, and for damage repair.

The Department of State, citing the Commission's *Edlow* and *Babcock & Wilcox* decisions, took the position that the Commission generally lacks authority to consider health, safety and environmental impacts that would occur in the recipient country as a result of a United States nuclear export. However, the Department recognized that before issuing an export license the Commission must determine that the export would not be inimical to the common defense and security of the United States or to the health and

safety of the American public. The Department asserted that the Commission has the discretionary authority to examine health, safety and environmental effects occurring in a foreign country if the impacts are so great that they threaten (1) U.S. relations with a recipient country or (2) jeopardize important U.S. security or defense interests. The Department of State recognized that the Commission must make an independent determination whether the risks in a particular situation warrant such a review. Citing its foreign policy responsibilities and expertise, the State Department asserted that the Commission should be guided largely by the Executive Branch judgment on whether the risks rise to such a level.

The NRC staff concluded that the Commission is authorized to consider impacts on U.S. interests abroad, especially on continued use of U.S. military bases, but advocated that any such review be carefully tailored to avoid unnecessary intrusions upon the sovereignty of the recipient nation.

Nuclear industry commenters argued that the Commission lacks jurisdiction to consider health, safety and environmental impacts, even if U.S. interests may be affected. In their view, any consideration of health, safety and environmental impacts occurring in the recipient nation would constitute an unwarranted invasion of the recipient nation's sovereignty. They also noted that nothing in the legislative history of the Atomic Energy Act or the NNPA indicates that the Commission is to "speculate" on the impacts of exported nuclear commodities of U.S. military bases located abroad.

We have examined the Atomic Energy Act and NEPA to ascertain whether the Commission is required or permitted to examine health, safety and environmental effects occurring abroad that could affect U.S. interests. We believe that the Commission's legislative mandate neither compels nor precludes examination of such impacts. The decision whether to examine such effects is thus a question of policy to be decided as a matter of agency discretion.

Before licensing an export, the Commission must find that a reactor export is not "inimical to the common defense and security or the public health and safety." The Commission's consistent interpretation of this phrase is that it means "common defense and security of the *United States* or the public health and safety of the *United States*" (emphasis supplied).³⁶ However, this interpretation does not definitively answer the question whether the "United States" is to be construed to mean only U.S. territory or whether it may be interpreted more broadly to include U.S. interests which may arise in other nations, such as military bases.

³⁶10 CFR 110.2(g) and (ii).

The legislative history of this provision also provides little guidance on what Congress intended. The House Committee Report on the NNPA (discussed earlier in this opinion at pages 639-640) suggests that the Commission is to focus on safeguards and nonproliferation concerns in making the inimicality finding, but may take other factors into account in "unusual circumstances." In circumstances where an exported reactor is to be sited near a U.S. military facility or a large community of American citizens residing abroad, it could be argued that this would constitute "unusual circumstances" and that the Commission should in its discretion examine the possible effects upon U.S. military operations or the health and safety of the U.S. citizens.

The Senate Committee Report on the NNPA (discussed earlier in this opinion at page 640) is more explicit than the House Committee Report. It states that, in making its Section 103 determinations, the Commission should recognize "that certain overseas activities could pose a threat to Americans." Although arguable, this could be read as an indication that the Commission is required to take into account impacts abroad that affect U.S. interests, it is not entirely free from ambiguity. It could instead be read more narrowly to indicate that if a proposed reactor export to Canada or Mexico is to be located near the U.S. border, the U.S. must consider the impacts on U.S. citizens and territory. The Commission has consistently taken the position that in such a case the Commission would consider the impacts, and perhaps it is to this policy that the Committee's statement was addressed.

In sum, based on a reading of the text of Section 103 and its legislative history we cannot find a clear mandate from the Congress that the Commission must take into account health, safety or environmental interests that affect U.S. interests abroad; nor can one find a clear expression that the Commission is not to examine such impacts.

We also examined NEPA to determine whether NEPA required the Commission to examine environmental impacts that could affect clearly defined U.S. interests abroad. The statute and its legislative history do not address this issue. The Commission and, to our knowledge, the courts have never directly addressed the issue of whether NEPA requires an assessment of environmental impacts that affect U.S. interests abroad.³⁷

³⁷There are, however, a series of cases holding that NEPA requires an examination of health and environmental effects that would occur within the territorial U.S. as a result of a major federal action in a foreign nation. *Sierra Club v. Adams*, 578 F.2d 289 (D.C. Cir. 1978); *Wilderness Society v. Morton*, 463 F.2d 1261 (D.C. Cir. 1972); *National Organization for Reform of Marijuana Laws v. U.S. Department of State, et al.*, 452 F. Supp. 1226 (D.D.C. 1978).

Based on the principle that U.S. laws should not ordinarily be construed to apply extraterritorially, the absence of a clear congressional expression in either the Atomic Energy Act or NEPA would preclude an examination of impacts that affect U.S. interests abroad. However, it could be argued that two legal principles may permit limited exceptions to this doctrine where clear interests of the United States and its citizens are implicated. The first of these concepts is the widely accepted principle that a state may exercise jurisdiction over its nationals, with respect to their conduct whether within or outside its territory.³⁸ The second of these concepts, the "protective principle" typically arises in the criminal law field, where jurisdiction over an offense may be determined by reference to the national interest injured by the offense.³⁹ Arguably this doctrine would permit an examination of U.S. interests abroad because the United States has a national security interest in having continued access to the Clark and Subic Bay military installations. While these principles do not override the sovereignty principle discussed above in guiding our interpretation of ambiguous statutes, they can serve to remove the presumption otherwise created by the sovereignty principle and thus permit a "presumption-less" look at the operative statute. In this case, because the Atomic Energy Act and NEPA are ambiguous on whether the Commission must consider impacts on U.S. interests abroad, under these principles the Commission could either examine or ignore these impacts so long as its basis is defensible on policy grounds.⁴⁰

2. Policy Considerations

Based on the legal conclusion reached above the Commission must resolve a central policy issue: should the Commission consider health, safety and environmental impacts on U.S. interests abroad, such as military bases and large communities of American citizens residing in the recipient nation?

We recognize that there could be advantages to considering impacts on U.S. interests abroad. For example, because the health, safety and environmental impacts of a proposed reactor project on U.S. interests abroad will to a large extent be identical to the impacts on the citizens of

³⁸Restatement (Second) Foreign Relations Law of the United States Section 30 (1972).

³⁹*Id.* 33.

⁴⁰The position we are taking here is consistent with the position taken by the United States in *Westinghouse Electric Corporation v. Hendrie*, Civil No. 79-2060 (D.D.C. 1979). In that case the Government argued that the NRC had the authority to consider impacts upon U.S. military bases abroad. In this opinion we explain why as a policy matter we believe the Commission should not exercise that authority.

the recipient nation, an NRC review of these issues may be helpful to the recipient country since it could alert the recipient to design-related or siting difficulties. In addition, such a review could increase the confidence that the citizens of the recipient state might have in the safety of the U.S. supplied reactor. Nonetheless, because of countervailing policy arguments we believe the Commission should not consider health, safety and environmental effects on U.S. interests abroad in its export licensing decisions.

The primary basis for our position is that no matter how thorough the NRC review, the Commission still would not be in a position to determine that the reactor could be operated safely. We reach this conclusion because the NRC review would inherently have to be less complete than its review of domestic reactor applications. For example, site visits by NRC technical experts, including verification of data on site characteristics, which are an essential element of the domestic review process, could not be conducted without the consent of the foreign government. Such reviews could be considered an unwarranted intrusion into the sovereignty of the recipient nation.⁴¹ Some commenters suggested that the Commission review at a minimum should include a review of the proposed reactor design. Even though this conceivably could be done without intruding upon foreign sovereignty, such a review would also be exceedingly difficult. In most cases the recipient nation purchases only a portion of the required equipment for the reactor from the United States. Thus, a design review would require the NRC to examine the interface of U.S. supplied equipment with systems and components produced in the recipient nation or procured from third-country suppliers. Each review would be unique and NRC staff experience gained from its review of U.S. reactor designs might be of limited value.

Even more significantly, because the NRC has no continuing regulatory jurisdiction over activities associated with the reactor project once the export license is issued and commodities are shipped, the NRC cannot inspect the plant as it is being constructed to ensure that the plant is being built according to specifications. Moreover, the NRC has no control over the selection and training of the individuals who will manage and operate the reactor, and could not periodically inspect the plant once it is operating. In the absence of such controls, it is our view that the NRC would be unable to make a meaningful safety determination. A partial review could in fact have adverse results because it could give the misleading impression that the NRC is assuring the safety of the facility as eventually constructed, and is assuming some responsibility for its safety. This could lead recipient

⁴¹The Executive Branch environmental assessments prepared pursuant to E.O. 12114 are compiled without the benefit of a site visit.

nations to place undue reliance upon the NRC review and to reduce their own efforts and expenditures to develop an indigenous capability to construct, operate, and maintain the plant safely.

An additional concern is that any detailed review of the health, safety and environmental impacts by the NRC would place a strain on NRC resources, already fully committed to domestic nuclear licensing activities. Because as noted above, the NRC could not make a meaningful safety determination, no matter how detailed the NRC review, we believe the limited NRC resources should be devoted to domestic activities.

Another factor in our decision involves the foreign policy implications of an NRC health, safety, and environmental review. Any NRC review could have severe foreign policy repercussions because it could be construed as a declaration that a recipient government is incapable of determining what is in the best interests of individuals residing in its country in the sphere of health, safety and the environment. Under international law the recipient country is responsible for the health and safety of all individuals residing in its territory.⁴²

We further believe the best means to enhance safety in the recipient country is through international cooperative efforts, either through the IAEA or through bilateral agreements between the United States and the recipient nation, rather than through health, safety, and environmental review of individual proposed exports. The NRC pursuant to its NEPA obligations and existing bilateral and multilateral cooperation agreements, exchanges nuclear health, safety, and environmental information with other countries, and encourages adoption of health and safety standards and establishment and improvement of safety and regulatory practices by foreign governments. The NRC currently has agreements with eighteen countries including the Republic of the Philippines. As part of these exchanges the NRC provides notification of its decisions affecting design and operation of reactor types similar to those exported; analyses of

⁴²It is a basic principle of international law that one of the incidents of sovereignty is that a nation legislates solely regarding its national affairs, and one nation cannot impose a rule on another nation absent an agreement to the contrary. See 45 Am.Jur.2d., International Law 38 at 379. As we noted earlier, United States law is construed to apply only within U.S. territory unless Congress clearly indicates otherwise. Accordingly, all foreign nationals are considered "under the protection of the sovereign while they are within his territories." 45 Am.Jur.2d., International Law 75 at 412. It is the recipient country that is therefore responsible for the protection of Americans residing abroad. For example, in the Philippines export case, the Philippine government has recognized its responsibility for assessing "the health, safety, and environmental impacts arising from the construction of the PNPP-1," and points out that it has taken steps to assure the safety of the plant. Statement of Views of the National Power Corporation, November 8, 1979, at 5-6.

problems similar to those encountered abroad, if requested; and copies of NRC standards, environmental impact statements and other health and safety documentation. The agreements thus offer a framework for providing a significant amount of safety assistance and advice to countries embarking on commercial nuclear power programs. NRC also arranges for representatives of foreign regulatory organizations to be assigned to the NRC technical staff to work with NRC safety experts for periods of from four months to two years to gain experience in safety and regulatory matters. Representatives of foreign countries also attend 1-3 week NRC training courses on a range of regulatory topics. NRC staff members also participate in IAEA reactor safety missions visiting developing countries for varying periods of time to advise on safety matters related to siting, construction and operation of nuclear reactors.⁴³

Finally, a policy decision not to consider impacts on U.S. interests does not mean that those impacts will be ignored in the export licensing process. Under E.O. 12114, the Executive Branch will prepare an environmental assessment for each reactor export and will consider the impacts on U.S. military bases and large communities of U.S. citizens residing abroad in making its recommendation to the Commission whether a given export is inimical to the common defense and security or public health and safety. The Departments of State and Defense are both involved in the review and with the assistance of the Department of Energy, have ample ability to determine whether the health, safety, and environmental impacts would be of such severity that they could be inimical to the common defense and security of the United States or the health and safety of the American public.⁴⁴ The NRC intends to participate in the E.O. 12114 reviews when requested to do so by the Executive Branch. In that context, the Commission will make available expertise to assist the Executive Branch in evaluating potential impacts upon U.S. interests abroad, even though the Commission will not make a review of this information part of its consideration of individual export license applications.

⁴³A more detailed description of these efforts is set forth in SECY 78-365 at 10-17. The specific assistance provided to the Philippine Government is set forth in Section III(B) of this opinion.

⁴⁴Under Section 126a. (1) of the Atomic Energy Act, 42 U.S.C. 2155a. (1), the Commission may not grant a license if the Executive Branch informs the NRC that a proposed export is inimical to the common defense and security.

C. NRC Authority to Evaluate the Health, Safety and Environmental Effects of Exported Facilities Upon the Global Commons

1. Legal considerations

We have examined both the Atomic Energy Act and NEPA to determine whether either the text or legislative histories of those statutes require an assessment of the impacts on the global commons resulting from export licensing decisions. We found no legislative guidance and no directly relevant judicial precedents, and conclude that the Commission is neither required nor precluded from considering impacts on the global commons.

Consistent with our legal analysis regarding the consideration of U.S. interests abroad, we do not read ambiguities in the Atomic Energy Act and NEPA to preclude reviews of impacts on the global commons that would result from a proposed reactor export. In contrast to impacts that occur in territory where the recipient nation has a paramount sovereign interest, no country by definition has jurisdiction over the global commons. Accordingly, less weight should be given to principles of sovereignty in determining the scope of the Commission's jurisdiction. We conclude that provided that NRC reviews do not include visiting sites within the recipient nation to gather information, or otherwise intrude upon the sovereignty of a foreign nation, consideration of impacts upon the global commons is legally permissible.

2. Policy considerations

Since the mid-1970's the Commission has taken into account in its export licensing decisions health, safety and environmental impacts on the global commons.⁴⁵ The Commission has adopted this policy because these impacts occur in areas not within the sovereign jurisdiction of a single nation state. By its very nature, protection of the global commons cannot be the sole responsibility of any single nation.⁴⁶ The United States is a major user of

⁴⁵In 1974, the Sierra Club brought suit against the Atomic Energy Commission, the NRC's predecessor, in the United States District Court for the District of Columbia alleging that the AEC was required to prepare environmental impact statements on proposed nuclear exports. The case was settled when the AEC agreed to prepare a generic environmental impact statement assessing the impact of exporting nuclear power facilities on U.S. territory, and the global commons. *Sierra Club v. AEC*, 4 ELR 20685 (D.D.C. 1974). The resulting statement is the Final Environmental Statement on U.S. Nuclear Power Export Activities, ERDA-1542 (1976).

⁴⁶The recipient government, of course, also has the responsibility for protecting the global commons.

the global commons and has a responsibility to see that its own activities do not unnecessarily degrade the environmental quality of such areas.

We have already explained that whatever Commission review is undertaken must be conducted in a manner which does not constitute an unwarranted intrusion into the sovereignty of the recipient nation. This precludes in our view a comprehensive review of impacts on the global commons. For purposes of the Commission's assessment, this means that NRC officials would not visit the reactor site. The NRC review would be based upon generally available literature, such as generic environmental impact statements prepared by the Commission and other federal agencies, information contained in environmental assessments prepared by the Executive Branch pursuant to E.O. 12114, and calculations prepared by the NRC staff based on available analytical models for assessing the impacts of releases of radioactive and chemical effluents.

III. The Philippine Applications

In its Memorandum and Order the Commission has set forth the scope of its consideration of health, safety, and environmental effects arising from exports of nuclear reactors. Now we turn to the merits of the two Philippine applications pending before the Commission — XR-120 (reactor) and XCOM-0013 (components).

The Atomic Energy Act of 1954, as amended by the NNPA, provides that the Commission may not issue a license authorizing the export of a reactor unless it finds based on a reasonable judgment of the assurances provided that the criteria set forth in Sections 127 and 128 of the Act are met.⁴⁷ The Commission must also determine that the export would not be inimical to the common defense and security or health and safety of the public⁴⁸ and would be pursuant to an Agreement for Cooperation. We believe that each of these licensing criteria and requirements is met by license application XR-120.

With respect to the proposed component export, the Commission may not issue a license unless it determines that the three specific criteria outlined in Section 109(b) of the Act are met, and also determines that the export would not be inimical to the common defense and security. We believe that license application XCOM-0013 meets each of these criteria and requirements.

⁴⁷Section 126.(a) of the Atomic Energy Act, 42 U.S.C. 2155(a)(2).

⁴⁸Section 103.(d) of the Atomic Energy Act, 42 U.S.C. 2133 (d).

A. Applying the Export Licensing Criteria Set Forth in Sections 127, 128 and 109(b) of the Atomic Energy Act

1. XR-120 — the reactor 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. The Department of State,⁴⁹ and the NRC Staff⁵⁰ have concluded that these criteria are met.⁵¹

In brief it is our view that the Philippine Government has given the United States adequate assurance that (1) IAEA safeguards will be applied to the exported equipment;⁵² (2) the reactor and special nuclear material produced through the use of the reactor will not be used for any nuclear explosive device or for research on or development of any nuclear explosive device;⁵³ (3) that adequate physical security measures will be maintained at the facility;⁵⁴ (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;⁵⁵ (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;⁵⁶ and (6) no sensitive technology shall be exported unless

⁴⁹See the Memorandum from Louis V. Nosenzo to James R. Shea, dated September 28, 1979.

⁵⁰See the Memorandum from James R. Shea to the Commission, dated March 14, 1980 (SECY 80-142).

⁵¹No commenter in the Commission's public proceedings has suggested that these requirements are not fulfilled.

⁵²The Philippines is a Party to the Treaty on the Nonproliferation of Nuclear Weapons (NPT), depositing its instrument of ratification on October 5, 1972. Under Article III(1) of the NPT, all nuclear facilities in the Philippines must be placed under IAEA safeguards.

⁵³By ratifying the NPT, the Government of the Philippines committed itself not to use or develop nuclear explosive devices for any purpose.

⁵⁴The Commission has promulgated regulations, 10 CFR 110.43, providing that physical security measures adopted by a recipient nation must at a minimum, assure protection comparable to the measures set forth in IAEA publication INF/CIRC/225/Rev. 1 entitled "The Physical Protection of Nuclear Material." In a letter to the United States Department of Energy, dated October 12, 1979, the Government of the Philippines assured the United States that the physical security measures to be applied at the Napot Point facility will be at least comparable to those set forth in the IAEA document.

⁵⁵Articles XI(3) and IX(H) of the Agreement for Cooperation Between the Government of the United States of America and the Government of the Republic of the Philippines concerning civil uses of Atomic Energy, signed at Washington, D.C. June 13, 1968, T.I.A.S. 6522.

⁵⁶This requirement is satisfied by Article IX(F) of the U.S.-Philippines Agreement for Cooperation.

the foregoing five criteria are applied to the export.⁵⁷

Section 128 of the Atomic Energy Act which became fully effective on March 10, 1980, imposes the additional requirement that the United States have adequate assurance that IAEA safeguards are being maintained with respect to all nuclear installations in the recipient country.⁵⁸ The Philippines, by signing the NPT, has agreed to place all nuclear installations in that country under IAEA safeguards, satisfying the Section 128 requirement.

2. The component application — XCOM-0013

Section 109(b) sets forth three criteria that are to be applied to proposed exports of components. The United States must have adequate assurances that the components: (1) will be placed under IAEA safeguards; (2) will not be used for research and development of nuclear explosive devices; and (3) will not be retransferred to the jurisdiction of another nation or group of nations unless the prior consent of the United States has been obtained. These criteria are virtually identical to criteria 1, 2, and 4 of Section 127 which the Commission reviewed with respect to the proposed reactor export. For the reasons already stated, we conclude that these requirements are met with respect to the components covered by XCOM-0013.

B. The "Common Defense and Security and Public Health and Safety" Requirement

Section 103(d) of the Atomic Energy Act requires that, before issuing a license authorizing a nuclear reactor export, the Commission must determine that issuance would not be "inimical to the common defense and security or to the health and safety of the public." Both the NRC staff⁵⁹ and the Executive Branch⁶⁰ have concluded that the Commission can make the required findings with respect to the reactor and component applications and recommend issuance of the licenses.

Some commenters in this proceeding have argued that the proposed reactor export is inimical to the common defense and security and public health and safety because of health, safety, and environmental effects that the proposed export could have upon the two U.S. military bases located in

⁵⁷The proposed export does not involve the transfer of sensitive nuclear technology. Therefore, criterion 6 is not applicable here.

⁵⁸This requirement applies only to non-nuclear weapon states, as defined in the NPT.

⁵⁹See fn. 47, *supra*.

⁶⁰See the Memorandum from Louis V. Nosenzo to James R. Shea, on XR-120, dated September 28, 1979; See, the Memorandum from Louis V. Nosenzo to James R. Shea on XCOM-0013, dated November 3, 1978.

the Philippines and American citizens residing near the reactor site. The Commission has concluded in its Memorandum and Order that it would confine its review to health, safety, and environmental effects on the global commons and United States territory.

A primary rationale for that conclusion is that more comprehensive reviews could intrude upon foreign sovereignty and that the responsibility for protecting the health and safety of U.S. citizens residing abroad resides with the recipient nation.⁶¹ Earlier in our opinion we observed that the fact that the NRC would not examine impacts on U.S. military bases abroad or on communities of Americans residing near the reactor site did not mean that those impacts would not be examined in the export licensing process. We noted that the Executive Branch would consider these impacts in preparing an environmental assessment pursuant to E.O. 12114 and would take this information into account in making its recommendation to the Commission on whether an export might be considered inimical to the common defense and security and public health and safety.

The Executive Branch in reviewing the Philippine reactor application has taken these impacts into account in making its recommendation that the Commission issue the reactor license. The Executive Branch transmittal to the NRC specifically states:

⁶¹In the case of the Philippines, its government recognizes the importance of conducting a full health and safety review on this proposed facility. In response to concerns regarding the safety of the proposed reactor site, the Philippine Government has initiated several reviews of the safety of the proposed reactor. In 1974, the Philippine Government entered into a contract with Ebasco Overseas Services, Inc., (a subsidiary of Ebasco — a major U.S. architectural-engineering firm) to assist in the selection of a site for the reactor. The Napot Point site was selected and Ebasco prepared a lengthy Preliminary Site Investigation Report documenting its findings. In 1976, at the request of the Philippine Government, the NRC staff examined the report and provided comments to the Philippine Atomic Energy Commission (PAEC) in early 1977. In July of 1977, Ebasco prepared a Preliminary Safety Analysis Report (PSAR) and submitted it to the PAEC. The same month, at the request of the PAEC, an IAEA Safety Mission, visited the Philippines to review the PSAR and provide comments on it. Subsequently, following public expressions of concern about seismic and volcanic aspects of the site, the PAEC requested the IAEA to send a second Mission to the Philippines, specifically to review the geological characteristics of the site. The IAEA Safety Mission visited the Philippines in May 1978. The Report of the Safety Mission was submitted to the PAEC in July of 1978.

In addition, the Philippine Government in June of 1979, created a commission to conduct an inquiry into the safety of the proposed Napot Point power plant. The Puno Commission, named after its chairman, conducted several weeks of public hearings, receiving testimony from 64 witnesses. Its report was issued in November of 1979. As part of its inquiry, it requested two well known seismic experts, J. Carl Stepp, and C. Lomnitz, to review independently seismic issues. The reports of these experts were issued on October 30, 1979.

Questions have been raised about our responsibility for the U.S. military forces who are stationed at the Subic Bay Naval Base. This base is located about 10 miles from the Napot Point site, and U.S. personnel are stationed there pursuant to a Military Bases Agreement with the Government of the Philippines, which has guaranteed in that agreement the security and protection of the U.S. bases. The Philippine Government's actions with respect to evaluation of the site-safety issue, mentioned above,⁶² are considered to provide reasonable assurances, in accordance with internationally accepted standards, concerning the safety of U.S. personnel stationed at this base.

It should be noted that these views reflect, *inter alia*, the position of the Department of Defense, which is the agency responsible for maintaining U.S. overseas military installations.

Other commenters in this proceeding have urged that the NRC take into consideration the alleged undemocratic character of the Government of the Philippines in making its statutory finding regarding inimicality. Because these matters do not relate to the health, safety, environmental, and nonproliferation responsibility of the Commission, we believe these concerns are beyond the scope of the Commission's jurisdiction.

We have also examined the question whether other potential health, safety, or environmental impacts resulting from the proposed export could cause us to conclude that the license should be denied on "inimicality" grounds. Based on our analysis of impacts on the global commons and U.S. territory, set forth in Section III(C) of this opinion, *infra*, we do not find these impacts sufficient to warrant an "inimicality" finding.

In sum, based on our review of the NRC staff, Executive Branch submissions as well as those submitted by members of the public, we conclude that there is no basis for determining that issuance of these export licenses would be inimical to the common defense and security or public health and safety.

C. The National Environmental Policy Act

1. Assessment of environmental impacts

Under NEPA the Commission in making its export licensing determinations must take into account health, safety and environmental impacts on the United States,⁶³ and has decided as a matter of discretion to take into account impacts on the global commons.

⁶²The Executive Branch is referring to the action described in n. 61, *supra*.

⁶³We define this term to mean the territory of the 50 States, as well as U.S. trust territories and possessions.

In response to the Commission's Order of February 8, 1980, the Commission invited public comments on the specific health, safety or environmental effects the proposed nuclear exports would have upon the global commons or the territory of the United States.

The NRC staff (the Office of Nuclear Reactor Regulation (NRR)) prepared a technical analysis providing an approximate evaluation of the potential radiological impacts upon the global commons that could result from the operation of the Napot Point reactor. NRR based its analysis on a definition of the global commons consisting of ocean areas more than 12 miles off the Philippine coast. NRR concluded that routine releases (gaseous and liquid) from the normal operation of the Napot Point facility would not result in significant impacts on the global commons. The same conclusion was reached for impacts which could be expected from the most serious reactor accident possible, namely, a core meltdown which would release radiation into the atmosphere or into the ocean. The Staff stated that although releases from such accidents might cause local contamination of aquifers, estuaries or oceans, the radiological and ecological impacts on the global commons would be small.

Several commenters, including the Department of State (speaking on behalf of the Departments of Commerce, Defense, Energy, and the Arms Control and Disarmament Agency), Westinghouse, Ebasco, and the National Power Corporation (the Philippine Government) took the position that the proposed exports would not have a significant impact on the United States or the global commons. In support of this conclusion these commenters relied upon the Final Environmental Statement on U.S. Nuclear Power Export Activities prepared by the Energy Research and Development Administration (now the Department of Energy) in 1976. That impact statement examined generic issues relating to U.S. nuclear power export activities, as they were expected to occur, through the year 2000. The statement analyzes the environmental, social, technological, economic, national security, and foreign policy benefits and costs to the United States of nuclear power export activities. The statement addresses impacts of nuclear exports on U.S. territory and the portions of the world's oceans over which no sovereign nation claims control and concludes that the "level of projected U.S. activities through the year 2000 should not entail significant and unacceptable adverse environmental impacts to the U.S."

The Department of State quoting from the concise environmental review it prepared on XR-120 (the reactor application) stated:

The nature of United States nuclear power export activities, as they relate to potential environmental impacts, has not altered substantially since issuance of ERDA-1542 in April 1976, except that the export activity levels have proved lower than then projected. Therefore, the environmental impact of such activities is expected to be even less than estimated in ERDA-1542. There is also no reason to believe that the nature of such activities described in ERDA-1542, as they relate to environmental impacts will significantly change in the foreseeable future.⁶⁴

The Department of State concluded that because the impacts on the United States and on the global commons of the nuclear reactor export program have been considered on a generic basis, and have been found to be insignificant, the Department does not believe that further case-specific examination of those impacts is required or appropriate.

The Council on Environmental Quality (CEQ) asserted that whatever the merits of ERDA-1542's adequacy in terms of the U.S. reactor export program in 1976, it is outdated and insufficient for purposes of considering the environmental effects of the proposed Philippine reactor export. CEQ states that only a small part of the EIS relates to impacts on the global commons and that there is no consideration of specific sites and their seismic, geologic or meteorological conditions. The Council also notes that the statement fails to provide any discussion waste management practices, and concludes that ERDA-1542 should be supplemented if the Commission intends to rely on that document in the Philippine proceeding.

The Center for Law and Social Policy, submitting comments on behalf of the Sierra Club, the Natural Resources Defense Council, the National Audubon Society, Friends of the Earth, and the Philippine Movement for Environmental Protection took a similar position, arguing that ERDA-1542 is outdated and that an updated environmental impact statement be prepared. These groups urge that this statement focus in particular on impacts arising from the disposal of the nuclear waste that would be generated by the proposed Philippine reactor.

The Friends of the Filipino People submitted the affidavit of William Lindsley Cummings, an ecologist specializing in the human use of tropical ecosystems. Mr. Cummings asserts that he has had extensive experience in the Philippines. Mr. Cummings states that while it is impossible to predict the specific health, safety, and environmental impacts of a major nuclear accident at the proposed Philippine reactor upon the global commons, there are potentially several adverse effects. He indicates that these impacts could range from contamination of international fishing grounds adjacent to the Philippines, and contamination of commercially important migratory species, to atmospheric pollution and dispersal of a drifting cloud of

⁶⁴Department of State's Response to the Commission's Order of February 8, 1980 at 2.

radioactive particles over adjacent nations, Pacific possessions and territories of the United States. He argues that it is presently impossible to analyze or predict the possibility of such occurrences and that until such abilities are developed, the Commission is obligated to deny the Westinghouse license application.

We have reviewed these comments and believe that the impacts on the global commons and U.S. territory that would result from the reactor export do not rise to a level of magnitude that would require us to vote to deny the export licenses. We accept the NRC staff conclusion that the likelihood that the operation of the Napot Point power plant will create environmental impacts that will harm the global commons is quite remote. Generally, radiological impacts resulting from the normal operation of the plant or from all but the most severe accidents will be undetectable. *See* The Final Environmental Statement related to manufacture of Floating Nuclear Power Plants by Offshore Power Systems, Part III at 3.3.2.1, NUREG-0502 (December, 1978). The worst case accident for a reactor sited on land near costal waters, like the Napot Point reactor, would be a core meltdown where the melted fuel entered into ground water beneath the plant and was transported to surface waters. In the Final Environmental Statement on Floating Nuclear Power Plants cited above, the NRC staff examined such a scenario and found that such an accident would have virtually no impact upon marine recreation, sport fishing, boating, commercial fishing and shipping that would occur in areas twelve miles from land. *See* 3.4 of that Statement. This assessment is based on information developed during the course of preparing Liquid Pathway Generic Study, NUREG-0440 (February 1978). That document provides additional technical analysis supporting this finding. Based on this information, we conclude that even in the worst possible accident the impacts upon the global commons should be extremely small. This finding is consistent with the conclusion of ERDA-1542 that the environmental impacts on U.S. territory and international oceans resulting from all U.S. nuclear export activities will be insignificant.

We recognize that ERDA-1542 does not address waste management practices or site specific impacts. We do not believe these omissions require the Commission to defer consideration of these applications until these impacts can be assessed.

One waste management option would be to store the spent fuel on site. It is our understanding that the Napot Point facility will permit on-site storage for approximately 10 years. The Commission in the domestic licensing context has many times assessed the impact of storing spent fuel at the reactor site for prolonged periods of time.⁶⁵ Based on this past experience, we conclude that storage on site would not have adverse impacts upon the global commons or U.S. territory.

A second option would be to return the spent fuel from the Napot Point reactor to the United States for storage. In 1977, President Carter announced a policy under which the Federal Government would offer to take title and to accept a limited amount of spent fuel from foreign sources when such action would contribute to meeting nonproliferation goals. The impacts of returning spent fuel have been assessed in a draft generic environmental impact statement prepared by the U.S. Department of Energy entitled "Storage of Foreign Spent Power Reactor Fuel" (1978). It is our understanding that the final statement should be issued by early this summer.

Another possible option would be storage of Philippine spent fuel in an international repository. Were U.S. territory used for such a venture, an EIS would, of course, be prepared. If such a facility were established in the Pacific region, it would be reasonable to expect the Government of the Philippines to utilize it for its spent fuel storage needs.

In any event, it will be several years before construction of the Napot Point reactor is completed and spent fuel generated. This will afford the U.S. Government ample opportunity to assess impacts upon U.S. territory and the global commons of the latter two options.

With respect to the claim that the Commission has not assessed site specific impacts, we wish to emphasize that the task of analyzing the precise impacts of an activity taking place within the territory of a foreign sovereign is an extremely difficult undertaking. As we concluded in Part II(3) of this opinion, principles of national sovereignty deny the United States the right to insist upon site visits by its regulatory officials to assess impacts upon the global commons. In the absence of such visits, one must rely upon the generic analysis of the impacts set forth in ERDA-1542, NRC staff analysis based on available analytical models, information gathered by the Executive Branch in its concise environmental review prepared pursuant to Executive Order 12114, domestic environmental impact statements prepared by the NRC staff, and other available information.

⁶⁵See e.g., Final Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel (NUREG-0575, August 1979); Environmental Impact Appraisal by the Office of Nuclear Reactor Regulation Relating to the Modification of the Spent Fuel Pools at Salem Nuclear Generating Stations (January 1979). Also see Table S-3, 10 CFR 51.20.

These generic studies, in particular the Liquid Pathway Generic Study and the Final Environmental Standard on Floating Nuclear Plants, provide sufficient analysis to support NRC findings on whether impacts from a given site upon the global commons are acceptable. Based on this limited review which satisfies all statutory requirements, we believe that the proposed exports to the Philippines would not have unacceptable adverse impacts upon U.S. territory or the global commons.

2. Cooperation with the Philippines

Apart from its assessment of environmental impacts resulting from nuclear exports, the Commission is required under Section 102(2)(F) of NEPA to:

Recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment.

In addition to the considerable financial and other support the United States provides to the IAEA, the international organization which has the responsibility for assisting developing countries, such as the Philippines, to implement health, safety and environmental protection programs, the Commission has been engaged in several specific cooperative programs with the Philippines that satisfy this requirement. In 1977, an NRC employee served on an IAEA safety mission that visited the Philippines. Working through the auspices of the IAEA, for the past three years NRC employees have been assigned to the Philippines. These individuals have worked on a full-time basis with the Philippine Atomic Energy Commission (PAEC). Three Filipinos have been assigned to work with the NRC staff for varying periods of time to gain experience in safety and regulatory matters. Two more Filipinos will participate in this training program in the coming months. The NRC on a regular basis has provided the Philippine Atomic Energy Agency with NRC regulatory guides and weekly news releases, Three Mile Island related documentation and staff reports, and information requested by PAEC personnel.

Moreover, the United States and the Philippines entered into a bilateral regulatory information exchange agreement on April 28, 1980. Under that agreement, the PAEC will receive regularly additional information on regulatory and safety matters, including bulletins issued by the Commission's Office of Inspection and Enforcement, NRC Circulars and Informa-

tion Notices, and a broad spectrum of general applicability NUREG reports.

D. Requests for Stay of Commission Order

A final matter which the Commission must consider in this proceeding relates to requests by two groups of participants for a Commission stay of any order issued on the Philippine licenses to permit orderly judicial review.⁶⁶ The Movants argue that the jurisdiction of the federal courts to review a Commission order could be abrogated if commodities covered by the pending Philippine license applications were shipped beyond the territorial limits of the United States before Movants had an opportunity to seek judicial review of the Commission's determinations. Therefore, they have requested the Commission to stay in advance its order for seven days to avoid this possibility.

The standards the Commission applies to stay motions are the same as those set forth in *Virginia Petroleum Jobbers Association v. Federal Power Commission*, 259 F.2d 921 (D.C. Cir. 1958) and *Washington Metropolitan Area Transit Comm'n v. Holiday Tours, Inc.*, 559 F.2d 841 (D.C. Cir. 1977).⁶⁷ Of those, the weightiest is the need to maintain the *status quo* — whether the party requesting a stay has shown that it will be irreparably injured unless a stay is granted.

In assessing the likelihood of irreparable injury here, the fundamental question is whether the major commodities covered by the pending license applications would pass beyond the jurisdiction of the United States prior to an opportunity for judicial review.

In this regard, the record contains several relevant statements of fact by the license applicant, Westinghouse Electric Corporation. First, on page 12 of the applicant's submission of April 14, 1980, entitled "Opposition of Westinghouse Electric Corporation to 'Motion for a Stay Pending,'" the applicant asserts that "Movants suggestion that the reactor can be transported out of the country during the brief period for which they seek the stay is contrary to fact...[a]s a practical matter, much of that equipment cannot be shipped for many months after licenses issue because of the lack of immediate availability of suitable transportation and handling equipment,

⁶⁶Letter from Thomas R. Asher representing the Center for Development Policy and the Movement for a Free Philippines to Leonard Bickwit, Jr., dated March 21, 1980; and Motion for a Stay Pending Appeal, dated April 30, 1980, on behalf of the National Resources Defense Council.

⁶⁷They are: has the petitioner made a strong showing that it is likely to prevail on the merits of its claim; whether absent a stay it will be irreparably injured; whether the granting of a stay will harm other participants; and where lies the public interest.

and the need for other mobilization efforts at the various ports of exit." After further inquiry by the Commission on the specific anticipated dates of shipment of the four major items covered by the license applications,⁶⁸ Westinghouse responded in an April 22nd letter: "Assuming the export licenses issue during the week of April 28, 1980, shipment from the United States to the Philippines of the steam generators, reactor coolant pumps and reactor pressure vessel is not scheduled to occur until after August 31, 1980,...[s]hipment of the control rods... is not scheduled to occur until after April 30, 1981."

In view of the foregoing circumstances, we do not believe that a showing of irreparable injury has been made. Movants will have ample time to seek judicial redress of the Commission's decision. We are also of the view that the Commission's resolution of the merits of these applications is correct, that the public interest is served by timely supply of components and facilities which meet NNPA standards, and that issuance of a stay would harm others interested in the proceeding who support issuance of the licenses. For these reasons, we voted to deny the requests for a stay.

IV. Conclusion

For the reasons set forth above, we believe that License Applications XR-120 and XCOM-0013 meet all the requirements relevant for issuance.

OPINION OF COMMISSIONER GILINSKY

I concur in the result reached by the Commission on previous occasions¹ that, consistent with applicable law,² favorable findings on the health, safety and environmental impacts of U.S. nuclear exports abroad should not be a condition of export authorization by the NRC. The primary focus of the NRC export review process should continue to be on the proliferation risks posed by exports and the satisfaction of the criteria of the

⁶⁸See 10 CFR 110.2(ss).

¹*Westinghouse Electric Company* (export of a reactor to Spain), CLI-76-9, 3 NRC 739 (1976); *Babcock & Wilcox* (export of reactor to West Germany), CLI-77-18, 5 NRC 1332 (1977).

²The Atomic Energy Act of 1954, 42 U.S.C. Section 2011, *et seq.*; the National Environmental Policy Act of 1969, 42 U.S.C. Section 4321, *et seq.*; and the Nuclear Nonproliferation Act of 1978, 22 U.S.C. Section 3201, *et seq.* The scope of the Nuclear Regulatory Commission's jurisdiction and the extent of its responsibilities should, for the sake of clarity, be analyzed separately under the provisions of NEPA and those of Section 103(d) of the Atomic Energy Act which requires the Commission to find that issuance of an export license would not be "inimical to the common defense and security or to the health and safety of the public."

Nuclear Nonproliferation Act.³

This is not to say that local impacts abroad of U.S. nuclear exports are not a proper concern of the U.S. Government. They often are, most particularly when they potentially affect Americans abroad. NRC can play a useful role in the Government's examination of those questions by providing advice and assistance to the Department of State and, where U.S. bases abroad are involved, to the Department of Defense in their review of the export application.⁴

NRC advice on the ability of the recipient country to assure the safety of the reactor export in question would be especially useful to the Export-Import Bank and should be available in its review of the loan application. As a result of NRC's cooperative arrangements with other countries, the Commission should generally be well informed regarding the effectiveness of safety regulation in the recipient nation. It has always surprised me that large loans have been granted in the past without evaluating such information. I am informed that will no longer be the case in the future and that the Export-Import Bank will routinely seek such information early in the loan review process.

It is quite another thing, however, to ask the NRC to make a formal *finding* concerning the health, safety or environmental impact of the operation of the proposed facility within the recipient country as a condition of export approval. Unless it were invited to do so by a foreign government, the NRC could not perform the same type of safety and environmental review, to assess compliance with U.S. standards, for a nuclear power plant located in a foreign jurisdiction as it performs for a plant located in the United States. Yet what other standards can be applied? Evaluation of a proposed site requires information which cannot, as a practical matter, be gathered by an entity having no authority over the proposed location. Moreover, safety judgments are tied to future authority to inspect and to regulate the methods of construction and operation. For example, the integrity of the containment building depends upon the correct pouring of concrete. Similarly, the proper operation of the

³The same result is reached by Commissioners Kennedy and Hendrie in part for different reasons. We agree however on two central points: that applicable law does not require the Commission to make an overall finding regarding the health, safety and environmental impacts of U.S. nuclear exports within the borders of recipient nations; and that in exercising its discretion the Commission should not condition export approval on a favorable overall finding regarding such impacts. We also agree that the Commission should consider the health, safety and environmental impacts of the proposed export on the United States and the global commons.

⁴Because so much has recently been made of the possible delays which may result from NRC's participation in the review of export license applications, I note in passing that the applications in this case have been before the United States Government for approximately 41 months. The Department of State considered the applications for a total of approximately 32 months.

equipment exported pursuant to a license depends upon its being properly assembled and installed. Again, the Commission could not supervise these operations unless it were invited to do so.

These limitations exist even in an atypical case, such as this one, where the bulk of the reactor components are procured from U.S. suppliers. In the typical export licensing case where some portions of the plant, perhaps the reactor core, vessel and related equipment, may be purchased from a U.S. manufacturer and other portions of the plant from foreign manufacturers, possibly with a foreign architect-engineering firm supervising the project, an NRC finding as to the safety of the proposed plant would be even more difficult to make. It would require an evaluation of the foreign components and of the meshing under the supervision of a foreign entity between such components and the items of U.S. origin. But even this evaluation would not go to the heart of the safety issue.

As demonstrated for all the world by the Three Mile Island accident, the safety of a nuclear reactor depends crucially on the manner in which it is operated. Even if the NRC were in a position to adequately review the siting and construction of a foreign nuclear plant, it would not be in a position to oversee the training and licensing of the plant's operators and managers, nor could it regulate the plant's operations over a period of thirty years.⁵ Indeed, I think that it should be underlined that the Commission's present decision does not in any fashion address the manner in which this nuclear power plant will be operated. It should in no way be regarded as an endorsement of the safety of that plant.

Applying these principles to the case before us, I would grant export licenses XR-120 and XCOM-0013. I would note in conclusion that in the wake of the Three Mile Island accident this Commission has determined that evacuation plans must be an integral part of the safety precautions taken even for nuclear plants designed, constructed and operated in conformance with rigorous U.S. standards. I would therefore suggest that the Secretary of Defense consult with the Commission on the need to implement protective measures, possibly including preparations for evacuation, to insure the safety of the U.S. bases and personnel located in the vicinity of the proposed site.

⁵The Commission is in the process of certifying reactor operator training programs as part of its domestic licensing activity. When this has been accomplished, it may be desirable, at least where there is substantial U.S. involvement, to require assurance at the time the export license is granted that foreign operators will complete the certified training program. Although the imposition of this requirement would not result in the Commission supervising foreign operators in the same manner as it would domestic operators, it would enhance the safety of foreign reactors. Until that time, I would urge Westinghouse to insure that the operators of this plant complete all the operator training programs that would be completed by operators if this were a domestic reactor.

DISSENTING VIEWS OF CHAIRMAN AHEARNE

The NRC must follow the laws under which it operates. Therefore, although on an ethical basis I might have preferred otherwise, I agree with the General Counsel's determination that the NRC does not have the legal authority to evaluate health, safety, and environmental effects that would occur in a recipient nation and do not bear on United States' interests.¹

I also agree with the General Counsel that the statutes are ambiguous on whether the NRC may evaluate the effects of an exported facility upon U.S. interests, and therefore the extent of such evaluation is a policy question.² In that, I agree with the Office of Policy Evaluation, which recommended that where there is U.S. interest, either on a military or an institutionized long term presence of U.S. citizens, the Commission should consider health and safety effects of the exported reactor in a limited manner by reviewing all the available information.³

Therefore, I dissent from the jurisdictional decision reached by the Commission. The Commission did not fully articulate its position on the question of jurisdictional reach until this decision. I find it not possible to simultaneously evaluate the appropriate jurisdictional reach and whether the Commission position warrants granting the export in this case (although I suspect it does). Therefore, I abstain from the Commission's determination on the pending applications.

DISSENTING VIEWS OF COMMISSIONER BRADFORD

This is a neither a clear question nor any easy case. The law is not explicit, and strong policy considerations point in mutually exclusive directions. The difficulty of the matter having been acknowledged, it must still be noted that the majority result does not rise to the occasion. Having concluded that the law permits an assessment of the effects of U.S. exports at least on the health and safety of U.S. citizens abroad and on the global commons, the Commission decision establishes a practice that, in this case, leads to an assessment of the impact of an accident on fish no closer than twelve miles to the Philippine coast while ignoring the impact of an accident on the 30,000 U.S. citizens stationed at the Subic Bay Naval Base and the Clark Air Force Base within 10 and 30 miles of the plant.¹

¹SECY 80-20 at 7-13 (memorandum fm L. Bickwit, Jr., General Counsel and E. Hanrahan, Director, OPE to the Commissioners dated January 15, 1980).

²*Id.* at 13-16.

³*Id.* at 27-28.

¹This policy of focusing great attention on the analysis of minor contributors to overall risk while declining to consider the major contributors is not new. The Atomic Energy Commission did the same thing by analyzing Class I-VIII accidents in detail while refusing to analyze Class IX accidents, even though it had proof before it that Class IX accidents were the dominant contributor to risk from nuclear accidents. (See Staff Paper SECY-R-338, November 15, 1971).

What should be considered pursuant to the Atomic Energy Act is whether there are means available to this Commission or the U.S. Government that would lessen the probability or the consequences of a serious accident at a U.S. exported reactor. To find that a reactor exported without every reasonable precaution to prevent or mitigate against such an accident would not be "inimical to the common defense and security" is to ignore the effects of Three Mile Island in this country and abroad, to say nothing of whatever military significance might attach to disabling the Clark and Subic bases in this particular case. Nuclear licensing around the world is clearly affected by a major accident,² and as long as the U.S. Government maintains that nuclear power has a security-related role to play in lessening global dependence on imported oil, it is counterproductive for its licensing agency to issue exports without doing everything possible to avoid the impact of an accident on that role.³

Nonetheless, the NRC must recognize limits on its power to review safety requirements in recipient countries. The majority have stated the concern regarding the extraterritorial application of domestic law. It is also reasonable to note, as they do, that the reactor is expected to operate for some 30 years under laws, standards, and inspection practices that will flow entirely from the sovereignty of the recipient nation. These laws and practices, not any U.S. review, will be the ultimate determinant of the safety of the reactor, and the Commission is correct in noting that a U.S. review cannot be a substitute for effective national regulation.⁴

The framework for any NRC review should be a balancing of the principles of sovereignty and national regulation against our own self-interest in avoiding accidents and against our responsibility, as suppliers of a potentially dangerous technology, to fully inform the purchaser of the

²The only tenable way to deny that such effects are adverse to the common defense and security is to argue that the reactors are unnecessary in any case, but especially so in developing countries. Even the proponents of this view, however, do not advocate failure to take every reasonable precaution against reactor accidents as a responsible way to prove their point.

³It is important to understand that the point being made here is that the adverse impact on the common security flows from the unnecessary failure to guard as thoroughly as possible against the worldwide repercussions of a nuclear accident. This is emphatically not to say that the barrels of oil involved in the operation of any one or two or ten reactors during a particular period of time would necessarily raise a similar common security concern.

⁴However, the majority opinions go on to stand the significance of this point on its head. The conclusion should not be that no review is in order because the review cannot guarantee safe operation. It should be that, because the U.S. has little control over the operating practices or quality assurance and control programs, we should at least do what we reasonably can to advise at the outset on the safety of the site, the design, and the regulatory program.

best information that we can develop. Thus, our legal responsibility to consider the common defense and security, our legal responsibility to consider the health and safety of American populations living overseas, and a policy determination to take some effective responsibility for the safe use of our exports all merge in the direction of a more comprehensive review than the Commission has chosen to undertake. I would not assert that such a review could be a basis for the denial of an export in any but the most extraordinary case. In slightly less extreme cases, preconditions could be attached to an export license. In most cases, however, a review would presume the intelligent self-interest of the recipient nation and could be offered on a cooperative basis as a positive benefit of the U.S. export process.

Such a review might, depending on the information available in any given case, lead to a statement on the following points:

1) Whether the proposed reactor design would be licenseable in the United States. If not, why not.⁵

2) Whether the site contained any obvious features that would make it unlicenseable in the U.S. Whether particular features should be of sufficient concern to the recipient country to require further inquiry on its part.

3) Whether the recipient country was creating a regulatory framework adequate for the scope of its nuclear program.

Depending on the circumstances, some of the results of such a review could conceivably be furnished to the recipient country in confidence if need be. Furthermore, the existence of effective International Atomic Energy Agency involvement could alleviate or remove particular concerns.

⁵One party, the Natural Resources Defense Council suggests a history of this design that would, if verified, seem to compel a more extensive review:

"The PNPP-1 design is referenced to a reactor under construction since 1974 in Yugoslavia. This plant in turn had been referenced to an earlier plant under construction in Brazil. This plant was referenced to a Puerto Rican plant which was never built nor licensed by the Commission. The Commission review of the design of this U.S. plant was never completed, terminating in late 1972."

"The State Department's Concise Environmental Review does not name any reference plant for the PNPP-1, but asserts that it is an updated version of three plants in the United States: Kewaunee, Turkey Point, and Prairie Island. All of these plants went into operation between 1972 and 1974 and received their construction permits years before even the terminated Puerto Rico plant review. In the last decade, there have been considerable changes in applicable design criteria and regulatory guidelines. It is highly unlikely that any of these plants could be licensed to operate today without substantial modifications."

As I intimated at the outset, I believe that the Commission result in this case is unsound law and bad policy. The fact is that an accident as severe as Three Mile Island would be inimical to the common defense and security as discussed above. Furthermore, a more severe accident could pose a specific threat to the common defense and security interests protected by the Subic and Clark Bases and to the public health and safety of the 30,000 Americans at those bases. Whatever the scope of the Commission's discretion in coping with this concern, it does not have the power to refuse to evaluate it at all. The finding that the export is not inimical to the common defense and security or to the health and safety of the public should rest at least on as detailed a review as can reasonably be made. No such review exists.⁶

The plurality opinion has also made curious work of the intent behind the Congressional treatment of Section 103(d) of the Atomic Energy Act in the enacting of the Nuclear Nonproliferation Act of 1978. As a first step in its reasoning, the plurality defines away any obligation to concern itself with the health and safety of American citizens abroad by "interpreting" the relevant section of the Senate Report on the Nuclear Nonproliferation Act. What the report says is:

"Although the NRC finding on the health and safety of the public refers only to the American public, it should be recognized that certain overseas activities could pose a threat to Americans."⁷

The Commission suggests that the word "overseas" means only that activities on the Canadian or Mexican borders having an impact on the U.S. public must be considered. As to just what "seas" such activities would be "over," the Commission maintains a dignified silence.

With regard to the operation of the military bases as they affect the common defense and security, the Commission asserts that it has traditionally interpreted the Section 103(d) language as including just the common defense and security of the U.S. This proves nothing. Such an

⁶This void is not filled by the environmental assessment prepared by the Departments of State and Defense with the assistance of the Department of Energy. That document is little more than a description of the reactor. The Department of Energy was strongly critical of it, and it does not address the possible consequences of a severe accident beyond saying that they would be similar to those to be expected in the U.S. This statement ignores local conditions which are essential to evaluating impacts. In any case, the Commission has declined to consider this document even though the Departments of State and Defense actually suggested an NRC review of the volcanic and seismic risks posed by the reactor to the military bases and thus to the common defense and security.

⁷Senate Rep. 95-467, 95th Cong., 1st Sess., at 13.

interpretation reinforces the Commission's duty to examine the impacts on the operation of these military bases which exist to defend the common defense and security of the U.S.

On this subject, the House Report states,

In the absence of unusual circumstances, the Committee believes that any proposed export meeting the criteria set forth in Subsection 127(a)...would also satisfy the common defense and security standard.⁸

Far from indicating, as the plurality opinion claims, that "the Committee did not contemplate that NRC would use the inimicality finding to...include matters...beyond the explicit nonproliferation criteria," the Report clearly expects the Commission to do just that in "unusual circumstances." The presence of two U.S. military bases near the site clearly presents just such circumstances. Indeed, I cannot imagine what the Commission deems "unusual" to mean in this context if it does not mean a cluster of tens of thousands of U.S. citizens near a site in a case in which even the Departments of State and Defense urged a limited NRC review.

Having thus converted a legal duty into a discretionary option, the Commission has declined to exercise that option. The primary basis for the refusal to examine the potential impacts of the export is that the Commission would still not be in a position to determine that the reactor could be operated safely. This is not a legally sufficient basis for refusing to look at the potential impacts on the U.S. citizens and the operation of the military bases. Such a look might have provided the missing rational basis for the findings essential to the issuance of this license. For example, if the conclusion had been that the worst possible accident could cause numerous casualties and leave the military bases temporarily or permanently unuseable, the Commission might then (1) have recommended to the Department of Defense that it draw up emergency plans, (2) have determined the probability of the accident to be small enough that the risk is acceptable, or (3) have offered assistance to the Philippines to attempt to reduce the risk.⁹

The other Commission concern is that such a review would intrude on the sovereignty of the Philippines. This assumes that the Philippines would not have welcomed some review if it had been offered early in the proceeding. In any case, however, some level of review could have been based on the information available in this country as well perhaps as meteorological data from the military bases. Furthermore, a review to determine the possible impacts upon U.S. citizens residing around the

⁸House Rep. 95-587, 95th Cong., 1st Sess., at 21.

⁹In this context, I agree with Commissioner Gilinsky's suggestions regarding the Export-Import Bank review and the Department of Defense.

reactor seems no more intrusive than some aspects of the nonproliferation reviews nuclear exporting nations are committed to perform pursuant to the London Supplier Guidelines and the Nonproliferation Treaty.

The inconsistency in the Commission's treatment of the sovereignty question is apparent from the plurality's statement that if the reactor were situated in Canada or Mexico close to the U.S. border, the Senate report means that "the U.S. must consider the impacts on U.S. citizens and territory." In those cases, just as in this case, the U.S. cannot assure that the reactor will be operated safely, and any intrusion on sovereignty would be the same in Canada and Mexico as in the Philippines.

. . . .

Because my dissent is from the Commission order setting the scope of this and other reactor export proceedings, a decision reached months ago, it is somewhat out of place in the decision on the export itself. However, this order is the first place that the Commission has set forth the reasoning behind its earlier decision.

If my concern were simply one of policy, I would note my dissent from the earlier policy but concur that the export license was correct under the course chosen. Because, however, I believe that the law requires of us work that has not been done, I must dissent from the issuance of the license itself at this time. I do not mean by the dissent to say that the record establishes that the plant will be unsafe. The point is that the Commission has declined to consider that question, even as it may affect U.S. citizens and security interests.

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. 110-00495**

**WESTINGHOUSE ELECTRIC
CORPORATION**
(Exports to the Philippines)

May 6, 1980

The Commission decides to adhere to the policy reflected in several earlier export licensing decisions and restricts its consideration of health, safety and environmental effects arising from exports of nuclear reactors to those that could affect the territory of the United States or the global commons. The Commission also announces that it will not consider those impacts when reviewing export license applications for reactor components or special nuclear material.

MEMORANDUM AND ORDER

For the reasons set forth in the Opinion of Commissioners Kennedy and Hendrie and the Opinion of Commissioner Gilinsky issued today, the Commission has decided to adhere to the policy reflected in several of its earlier export licensing decisions and will only consider those health, safety and environmental impacts arising from exports of nuclear reactors that affect the territory of the United States or the global commons. The Commission will not consider these impacts when acting upon exports of components or special nuclear material. The health, safety, and environmental impacts from individual fuel shipments or component shipments are generally *de minimis* and the Commission has consistently taken the position that individual fuel exports are not "major federal actions." See *Edlow International*, CLI-76-6, 5 NRC 563, 584 (1976).

As noted in the earlier order, Chairman Ahearne and Commissioner Bradford have dissented from the Commission's jurisdictional determinations.¹

It is so ORDERED.

By the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 6th day of May 1980.

¹Section 201 of the Energy Reorganization Act, 42 U.S.C. 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 approved. Commissioner Kennedy had previously indicated his approval of this Order in an earlier session on the same date. To enable the Commission to proceed with this matter without delay, Commissioner Bradford, who was a member of the minority on the question up for decision, did not participate in the formal vote. He would have dissented. Accordingly, the formal vote of the Commission is 2-1.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 50-289OL

**METROPOLITAN EDISON
COMPANY**

**(Three Mile Island Nuclear
Station, Unit No. 1)**

May 16, 1980

In response to the Licensing Board's certification of two questions presented by the TMI-2 accident, the Commission determines that: (1) no special circumstances exist in this proceeding to warrant the grant of a waiver or exception to the design basis assumptions of 10 CFR 50.44 involving the generation of hydrogen gas following a loss-of-coolant-accident; and (2) post-accident hydrogen gas control should be an issue in this proceeding and may properly be litigated under 10 CFR Part 100. The Commission also announces its intent to address the hydrogen generation issue in a general rulemaking proceeding concerning degraded core conditions.

MEMORANDUM AND ORDER

On January 4, 1980, the Licensing Board certified two questions to the Commission in this proceeding:

1. Whether the provisions of 10 CFR 50.44 should be waived or exceptions made thereto in this proceeding where a *prima facie* showing has been made under 10 CFR 2.758 that hydrogen gas generation during the TMI-2 accident was well in excess of the amount required under 10 CFR 50.44 as a design basis for the post-accident combustion gas control system for TMI-1.

2. Whether post-accident hydrogen gas control should be an issue in this proceeding where post-accident hydrogen gas control was perceived to be a serious problem and was in fact a problem during the TMI-2 accident.

Although the Commission in its August 9 Order and Notice of Hearing did not specifically list hydrogen gas control as an issue to be considered by the Board, the Commission did not intend to exclude the issue from consideration by the Board. The Three Mile Island accident has in fact raised a safety issue regarding hydrogen control measures following a loss-of-coolant accident that should be addressed. The Commission believes that, quite apart from 10 CFR 50.44, hydrogen gas control could properly be litigated in this proceeding under 10 CFR Part 100. Under Part 100, hydrogen control measures beyond those required by 10 CFR 50.44 would be required if it is determined that there is a credible loss-of-coolant accident scenario entailing hydrogen generation, hydrogen combustion, containment breach or leaking, and offsite radiation doses in excess of Part 100 guideline values. The design basis assumptions of 10 CFR 50.44, in particular the assumption that hydrogen generation following a loss-of-coolant accident is dependent on ECCS design as opposed to actual ECCS operation, do not constrain the choice of credible accident sequences used under 10 CFR 100.11(a). *Union of Concerned Scientists v. AEC*, 499 F.2d 1069, 1090 (D.C. Cir. 1974). Thus we answer the second certified question in the affirmative.

We answer the first certified question in the negative. We are of course aware that the Three Mile Island accident resulted in hydrogen being generated far in excess of the hydrogen generation design basis assumptions of 10 CFR 50.44. This was because the operator interfered with actual ECCS operation with the result that the safety system did not operate as designed and as 50.44 assumed it would operate. However, this is a safety issue that is not peculiar to Three Mile Island Unit 1 — it is an issue that is common to all light water power reactors because operators generally have the physical capability to interfere with automatic ECCS operation. The proper response to this issue is not waiver of the rule under 10 CFR 2.758 because this case presents no “special circumstances,” but rulemaking to either amend or suspend the present rule. The Commission is planning a broad rulemaking proceeding that will address the general question of possible safety features to deal with degraded core conditions. This rulemaking proceeding will include measures to deal with hydrogen generation following a loss-of-coolant accident. The results of this proceeding will be applicable to plants such as Three Mile Island Unit 1.

The question remains whether the hydrogen generation issue presented by the Three Mile Island accident is sufficiently serious and urgent that an immediate rule suspending the hydrogen generation design basis assump-

tions of 50.44 is required without awaiting completion of the degraded core rulemaking. We believe that the answer is no, for the following reasons. First, such a suspension would only affect the context in which the issue would be evaluated, and not whether the issue would be evaluated at all. We have stated above that the hydrogen control issue can be litigated under 10 CFR Part 100. Under Part 100 the likelihood of an accident entailing generation of substantial (in excess of 10 CFR 50.44 design bases) quantities of hydrogen, the likelihood and extent of hydrogen combustion, and the ability of the reactor containment to withstand any hydrogen combustion at pressures below or above containment design pressure would all be at issue. A critical issue here would be the likelihood of an operator interfering with ECCS operation.

Second, the effect of a suspension of the 50.44 hydrogen design basis assumptions would be that constraining assumptions would be placed on hydrogen generation safety evaluations. Under those portions of 50.44 that would remain, and under 10 CFR Part 50, Appendix A, General Design Criterion 50, the evaluation would need to assume that a loss-of-coolant accident is certain to occur, that any hydrogen generated is certain to burn, and that the containment is certain to fail at pressures in excess of design pressure. The only issues would be how much hydrogen would likely be generated and whether the pressures resulting from combustion of the hydrogen would exceed containment design pressure. To be sure these types of assumptions would incorporate conservatisms in the analysis that would not be incorporated into a Part 100 analysis. However, after the Three Mile Island accident the Staff has given licensees explicit instructions not to turn off prematurely the ECCS system. As noted above, it was operator interference with ECCS operation that was the root cause of the hydrogen generation problem at Three Mile Island Unit 2. In our view this instruction, which had not been issued when 50.44 and General Design Criterion 50 were promulgated, compensates for the less conservative analytical framework of Part 100, and serves as a basis to sustain the present hydrogen generation assumptions of 50.44 at least for the interim until the degraded core rulemaking can be completed.

Thus we are leaving 10 CFR 50.44 in place for the time being until more deliberate and considered rulemaking can be completed.¹

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 16th day of May 1980.

**SEPARATE VIEWS OF COMMISSIONERS GILINSKY AND
BRADFORD**

We would have waived 10 CFR 50.44. To us, a proceeding at Three Mile Island seems an extraordinary place for the Commission to adhere to the proposition that only five percent of the cladding will react to release hydrogen, given that the recent accident is known to have released several times that quantity.

¹Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had he been present, Commissioner Gilinsky would have dissented in part, as noted in the attached separate views of Commissioners Gilinsky and Bradford. Had Commissioner Kennedy been present, he would have voted to approve this Order. Accordingly, the formal vote of the Commission is 2-1.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearn, Chairman
Victor Gllinsky
Richard T. Kennedy
Joseph M. Hendrie
Peter A. Bradford

In the Matter of

**Docket No. 50-387CP
50-388CP**

**PENNSYLVANIA POWER AND
LIGHT CO., et al**
**(Susquehanna Steam Electric
Station, Units 1 and 2)**

May 16, 1980

In response to intervenor's request that the Commission review certain discovery rulings by the Licensing Board and grant other relief in this proceeding, the Commission declines to act itself and refers the matter to the Appeal Board for appropriate action.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Appeal Board functions as the Commission's delegate in the review of Licensing Board action in proceedings involving the licensing of nuclear power reactors. In the absence of extraordinary circumstances warranting Commission involvement, requests for interlocutory review of Licensing Board rulings and other relief should be directed to the Appeal Board rather than to the Commission. 10 CFR 2.730(f), 2.785.

ORDER

The Commission has received and evaluated the Environmental Coalition on Nuclear Power's (ECNP) "Request to the NRC Commissioners for Expedited Consideration of Actions of an Atomic Safety and Licensing Board and Other Matters." That request seeks the Commission's involvement in the Susquehanna licensing proceeding with respect to the entry of

discovery protective orders, disqualification and reconstitution of the Licensing Board, and other similar relief. Because the Commission does not believe that there are such exceptional circumstances which warrant the extraordinary involvement of the Commission at this stage of the proceeding, the Commission declines to act on the request but refers the matter to the Atomic Safety and Licensing Appeal Board for appropriate action. 10 CFR 2.730(f).

The Commission's Rules of Practice contemplate that requests for relief, such as those in ECNP's filing, be directed to the Appeal Board, which functions as the Commission's delegate for these matters. 10 CFR 2.785. In appropriate circumstances, that Board may stay the effect of Board decisions, 10 CFR 2.788, and may act on disqualification motions, 10 CFR 2.704. The Appeal Board may also consider whether a basis for interlocutory review and appropriate relief. *Puget Sound Power and Light Company* (Skagit Nuclear Power Project), ALAB-572, 10 NRC 693, 695 n.5 (1979).

Accordingly, the Commission refers ECNP's filing, together with the responses filed by the applicant and NRC Staff, to the Appeal Board for appropriate action.¹

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, DC,
this 16th day of May 1980.

¹Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present, they would have voted to approve this Order. Accordingly, the formal vote of the Commission is 3-0.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

License Nos. XSNM-1379
XSNM-1569
XCOM-0240
XCOM-0250
XCOM-0376
XCOM-0381
XCOM-0395

**EDLOW INTERNATIONAL
COMPANY, *et al***

**(Agents for the Government of
India on Applications to
Export Special Nuclear
Materials and Components)**

May 16, 1980

The Commission finds that seven license applications for the export of special nuclear material and components for use in the Tarapur Atomic Power Station do not meet the criteria set forth in Sections 109, 127, and 128 of the Atomic Energy Act and accordingly refers them to the President pursuant to Section 126b.(2) of the Act.

ATOMIC ENERGY ACT: NON-PROLIFERATION (SECTION 128)

The "full-scope" safeguards criteria of Section 128 of the Atomic Energy Act must be applied in the Commission's review of all applications for the export of nuclear fuel filed after September 10, 1979, or for which NRC licensing action is taken after March 10, 1980. Section 128b of the Atomic Energy Act, 42 U.S.C. 2157(b).

MEMORANDUM AND ORDER

Seven license applications were filed with the Commission¹ seeking authorization to export material and components for use in the Tarapur Atomic Power Station (Tarapur) located near Bombay, India:

- (1) XSNM-1379 on September 20, 1978 for export of 487.3 kilograms of U-235 contained in 19,858.8 kilograms of uranium enriched to a maximum of 2.7%;
- (2) XCOM-0240 on April 25, 1979, as amended May 8, 1980, for export of replacement parts;
- (3) XCOM-0250 on May 7, 1979 for export of replacement parts;
- (4) XSNM-1569 on August 17, 1979 for export of 487.3 kilograms of U-235 contained in 19,858.8 kilograms of uranium enriched to a maximum of 2.71%;
- (5) XCOM-0376 on March 6, 1980 for export of replacement parts;
- (6) XCOM-0381 on March 14, 1980 for export of replacement parts; and
- (7) XCOM-0395 on April 3, 1980 for export of replacement parts.

The lengthy history of U.S.-Indian cooperation in connection with the Tarapur reactors is fully chronicled in several formal Commission decision.²

The Commission cannot find, based on a reasonable judgment of the assurances provided by the Government of India and other information available, that License Applications XSNM-1379, XSNM-1569, XCOM-0240, XCOM-0250, XCOM-0376, XCOM-0381, and XCOM-0395 meet the criteria for issuance set forth in Sections 109, 127, and 128 of the Atomic Energy Act. Accordingly, NRC is referring these license applications to the President, pursuant to procedures set forth in Section 126b.(2) of the Atomic Energy Act.

The basis for the Commission's decision is as follows. India has several nuclear facilities which have not been placed under International Atomic Energy Agency safeguards. After reviewing the legislative history of Section 128 of the Atomic Energy Act, the Commission has concluded that the full-scope safeguards criterion applies to the two fuel applications. The legislative history of the Nuclear Nonproliferation Act is replete with references that the full-scope safeguards criterion would come into effect at a date certain³ — that the application of the criterion would have a

¹A brief chronology of correspondence on these applications is attached

²CLI-76-10, 4 NRC 1 (1976); CLI-76-6, 3 NRC 563 (1976); CLI-77-20, 5 NRC 1358 (1977); CLI-78-8, 7 NRC 436 (1978); CLI-78-20, 8 NRC 675 (1978); CLI-79-4, 9 NRC 209 (1979).

³E.g., H. Rep. No. 95-587, 95th Cong., 1st Sess. at 22, 25; S. Rep. No. 95-467, 95th Cong. 1, 1st Sess. at 18; Statement of Senator Glenn, 123 Cong. Rec. S.13139 (July 29, 1977).

“guillotine” effect.⁴ The State Department’s view that the criterion does not apply to license applications filed before September 10, 1979 where the applicant reasonably expected the license to issue prior to March 10, 1980 is, we believe, inconsistent with Congressional intent. As we understand the Department’s view, if an application were filed with the Commission prior to September 10, 1979, an applicant expected the license before March 10, 1980, but the Executive Branch did not provide the Commission with its views until years later, the criterion would not apply. Such results do not comport with the “guillotine” approach which was contemplated.

Because of unique features in the Agreement for Cooperation between the United States and India, the Commission is also unable to find that the two fuel applications satisfy the requirements of Section 127 of the Atomic Energy Act or that the component applications satisfy the requirements of Section 109 of the Atomic Energy Act. This issue is thoroughly discussed in earlier Commission opinions.⁵

The Commission’s inability to issue these licenses should not be read as a recommendation one way or the other on the proposed exports. Rather, we have found that the particular statutory findings with which the NRC is charged cannot be made. Congress provided that the President may in such a case authorize the export by executive order if he finds “that withholding the proposed export would be seriously prejudicial to the achievement of United States nonproliferation objectives, or would otherwise jeopardize the common defense and security.”⁶

It is so ORDERED.

By the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 16th day of May 1980.

⁴Testimony of Joseph Nye, Deputy Undersecretary of State for Security Assistance, Science and Technology, before the Subcommittees on International Security and Scientific Affairs, and on International Economic Policy and Trade of the House Committee on International Relations, 95th Cong., 1st Sess., at 118 (May 19, 1977).

⁵CLI-78-8, 7 NRC 436 (1978); CLI-79-4, 9 NRC 209 (1979).

⁶Section 201 of the Energy Reorganization Act, 42 U.S.C. 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 approved. Had he been present he would have voted to approve this Order. Accordingly, the formal vote of the Commission is 4-0.

Chronology of Events

— On March 28, 1979, Louis V. Nosenzo, Deputy Assistant Secretary of State sent a letter to James R. Shea, Director, Office of International Programs, U.S. Nuclear Regulatory Commission, which contained an Executive Branch analysis on XSNM-1379. The Executive Branch concluded that all applicable export licensing criteria were met and recommended issuance of XSNM-1379. Shortly after receiving this submission, the NRC posed additional questions to the Executive Branch regarding India's nuclear programs and policies. The Department of State forwarded its response to the NRC on July 5, 1979. On August 15, 1979, the Commission noted changes in the leadership of the Government of India and requested an Executive Branch assessment of the impact of these developments on the Executive Branch analysis of XSNM-1379. In its letter the NRC noted its intention to defer final consideration of XSNM-1379 and two component cases (XCOM-0240 and 0250) until receiving a response to this inquiry. On October 19, 1979, the Commission sent a letter to the Department of State noting that it had not received a response to the questions raised in the August letter and requesting that the Executive Branch include an assessment of the leadership changes in its views on License Application XSNM-1569, which was then pending in the Executive Branch. On May 7, 1980, the Executive Branch in a letter from Louis V. Nosenzo to James R. Shea provided responses to the Commission's August 15 questions and provided its views on XSNM-1569. The Executive Branch concluded that XSNM-1569 met all applicable criteria for issuance and recommended issuance of the license.

— In a letter from Louis V. Nosenzo to James R. Shea, dated June 11, 1979, the Executive Branch concluded that XCOM-0240 met all applicable licensing criteria and recommended issuance of the license.

— In a letter from Louis V. Nosenzo to James R. Shea, dated October 22, 1979, the Executive Branch concluded that XCOM-0250 met all applicable licensing criteria and recommended issuance of the license.

— In three separate letters from Louis V. Nosenzo to James R. Shea, dated May 13, 1980, the Executive Branch concluded that XCOM-0376, 0381 and 0395 met all applicable licensing criteria and recommended issuance of these licenses.

Chairman Ahearne's Concurring Views

In March 1979 I found that a license application for export of fuel to India for use in Tarapur met the Section 127 criteria and concurred in the Commission's decision to authorize that export.¹ In connection with that decision I made the following statements:

"If there had been no indications of progress towards U.S. nonproliferation goals, I would find that to weigh in favor of denial. The fact that some progress has been made weighs in the other direction.

"The current Government of India has taken truly significant steps to meet these proliferation goals. India is the only country that having exploded a nuclear device, has turned away from nuclear weapons, and has demonstrated the ability to make the difficult choice of not continuing down that path. Although the previous government was certainly not supportive of nonproliferation policy and acted in a manner which was inimical, the present government has done just the opposite—it has acted responsibly and courageously." (Id. at 250).

Since that decision, Mr. Desai has departed and Mrs. Gandhi has been elected Prime Minister. No progress has been made in achieving full scope safeguards and Prime Minister Gandhi "has not ruled out the option of so-called peaceful nuclear experiments, should this be considered to be in India's interest."²

Consistent with my reasoning in the previous case, I can no longer find that the criteria in Section 127 are met. In addition, I do not agree with the Executive Branch's interpretation that the March 10, 1980 deadline for full-scope safeguards meant only that the applicant *intended* to ship the material prior to the deadline. Consequently, I cannot find that the Section 128 criterion has been met. Finally I cannot find that the criteria in Section 109 are met for the same reasons I cannot find that the corresponding criteria in Section 127 are met. Consequently, I agree we should forward these applications to the President for his consideration.

¹*Edlow International Company* (Agent for the Government of India on Application to Export Special Nuclear Materials), CLI-79-4, 9 NRC 209, 230-50 (1978) (separate views of Commissioner Ahearne).

²May 7, 1980 letter from Louis V. Nosenzo, Deputy Assistant Secretary of State, to James R. Shea, Director, Office of International Programs, U.S. Nuclear Regulatory Commission (providing the Executive Branch response to NRC's August 15, 1979 inquiry concerning the impact of the change in government on the prior Executive Branch analysis).

SEPARATE OPINION OF COMMISSIONER GILINSKY

This decision involves, primarily, two export license applications for fuel shipments for the Tarapur Atomic Power Station.¹ These applications, on which the NRC is acting after the expiration of a two-year grace period provided by the Nuclear Nonproliferation Act, are subject to the requirement of Section 128 of the Atomic Energy Act that international safeguards apply to all nuclear facilities in the receiving country.² India has rejected such full-scope safeguards.

In recommending approval of these applications, the Department of State has informed the Nuclear Regulatory Commission that “[i]f the NRC does not act favorably, the President is prepared to authorize the export by Executive Order.”³ There is reason to believe, on the basis of the Department of State’s presentation to NRC, that the Department, prior to submitting these license applications to NRC, assured the President that Section 128’s full-scope safeguard requirement is not applicable to these particular fuel exports, and that the President, in authorizing public comment on his intention, relied on that opinion.

The Nuclear Regulatory Commission disagrees with the Department of State’s interpretation.⁴ The export can take place only if the President grants a waiver from this requirement of the law and if Congress allows that waiver to stand. The law requires the President, in granting the waiver, to

¹XSNM-1379 and XSNM-1569.

²42 U.S.C. Section 2157 which provides that “[a]s a condition of continued United States export of...special nuclear material...to non-nuclear-weapon states, no such export shall be made unless IAEA safeguards are maintained with respect to all peaceful nuclear activities in, under the jurisdiction of, or carried out under the control of such state at the time of the export....”

³Press Correction issued on May 9, 1980 by Deputy Assistant Secretary of State, Louis V. Nosenzo.

The Nuclear Nonproliferation Act contemplates that the President can respond to the Commission’s findings in one of two fashions: he can, after receiving the views of both the Executive Branch and the NRC, determine that a waiver of the Act’s requirements is necessary or he can, prior to submitting the application to the NRC, announce that he is granting an exemption from the full-scope safeguards requirement and ask the NRC to consider only the other applicable provisions of law. In the present case, the Department of State has placed the Administration in the position of ignoring NRC’s views on the applicability of Section 128 to these exports without regard to what these views might be.

⁴The Commission has rejected the Department of State argument that the applicability of the full-scope safeguards requirement depends not on when an export occurs but on when the exporter would have liked it to take place for the reasons set forth in the attached opinion of the General Counsel. “Application of Sections 127 and 128 of the Atomic Energy Act to Proposed Exports to India,” memorandum of the General Counsel to the Commission, May 12, 1980.

find that failure to approve the export "would be seriously prejudicial to the achievement of the United States nonproliferation objectives, or would otherwise jeopardize the common defense and security...."⁵

It is an unfortunate accident of history that these license applications have come under consideration at a time when the international situation is thought to require a serious compromise of our long-term security objective of preventing the spread of nuclear weapons.⁶ It would be even more unfortunate, however, if the decision to except India from this central provision of the Nuclear Nonproliferation Act were made without a full understanding of the price we may be forced to pay.

Full scope safeguards are the *sine qua non* of the Nuclear Nonproliferation Act.⁷ If a waiver is in fact granted by the President, and if it is upheld by the Congress, the law will be gravely impaired. If India does not need to satisfy the full-scope safeguards requirement, other countries will be quick to seek similar exemptions, with the inevitable erosion of the law's effectiveness.

There are other difficulties with the export. For reasons which have been spelled out in prior opinions, and which apply with even greater force now, these fuel shipment applications also fail to satisfy the requirements of Section 127 of the Act.⁸ In relevant part, Section 127 requires a pledge that IAEA safeguards will be applied to any material or facilities proposed to be exported or previously exported, that no material or facility will be used for any nuclear explosive device or for research on or development of any such device, and that not material will be reprocessed without the prior approval of the United States. India has made it clear that if there is any halt, or perhaps even lapse, in the supply of fuel for the Tarapur reactors, it will

⁵Section 126(b)(2) of the Atomic Energy Act, 42 U.S.C. Section 2155.

⁶It should be noted that the present fuel shipments are not immediately necessary to the continued operation of the Tarapur reactors. I understand that India already has sufficient fuel on hand to continue operation of these reactors until the beginning of 1983. If the President grants a waiver from the full-scope safeguards requirement for these two shipments, India will have sufficient fuel to operate the Tarapur reactors until about 1985. In this connection, it should be noted that the Senate section-by-section analysis of Section 128 states that "[t]he NRC should also not permit any other highly unusual proposals which are intended to circumvent this statutory provision." (S. Rep. No. 95-467, 95th Cong., 1st Sess., at 18.)

⁷In its Comments to the Senate Committee on Energy and Natural Resources, the Executive Branch stated that full-scope safeguards were of "...crucial and pivotal importance...to an effective nonproliferation policy..." (S. Rep. No. 95-467, 95th Cong., 1st Sess., at 49.). The House report termed the full-scope safeguards requirement "indispensable to any comprehensive nuclear anti-proliferation policy." (H. Rep. No. 95-587, 95th Cong., 1st Sess. at 25.)

⁸42 U.S.C. Section 2156. See the views I expressed in *Edlow International Company CLI-79-4*, 9 NRC 209 (1979), at 250 (attached).

consider itself free of the contractual obligations of the Agreement for Cooperation and at liberty to reprocess as it sees fit the 200 tons of fuel it already holds hostage.⁹ It has not excluded making explosive use of the more than one ton of plutonium that can be separated from the U.S.-supplied fuel.¹⁰

Commissioner Bradford is in basic agreement with the points made in this opinion.

⁹Letter of May 7, 1980 from Deputy Assistant Secretary of State, Louis V. Nosenzo to James R. Shea, Director of International Programs, United States Nuclear Regulatory Commission.

¹⁰Letter of May 7, 1980 from Deputy Assistant Secretary of State, Louis V. Nosenzo to James R. Shea, Director of International Programs, United States Nuclear Regulatory Commission.

May 12, 1980

MEMORANDUM FOR: Chairman Ahearne
Commissioner Gilinsky
Commissioner Kennedy
Commissioner Hendrie
Commissioner Bradford

FROM: Leonard Bickwit, Jr., General Counsel

SUBJECT: APPLICATION OF SECTIONS 127 AND 128 OF
THE ATOMIC ENERGY ACT TO PROPOSED
EXPORTS TO INDIA

On May 7, 1980, the Executive Branch submitted additional information on XSNM-1379 to the NRC as requested by the Commission in July and October of last year. The Executive Branch also provided its views recommending approval of the follow-on license application, XSNM-1569. Both of these license applications cover proposed exports of special nuclear material to be used at the Tarapur facility. The primary legal issue raised by these applications is whether the full-scope safeguards requirement set forth in Section 128 of the Atomic Energy Act is now applicable to either or both of these licenses.

Applicability of Section 128

In its May 7 submission the Department of State did not provide an analysis in support of its legal position on the Section 128 issue. Instead, the Executive Branch views include a one sentence, conclusory assertion that Section 128 of the Atomic Energy Act does not apply because the two applications were filed with the Commission prior to September 10, 1979, and the initial shipment of the material was reasonably planned to occur prior to March 10, 1980. This legal view appears to represent a change from earlier positions taken by the Executive Branch. For example, in testimony delivered shortly after enactment of the NNPA, when NRC referred Tarapur application XSNM-1060 to the President, Joseph Nye (then Deputy Undersecretary of State for Security Assistance, Science, and Technology) took the position before two congressional committees that the..." Nuclear Nonproliferation Act...establishes that a recipient country must, within two years, have all its peaceful nuclear activities subject to

IAEA safeguards as a condition for U.S. supply *after that time.*” (Emphasis supplied.)¹

The Executive Legal Director provided the Commission with a memorandum on March 6, 1980 which analyzed the legislative history of Section 128 of the Atomic Energy Act and concluded that

...whether or not the March 10, 1980, date in section 128 of the Atomic Energy Act of 1954, as amended..., is in fact a deadline under the present circumstances, with respect to export of low-enriched uranium to Spain, is an extremely close question. Sound and reasonable arguments on each side of the issue can be made and the Commission is free from a legal standpoint to go either way—although, on balance, the better legal position is probably that there is a deadline.²

OGC has reviewed that memorandum, and a February 13, 1979 OGC memorandum to Chairman Ahearn entitled “Tarapur — Analysis of the Legislative History of the Prospective Application of Export Licensing Criteria,” and believes that the State Department’s legal position on the effective date of Section 128 is not defensible. For the reasons set forth below, OGC believes that the Commission must apply the full-scope safeguards requirement to both of the pending Tarapur licenses. In this memorandum we will not reiterate the thorough ELD analysis, but will instead focus on the major issues.

The Executive Legal Director’s office informally discussed the State Department’s position with the Department before drafting its March 6, 1980 memorandum. Apparently, the Department’s argument relies upon a somewhat strained reading of the language of Section 128. That section provides that the full-scope safeguards criterion “shall be applied as an export criterion with respect to any application... which is filed after eighteen months from the date of enactment of this section [September 10, 1979], or for any such application under which the first export would occur at least twenty-four months after the date of enactment of this section

¹Hearings on Nuclear Fuel Export to India Before the Subcommittee on Arms Control, Oceans and International Environment of the Senate Committee on Foreign Relations, 95th Cong. 2nd Session (May 24, 1978) at 339 and 343; Hearings and Markup on Export of Nuclear Fuel to India Before the House Committee on International Relations, 95th Cong. 2nd Session (May 23, 1978) at 38.

²The Eld memo is entitled “Legal Analysis of Section 128 of the Atomic Energy Act with respect to approval of a proposed license to export Low-Enriched Uranium to Spain (License Application No. XSNM-1477, SECY-79-200B and SECY-80-114).”

[March 10, 1980].” In interpreting this provision the State Department believes that the term “would occur” refers to the shipping date planned by the applicant when submitting its export license application, rather than the actual shipping date which, at that time, would be unknown.

It is OGC’s view that this interpretation is inconsistent with the Congressional intent underlying Section 128. As the ELD legal analysis indicates (3-9), the Congressional drafters of the NNPA insisted that a full-scope safeguards provision be included within the Act. The legislative history of the NNPA is replete with statements that on a date certain exports should be terminated to countries which had not accepted full-scope safeguards. The House Committee report, for example, states:

Section 504(e)(2) adds an additional licensing criterion which becomes effective 18 months after the enactment of this bill. This criterion requires that a recipient State permit IAEA safeguards to be applied with respect to all peaceful nuclear activities carried out within that State. This requirement is an essential element of the bill, and in the committee’s view, indispensable to any comprehensive nuclear anti-proliferation policy.

The committee has, in the interest of flexibility, permitted an 18 month period of grace before requiring the mandatory application of this criterion. In addition, the bill provides for further extension by Executive Order, subject to congressional disapproval by concurrent resolution.

India and South Africa would be most significantly affected by this requirement. The committee feels strongly that the currently unsafe-guarded facilities in those countries must be brought within the framework of the IAEA safeguards system if American nuclear cooperation is to continue...³

On July 29, 1977, Senator Glenn, the NNPA’s primary Senatorial sponsor, inserted into the *Congressional Record* a section-by-section analysis of S. 897. In pertinent part, that analysis stated:

In addition to the phase I criteria, the bill prohibits exports to nations which refuse to place all of their nuclear facilities under safeguards...as of 18 months after the date of enactment. The 18 month delay is designed to allow time for negotiations, and the President may delay this requirement for any particular country in extra-ordinary circumstances, subject to Congressional veto.⁴

³H. Rep. No. 95-587, 95th Cong., 1st Sess. at 22, 25.

⁴123 Cong. Rec. S.13139 (July 29, 1977).

In fact it was precisely the inclusion of a date certain cut-off in the full-scope safeguards provision that the Executive Branch initially objected to. In Congressional testimony Joseph Nye asserted: "I should have mentioned the other concern which we have which is the 18-month guillotine—in other words, if you haven't achieved agreement by then, that a uranium embargo would begin."⁵

The Senate Committee report explained the final language of Section 128 as follows:

In defining what exports will be covered by the additional criterion, the bill refers to any application which is filed after 18 months from enactment, and to any application filed prior to that date for an export which would occur at least 24 months after enactment. The reason for this provision is to ensure that a large number of applications covering future exports will not be filed in the 18th month to avoid this requirement. However, the 6-month lagtime is allowed for licenses legitimately filed prior to the 19th month where the actual shipping process is a lengthy one. The NRC should also not prevent any other highly unusual proposals which are intended to circumvent this statutory provision.⁶

We find no indication here or elsewhere in the legislative history of the NNPA that the applicant's intended shipping date is to be the controlling factor in determining whether the full-scope safeguards criterion is to be applied to a given application.

Use of the applicant's proposed shipping date could in fact lead to obviously unintended results. For example, in 1975 an application was filed with the NRC seeking authorization to export high-enriched uranium to South Africa. The Executive Branch has not yet provided the NRC with its views on that application. Suppose that five years from now the Executive Branch recommended issuance of that license. Under the State Department analysis full-scope safeguards would not be required because the application was filed prior to September 10, 1979, and the applicant expected to export the material prior to March 10, 1980. Certainly this is inconsistent with the Congressional intent that there be a "guillotine" approach in the implementation of the full-scope safeguards requirement.

⁵Hearings before the Subcommittees on International Security and Scientific Affairs, and on International Economic Policy and Trade of the House Committee on International Relations, 95th Cong., 1st Sess., at 118 (May 19, 1977).

⁶S. Rep. No. 467, 95th Cong., 1st Sess., at 18.

Despite the establishment of such an approach, Congress recognized that in some cases the United States might wish to continue exports to a given country even though negotiations on full-scope safeguards had not been fruitful. Section 128(b)(1) of the NNPA specifically provides procedures to be followed in such cases. The Act provides that the Commission is not to apply the full-scope safeguards criterion if the President determines that "failure to approve an export to which this subsection applies because such criterion has not yet been met would be seriously prejudicial to the achievement of United States nonproliferation objectives or otherwise jeopardize the common defense and security...." Licenses issued pursuant to this waiver procedure would be subject to Congressional review procedures specified in the Act. The President has made no such determination with respect to the two pending exports to India, and it is therefore our view that the Commission cannot issue the licenses without making a determination that India has accepted full-scope safeguards.⁷

Analysis of Section 127 Criteria

Even if the Commission adopts the State Department position that the full-scope safeguards requirement did not apply to the two pending fuel licenses, the Commission could reasonably take the position that issuance of these licenses — as well as the component licenses pending before the Commission — would be inconsistent with Congressional expectations. In OGC's February 13, 1979 memorandum analyzing Congressional intent with respect to Indian export licenses during the 24 month "grace period," we concluded that Congress intended that exports would continue during the period provided for negotiations. We stated, however, two qualifications to that conclusion. In sum, it was our advice that:

- Congress intended exports to continue throughout the grace period with the blessing of the Commission unless one of two kinds of determinations — reflecting the two caveats mentioned above — could be made. The first is that the recipient nation is not presently in compliance with the obligations reflected in the Phase I criteria or with other statutory requirements, or may not be in compliance later on during the grace period. The second is that circumstances have changed in a material way so that the likelihood of compliance with those obligations and

⁷Despite these provisions, one could conceivably argue that the failure of the Commission to act upon these applications resides with the Executive Branch for failing to respond to the Commission questions on XSNM-1379 and provide views on XSNM-1569 before March 10, 1980 and that under the doctrine of *nunc pro tunc* the licenses could be issued retroactively to March 9, 1980. It is our view that unlike the Argentina case, the doctrine may not be properly applied here. As set forth in the May 8, 1980 OGC memorandum, we believe the *nunc pro tunc* doctrine could be used in cases where bureaucratic error caused unjust results. Here, however, there is no bureaucratic error. The Executive Branch for months has been negotiating with India on full-scope safeguards, and has finally decided to provide its views to the NRC. We therefore do not believe the Commission could legally apply the *nunc pro tunc* doctrine.

requirements, either during or after the grace period, has decreased significantly since enactment.

Focusing on the second of these points, we believe that the Commission could plausibly argue that the likelihood of India's compliance has in fact decreased significantly. Two years of negotiations with India have produced no changes in India's policy with respect to full-scope safeguards, and no change is anticipated in the foreseeable future. If anything, the situation has worsened. Indira Gandhi has been returned to power and in recent months has made assertions that India will not renounce the possibility of developing "peaceful" nuclear explosive devices. Moreover, the Indian Government continues to condition its assurances of compliance by the U.S. - Indian Agreement for Cooperation on continued compliance by the United States with "its obligations under the agreement." (See letter of May 7, 1980 from Louis V. Nosenzo to James R. Shea.)

The likelihood that the sequence of events outlined in the previous Gilinsky-Bradford opinions will ultimately occur would thus appear to have increased with the passage of time.⁸ Whether it has increased to the degree necessary to constitute a "change of circumstances" under the test previously proposed to the Commission is the issue on which we believe the Commission should focus.

SEPARATE VIEWS OF COMMISSIONERS GILINSKY AND BRADFORD

We find the application before the Nuclear Regulatory Commission for the export of enriched uranium to the Tarapur Atomic Power Station in India¹ does not meet the standards for NRC approval set forth in the Atomic Energy Act. We believe it is unwise for the Commission to relax those standards in order to accommodate a favorable decision.

⁸It will be further increased with respect to the component exports if the Commission sends the fuel exports to the President on the basis of their failure to satisfy the section 128 criterion. Our view is that the 128 criterion does not apply directly to the component exports. See OGC memorandum to Commissioner Bradford of February 1, 1980.

¹The License Application is number XSNM-1222, filed by Edlow International, as agent for the Government of India, to export 404.51 kilograms of U-235 contained in 16803.6 kilograms of uranium enriched to a maximum of 2.71 percent.

Under the terms of that Act as amended by the Nuclear Nonproliferation Act the Commission cannot deny an export. The Act sets forth several requirements, principally codified in the six safeguards-related criteria of Section 127.² If the Commission cannot find upon a "reasonable judgment" that an application meets these requirements, it must refer the application to the President, who has broad discretion under the law to balance overall U.S. nonproliferation and security interests.³ Congress intended to separate the function of the Commission in applying the licensing criteria from that of the President and the Congress in their consideration of broader questions of foreign policy. The Section 127 criteria do not apply to the President's decision or to any Congressional review of that decision.⁴

The Commission has not taken the Presidential referral provision of the law lightly. Out of more than one hundred major export applications considered by the Commission, only one, the first proposed export to India subject to the new law, has been referred to the President,⁵ who subsequently authorized the export.⁶ Congress did not override that action.⁷

At the heart of the circumstances leading to the prior NRC decision lay the unique character of the Indian-U.S. Agreement for Cooperation⁸ and the special interpretation India has put on it. Successive Indian governments have consistently tied that country's obligations under the Agreement to the continuing provision of U.S. fuel. The concerns we expressed last year on this point⁹ have deepened, since the situation today does not appear to have altered.

²Section 127 of the Atomic Energy Act, 42 U.S.C. 2156.

³Section 126 of the Atomic Energy Act, 42 U.S.C. 2154.

⁴A close scrutiny of Presidential and Congressional actions on the Tarapur license makes clear that neither the President nor the Congress felt it incumbent on them in carrying out their respective roles under the Act to reexamine the question of whether the criteria were met in determining whether larger nonproliferation objectives required that the export should be authorized.

⁵This was License Application XSNM-1060, referred to the President on April 24, 1978. CLI-78-8, 7 NRC 436 (1978).

⁶E.O. 12055, April 27, 1978.

⁷The United States Senate Committee on Foreign Relations and the United States House of Representatives Committee on International Relations held hearings on the President's decision at which the Commission, the Executive Branch and the petitioners testified. See Hearings before the Subcommittee on Arms Control, Oceans and International Environment of the Senate Committee on Foreign Relations, 95th Cong., 2d Sess. (1978); Hearings before the House Committee on International Relations, 95th Cong., 2d Sess. (1978). On July 12, 1978, the House defeated a motion to overturn the President's decision by a vote of 227-181. 124 Cong. Rec. H.6530. No Senate vote was taken on the issue.

⁸The Agreement provides for the exclusive use of U.S. fuel in the Tarapur reactors and, in a reciprocal provision, a U.S. guarantee to supply the necessary fuel. Article II A.

⁹CLI-78-8, 7 NRC 436 (1978), at 437.

After September, 1979, U.S. nuclear trade with a country not party to the Nonproliferation Treaty (as India is not) will be conditioned on that country's acceptance of international safeguards on all of its peaceful nuclear facilities ("full-scope safeguards").¹⁰ In the case of India, this provision of the Act, which threatens a cut-off of U.S. fuel for India, poses special difficulties even before the end of the 18 month "grace period" for acceptance of full-scope safeguards. These obligations, which are critical for export approval, include the application of international safeguards to the exports,¹¹ an implied understanding not to use any of the exported fuel materials (or reactors) for nuclear explosive purposes,¹² and a requirement to obtain U.S. approval for any retransfer or reprocessing of U.S.-supplied fuel.¹³

India has resolutely opposed full-scope international safeguards over Indian nuclear facilities. If India fails to accept such full-scope safeguards by the end of the statutory grace period, and if that period is not extended by the President (an action the Department of State has termed "highly unlikely"),¹⁴ a cutoff of fuel shipments will follow. We are faced with the distinct possibility that India will interpret this result as freeing it of any reciprocal obligations under the U.S.-India Agreement.¹⁵ In that event the protection now afforded all U.S. nuclear exports to India under the Agreement may well cease to exist.

Had the Indian Government provided assurances that whatever the fate of the Agreement the necessary protections will continue to apply to current and past U.S. nuclear exports, the grace period would not have been

¹⁰Section 128 of the Atomic Energy Act, 42 U.S.C. 2157 requires that non-nuclear weapons states accept international safeguards on all their peaceful nuclear activities as a condition of continued U.S. nuclear export.

¹¹Trilateral Agreement signed by the United States, India and the I.A.E.A. on January 27, 1971.

¹²U.S.-Indian Agreement for Cooperation, Article VII.

¹³U.S.-Indian Agreement for Cooperation, Article VII A (2), Article II F, Article II E.

¹⁴Testimony of Joseph S. Nye, Deputy to the Under Secretary for Security Assistance, Science and Technology, U.S. Department of State, before the Subcommittee on Arms Control, Oceans and International Environment of the Senate Committee on Foreign Relations, 95th Congress, 2d Sess. (May 24, 1978), at 352.

¹⁵The Indian interpretation is at odds with a plain reading of the fuel supply contract implementing the Agreement for Cooperation. The contract provides that India shall comply with the laws of the United State and with any changes in the law or policies of the United States with respect to ownership and supply of special nuclear material. Contract of Sale, May 17, 1966. Article XI. A 1971 amendment to the sales contract provides that the "purchaser shall procure all necessary permits or licenses...and comply with all applicable laws, regulations and ordinances of the United States...." Should India fail to comply with the requirements of Section 128 of the Atomic Energy Act, India would not be in compliance with applicable law and the United States would be relieved of its obligation to supply fuel until India complied.

disturbed by unresolved questions and disagreement within the NRC. But no such assurances have been received.

The details of the special problems that attend the Indian Agreement and the arguments against NRC approval are presented at some length in our separate views on the previous Indian license application¹⁶ and there is no need to repeat them here. Since that time the situation has not changed for the better. The grace period is shrinking rapidly. We are now some six months away from the time this agency can no longer approve applications for nuclear exports for Tarapur failing India's acceptance of international safeguards on all its nuclear facilities. We are less than a year away from the time, given these same circumstances, when all shipments to Tarapur will have to cease. This is relevant to the present application: Congress did not intend the NRC to turn a blind eye to the serious possibility that in less than a year the accumulated pile-up of U.S. fuel shipped to India over the years will be placed forever beyond the U.S. controls required by the statute. It is not just this but also all preceding shipments of fuel which are at risk.

The fact that assurances covering the eventual fate of U.S. supplied fuel apparently cannot be obtained during the grace period means that the Commission faces a choice: It can approve the export before it by stepping outside the boundary drawn by the Congress for uniform and consistent application of the criteria and into territory which has been explicitly reserved for the President. Or it can acknowledge the plain fact that the criteria are not met and refer the matter to the President's broader discretion.

ADDITIONAL VIEWS OF COMMISSIONER KENNEDY

I agree with the Commission's conclusion in this case that, based upon the information before us, we are unable to find that the proposed exports meet the criteria set forth in Section 109, 127, and 128 of the Atomic Energy Act. That is not to say, however, that the pending applications should not ultimately be granted.

Our focus under the Atomic Energy Act and the Nuclear Nonproliferation Act is upon a narrow, albeit complex, set of criteria designed to ensure that, to the fullest extent possible, all exports of source material, special nuclear material, production or utilization facilities, and sensitive nuclear technology comport with the nonproliferation objectives set forth in Section 2 of the Nuclear Nonproliferation Act of 1978 (NNPA). That Act is the

¹⁶CLI-78-8, 7 NRC 436 (1978), at 437.

product of extensive discussion concerning the proper balance to be struck between the traditional role of the Executive Branch in conducting foreign affairs, on the one hand, and, on the other, the relatively novel oversight function to be fulfilled by the Nuclear Regulatory Commission, an independent regulatory body. It is this synthesis of decision-making functions which has introduced substantial uncertainty both at home and abroad in the export process.

We must not lose sight of the fact that the NNPA is premised, in large part, upon the notion that decisions made by the NRC in the area of export licensing require substantial interaction with the Department of State. Indeed, effective implementation of the NNPA presupposes heavy reliance by the NRC on the recommendations of the Secretary of State and other agencies which are directly responsible to the President. To the extent that the NNPA imposes constraints, either implicit or explicit, on the Commission's ability to defer to the judgment of the Department of State, it is in fundamental conflict with the paramount principle upon which this country's conduct of foreign affairs is based—that decisions involving intricate and delicate matters of foreign policy are best made by, and properly vested in, the President, and those responsible to him, in consultation with the Congress.

We now find ourselves in an awkward position, faced with a recommendation by the Secretary of State that the Tarapur licenses issue, but unable to find that the proposed exports meet the criteria set forth in Sections 109, 127, and 128 of the Atomic Energy Act. The statute leaves us no choice and compels the decision reached by the Commission.

Lest this decision be seen by our trading partners as indicative of a posture of equivocation toward further nuclear exports, however, it should be made clear that the Commission's decision is not to be interpreted to mean that these export licenses should not be granted.

The NNPA established a procedure whereby the ultimate decision in cases such as the one before us, involving intricate balancing of seemingly conflicting considerations of foreign policy, is to be made by the President with Congressional review. But such a complex decision-making process must inevitably strain credibility.

It is difficult even for serious and knowledgeable students of the American government to understand the unique and all but anomalous position of this Commission in that government—independent of the President as head of the Executive Branch, though, in fact, a part of that Branch. How can it be expected that those abroad, on whose good will and cooperation successful pursuit of U.S. nonproliferation policy depends so greatly, will understand that the conclusions and recommendations of the President's senior foreign policy advisors can be ignored in effect by an

agency which, though technically a part of the Executive Branch, is wholly independent of the leadership and policy-making function of that Branch? And if this might seem anomalous, is it easier to comprehend because the President, who cannot affect the NRC decision in the first instance, can then reverse that decision if it is in the negative (provided that Congress concurs)?

It is customary for governments in important matters of policy and international relationships to speak with a single voice. Yet a cacophony is here illustrated. If it is reasonable thus to expect that this process be perceived as indicative of a commitment to the principle of reliable supply—a fundamental principle of the Nuclear Nonproliferation Act—it must be assumed that our trading partners will ignore those inconsistent voices and listen only to one—but which one?

As we relinquish jurisdiction over these applications, unable to find that the criteria in Sections 109, 127, and 128 are met, it should be recalled that one of the fundamental cornerstones of the NNPA is that we avoid actions which would adversely affect those whose cooperation is essential to our ultimate nonproliferation objectives. Caution must be exercised to avoid measures which could drive recipient nations to other suppliers, or toward the development of indigenous facilities to meet their nuclear fuel needs. The immediate case calls for an analysis not only of the criteria set forth in Sections 109, 127, and 128, but also of the implications for U.S. nonproliferation goals and policy and for U.S. relations abroad more generally. Such an approach is entirely consistent with Congress' intent that the analysis called for by Sections 109, 127, and 128 not be undertaken in total disregard of the foreign policy implications of alternative courses of action.

It is clear that the implications of the decision here will be significant. Trading partners not parties to this matter will view the decision as inconsistent with the stated or implied national policy, whatever the decision may ultimately be. To some, it will be seen as a vindication of their own doubts as to U.S. constancy and to others as unfair and unbalanced toward them. Yet, in a more rational decision-making framework than that here required, devoid of the need for posturing and assertive determination by decision-makers who have no reasonable role in or responsibility for foreign affairs of this government, a sound and reasonable result consistent with our objectives might have been expected through the application of quiet diplomacy and a reasonable balancing of our interests and those of our friends abroad.

In short, the requirement that the Commission publicly not its inability to act favorably on this request despite the strong representations of the Secretary of State does not bode well for future efforts to negotiate a

consensus on the issue of nonproliferation with the government of India. It seems a classic case of the proverbial "biting off one's own nose to spite his face." Although it is true that the existence of such a continuing cooperative relationship will not guarantee achievement of our nonproliferation goals, it is clear that the absence of such a basis for continued discussion and negotiation will likely bar any hope of achieving those goals. The power to persuade depends wholly on the ability to communicate. Thus, while I agree with the conclusion reached by this Commission, I would support a subsequent decision by the President to authorize these exports by Executive Order.

Commissioner Hendrie's Concurring Views

I concur in the Commission's conclusion that, based on a reasonable judgment of the information in hand, it cannot find that the seven license applications at issue here meet the criteria for license issuance. Therefore, these license applications should be referred to the President.

In an earlier opinion with Commissioner Kennedy, I expressed the view that Congress contemplated that exports to India would continue during the grace period provided in the Nuclear Nonproliferation Act of 1978 for implementation of full-scope safeguards. CLI-79-4, 9 NRC 209 (1979). That grace period expired on March 10, 1980. Because the Government of India has not accepted full-scope safeguards, I am unable, under the law, to find that the proposed fuel shipments meet the requirements of Section 128 of the Atomic Energy Act.

The unique provisions of the US-India Agreement for Cooperation, coupled with the negative result compelled by Section 128 in the present circumstances, then raise, in my view, significant doubt as to whether the assurances of the Government of India satisfy the requirements of Sections 109, and 127 of the Atomic Energy Act for the proposed component and fuel shipments. Consequently, I am unable to find that the proposed component and fuel shipments meet the criteria of those Sections for license issuance.

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

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

In the Matter of

Docket No. 50-289OL

**METROPOLITAN EDISON
COMPANY****(Three Mile Island Nuclear
Station, Unit No. 1)**

May 16, 1980

Announcing that it generally favors intervenor funding as a matter of policy, the Commission nevertheless denies a request to provide financial assistance to intervenors in this restart proceeding in light of Congressional disapproval of the use of appropriated funds for such purposes in fiscal year 1980. See also CLI-80-20.

MEMORANDUM AND ORDER

The Consumer Advocate of Pennsylvania, participating in this proceeding as a representative of an interested governmental agency pursuant to 10 CFR 2.715(c), has petitioned the Commission to provide financial assistance to intervenors for retaining experts who will submit studies and/or testify before the Atomic Safety and Licensing Board. Alternatively, the petitioner asked the Commission to delegate to the Licensing Board the authority to grant funding for expert witnesses to be called by intervenors. The petition was directed to the Commission because, on October 15, 1979, the Licensing Board rejected requests by other intervenors for such funding on the ground that it was "without authority to grant any funding."¹

¹Memorandum and Order (October 15, 1979).

On November 21, 1979, the NRC staff filed a response to the petition. The staff's view is that the request for funding is improperly before the Commission and that current Commission policy does not sanction such funding.

On December 3, 1979, the petitioner requested leave to file a brief addressing the issues raised in the NRC staff's response. A copy of the brief accompanied that request. We will grant the request and accept the brief for our consideration.²

The petition sets forth for Commission consideration the policy question of intervenor funding in the proceeding. We have chosen to address the petition on its merits in the exercise of our inherent supervisory authority over agency adjudications.³ At the outset, we do not think that it is necessary to resolve the question of whether the petitioner, charged with representing the interests of Pennsylvania consumers under state law, may properly assert claims raised by other persons — including Pennsylvania consumers — before the Licensing Board. The Commission treatment of the funding issue will affect the petitioner, as well as other parties or formal participants in the proceeding. Thus we believe that it is reasonable to read the petition, as the NRC staff has read it, as one in which "petitioner requested financial assistance on behalf of itself and those intervenors who have either requested or who may at some later date request financial assistance . . ." (NRC staff Response at 1). For this reason, there is no basis to object to petitioner's standing to raise the funding arguments.

As the parties and the Licensing Board have recognized, the Commission has previously declined to proceed with a program for intervenor funding, *Financial Assistance to Participants in Commission Proceeding*. 4 NRC 494 (1976). The Commission's August 9, 1979 order in this case, holding open the possibility of funding on the issue of psychological distress, was a departure from that general policy. Furthermore, a majority of the Commission has expressed an intention of proceeding with a pilot program

² On December 21, 1979, the NRC staff submitted a pleading in which it argued that the petitioner had not shown sufficient justification to waive 10 CFR 2.730(c), which prohibits a moving party from replying to an answer to its motion unless permitted to do so by the Secretary. The NRC staff has requested that it be allowed to respond to arguments in the petitioner's reply brief if the Commission chooses to accept that reply brief. In light of the disposition of petitioner's request for funding, we see no need to have the staff submit any additional pleading.

³For this reason, we do not believe that it is relevant that the Licensing Board refused to certify the question of intervenor funding to the Commission. See "Memorandum and Order Denying Motions by TMIA and ANGRY" (October 31, 1979). Although there is an express certification method whereby a party may seek to have the Commission consider waiving the application of any of its rules or regulations which affect licensing standards, 10 CFR 2.758, there is no specific route set forth for dealing with the type of request presented by the petitioner.

for intervenor funding in fiscal year 1981 if Congress approves such a program.

The Commission notes in passing that apparently the staff has not recognized that the current Commission *does* favor funding intervenors, contrary to the implication of Section III of the staff's response to the petition. The Commission notes that the Congress has precluded such funding, and therefore, the Commission will not fund intervenors. However, as clearly indicated by the FY 81 budget submission and subsequent Congressional testimony, the Commission is in the favor of such funding.

However, the Commission's present policy on funding may be characterized, petitioner's request will be denied at this time. The House Appropriations Committee, referring to appropriations for fiscal year 1980, stated that the NRC "budget request and the committee recommendation do not include funds for intervenors." H.R. Rep. No. 96-243, 96th Cong., 1st Sess. 136 (June 7, 1979). The Senate Report for fiscal year 1980 was silent on this point, but the Conference Report adopted all language in the House Report not specifically objected to H.R. Rep. No. 96-388, 96th Cong., 1st Sess. 1 (July 25, 1979).⁴ There was no objection to the House Report language on "funds for intervenors."

Assuming that the Commission has implied authority in its enabling legislation to fund intervenors, a prohibition in an appropriations bill itself on the use of NRC "funds for intervenors" would have suspended that authority for moneys covered by that bill. See *National Labor Relations Board v. Thompson Products*, 141 F.2d 749 (9th Cir. 1944). But there has been some uncertainty over whether a restriction contained merely in the legislative history of an appropriations bill similarly affects an agency. Compare *Winston Bros. Company v. United States*, 130 F. Supp. 374 (Ct. Cl. 1955) with *McKay v. Central Electric Power Cooperative*, 223 F.2d 623 (D.C. Cir. 1955) (dictum).

In order to resolve these and other uncertainties, on November 2, 1979, the General Counsel of the NRC wrote to the Comptroller General of the United States with an inquiry as to "whether there are, in fact, circumstances under which the Commission may legally use public funds, as appropriate in fiscal year 1980, to provide financial assistance to intervenors." On January 25, 1980, the Comptroller General issued his decision, *Financial Assistance to Intervenors in Proceedings of Nuclear Regulatory Commission*, B-92288, in which he concluded that the Commission has authority in its organic legislation to use appropriated funds to assist an

⁴The appropriations legislation to which these reports relate was enacted after the Commission adopted its August 9, 1979 "Order and Notice of Hearing" which mentioned the possibility of funding on the issue of psychological distress.

intervenor, that the restriction "indicated in the [Congressional committee] reports was not a legal limit on the agency's spending because it was not expressly stated in the appropriation act," but that the Commission "may be well advised to postpone further implementation of the pilot intervenors's program . . . in light of the 1980 House Appropriations Committee report."

We do not expressly reject or otherwise reach a position on the representations made by the Consumer Advocate of Pennsylvania that there are compelling reasons for agreeing to fund intervenors in this case. Rather we decline to consider such funding in light of the advice of the Comptroller General and our clear reading of the legislative history associated with the fiscal year 1980 appropriations legislation. Accordingly, for the fiscal year 1980 we are hereby also reversing our earlier position, set forth in our August 9, 1979 "Order and Notice of Hearing," that we would consider providing financial assistance to parties seeking to raise issues such as psychological distress and others arising from the continuing impact of aspects of the accident unrelated directly to exposure to radiation, assuming we determine those issues to be relevant.³

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 16th day of May 1980.

³Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present, both Commissioner Gilinsky and Commissioner Kennedy would have voted with the majority on this Order. Accordingly, the formal vote of the Commission is 3-0.

CONCURRING OPINION OF COMMISSIONER BRADFORD:

I should note at this time that I will not vote to approve a reopening of TMI Unit 1 if I am persuaded that issues of significance to the public health and safety were not adequately explored for no other reason than that one or more parties lacked necessary funding.

I intend this particularly as an admonition to the NRC staff involved in this case to be certain that we have a complete and an even-handed record. In view of the constraints imposed on the Commission's ability to fund intervenors, the responsibility seems to me to fall squarely on the staff to fill out the record in areas of consequence in which the intervenors are unable to do so.

Commissioner Gilinsky has authorized me to state that he agrees with the substance of these views.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 50-2890L

**METROPOLITAN EDISON
COMPANY**

**(Three Mile Island Nuclear
Station, Unit No. 1)**

May 16, 1980

In response to a "Certification to the Commission" from the Licensing Board in this restart proceeding, the Commission announces that it will not provide financial assistance to intervenors to address the psychological distress issue. See also CLI-80-19.

MEMORANDUM AND ORDER

We have received a "Certification to the Commission on Psychological Distress Issues" (February 22, 1980) from the Atomic Safety and Licensing Board in this proceeding. The certification noted that "there are intervenors and attorneys in this proceeding who have the skills to use intervenor funds effectively," and it referred specifically to People Against Nuclear Energy (PANE). In a later ruling, "Licensing Board's Memorandum to the Commission on Psychological Stress Issues" (April 8, 1980), the board noted that its earlier statement about effective use of intervenor funds did not refer to Chesapeake Energy Alliance (CEA), another party to the proceeding which has requested such funding.

Although we have not yet determined whether the issue of psychological distress should be considered in this case, for the reasons stated in our Memorandum and Order of May 16, 1980, we wish to make it clear that the Commission will not provide any funds for intervenors to plan for and address this issue in fiscal year 1980. Accordingly, the requests for such funding from PANE, CEA and any others will be dismissed.^{1 2}

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated in Washington, D.C.
This 16th day of May 1980.

¹The Commission notes that its staff recently signed a contract with the "Human Design Group," composed of medical psychologists and other experts from medical school faculties, who were recommended by officials in the National Institute of Mental Health and a group of experts involved in the study of the psychological stress issue for the Kemeny Commission. These consultants will evaluate that issue in connection with the clean-up efforts at TMI-2.

²Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present, both Commissioner Gilinsky and Commissioner Kennedy would have voted with the majority on this Order. Accordingly, the formal vote of the Commission is 3-0.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

John F. Ahearn, Chairman
Victor Gillnsky
Richard T. Kennedy
Joseph M. Hendrie
Peter A. Bradford

In the Matter of

**PETITION FOR EMERGENCY
AND REMEDIAL ACTION**

May 27, 1980

Upon consideration of a petition by the Union of Concerned Scientists for reconsideration of CLI-78-6, 7 NRC 400 (1978), which denied petitioner's requests for emergency relief concerning fire protection for electrical cables and environmental qualification of electrical components the Commission affirms its earlier decision with certain revisions and clarifications.

**REGULATIONS: ENVIRONMENTAL QUALIFICATION OF
SAFETY SYSTEMS**

A fundamental principle of NRC regulation of nuclear power reactors is that safety systems must perform their intended functions in spite of the environment which may result from postulated accidents. Confirmation that these systems will remain functional under postulated accident conditions constitutes environmental qualification, the legal requirements for which are found in General Design Criteria 1 and 4 of Appendix A, Part 50; Criterion III of Appendix B, Part 50; and 10 CFR 50.55a(h).

SAFETY STANDARDS: COMPLIANCE

The Division of Operating Reactors' (DOR) Guidelines and NUREG-0588 from the requirements which licensees and applicants must meet in order to satisfy those aspects of 10 CFR Part 50, Appendix A, General

Design Criterion 4 which relate to environmental qualification of safety-related equipment.

ATOMIC ENERGY ACT: DUTIES OF APPLICANT/LICENSEES

The NRC is dependent upon all of its licensees for accurate and timely information. Licensees must have a detailed understanding of their own plants in order to meet their obligations for public safety by ensuring a sound basis for making assessments of plant safety.

SAFETY STANDARDS: COMPLIANCE

Where the staff in its review is confronted with qualification documents which are poor or where existing documentation raises questions about the ability of the equipment to perform its intended function in accident conditions the staff will make a technical judgment regarding continued operation.

SAFETY STANDARDS: COMPLIANCE

The guidance contained in Appendix A to Branch Technical Position (BTP) 9.5-1 and the requirements set forth in the Commission's proposed rule concerning fire protection define the essential elements for an acceptable fire protection program at nuclear power plants docketed for construction permit review prior to July 1, 1976 for demonstration of compliance with General Design Criterion 3 of Appendix A to 10 CFR Part 50. Similar acceptable guidance is provided in BTP 9.5-1 for nuclear power plants docketed for construction permit review after July 1, 1976.

MEMORANDUM AND ORDER

The Union of Concerned Scientists (UCS) initiated this matter on November 4, 1977 by filing with the Commission a "Petition for Emergency and Remedial Relief." The petition sought action in two areas: fire protection for electrical cables, and environmental qualification of electrical components. After an extended period of review by the NRC staff, and having received numerous submissions from the staff and UCS in addition to public comments, the Commission issued a Memorandum and Order on April 13, 1978.¹ Although the emergency relief sought by UCS² was not

¹7 NRC 400.

²The petition asked the Commission to immediately shut down all operating plants, and to halt construction of new plants.

granted, the Commission ordered its staff to take several actions related to petitioner's request.

UCS filed a petition for reconsideration on May 2, 1978. By order dated June 27, 1978 the Commission determined as a matter of discretion to consider this petition, and requested the NRC staff to provide its views on all issues raised by the UCS independent of the Commission's April 13 decision. In addition to its overall evaluation of the petition, the staff was asked to respond to specific questions which reflected the Commission's view of the discrete issues raised by the petition. Certain items of immediate safety interest were reported to the Commission on July 6, the remainder of the staff analysis was provided to the Commission on August 31 with additional clarification provided on September 19, 1978.³ Additional Commission questions directed to the staff on October 6, December 5 and December 12, 1978 were responded to in a staff memorandum dated October 26, 1978 and in staff papers SECY-79-112 (February 12, 1979) and SECY-79-112A (March 15, 1979). On March 7, 1979, UCS filed a Motion for Expedited Decision Making, and requested a meeting with the Commission. This motion restated the UCS arguments previously presented. On March 21, UCS submitted a letter concerning fire protection at nuclear plants, repeating previous UCS contentions, and making reference to the November 1977 UCS Petition. In response to Commission questions, the staff submitted further information on August 24, 1979. On November 5, 1979, UCS submitted a letter again requesting Commission action.

We reaffirm the decision made on April 13, 1978 regarding the possible shutdown of operating reactors. We believe that current Commission requirements in the fire protection and environmental qualification areas and those actions we order today provide reasonable assurance that the public health and safety is being adequately protected during the time necessary for corrective action. However, in reviewing the Petition for Reconsideration, we came across several areas of concern. In this decision on reconsideration, we will discuss these areas of concern as well as relevant new developments and those contentions made by UCS which we think warrant comment. All other issues and contentions were adequately dealt

³Nineteen public comments on the petition for reconsideration were received in response to the June 27 order. The comments represented views from private citizens, public interest groups, and the nuclear industry, and ranged from strong support for the April 13 decision to strong support for the UCS position. The staff reviewed these comments, and reached the conclusion that no new safety information was provided which might call into doubt the conclusions reached in our April 13 decision. As a result of the actions taken in today's order, the Commission concurs with the staff conclusions.

with in our original decision and the staff responses to the Petition for Reconsideration.

As we stated in our April 13th decision, UCS has highlighted an "area of regulatory review which heretofore had not been adequately addressed." This continues to be our view: UCS has made an important contribution to our regulatory efforts in the area of fire protection and environmental qualification for electrical equipment. The staff also is to be commended. It has responded well to the concerns raised in this proceeding by instituting a systematic re-evaluation of environmental qualification under specific guidelines and committing itself to a fire protection testing program. While these efforts are probably not due solely to this proceeding, they do reflect a sensitivity to the problems raised here.

Environmental Qualification Issues

As we stated in our original order, fundamental to NRC regulation of nuclear power reactors is the principle that safety systems must perform their intended functions in spite of the environment which may result from postulated accidents. Confirmation that these systems will remain functional under postulated accident conditions constitutes environmental qualification. The current legal requirements for qualification are found in General Design Criteria 1 and 4 of Appendix A, Part 50; Criterion III of Appendix B, Part 50 and 10 CFR 50.55a(h).⁴ These are general requirements restating the principle that licensees should have qualified equipment.

The NRC has used a variety of methods to see that these general legal requirements are met for electrical safety equipment. For the oldest plants, qualification was based on the fact that the electrical components were of high industrial quality. For the newer plants after 1971, qualification was judged on the basis of IEEE-323-1971. However, no Regulatory Guide was ever issued adopting the 1971 IEEE-323 standard although some of the plants referenced IEEE-323-1971 in their licensing submissions to the Commission.⁵ For the newest plants whose Safety Evaluation Reports were issued after July 1, 1974, the Commission has issued Reg. Guide 1.89 which in most respects adopted the most recent IEEE Standard 323-1974.

Currently, the Commission has underway a program to reevaluate the qualification of safety-related electrical equipment in all operating reactors. As part of this program, more definitive criteria for environmental qualification of safety-related electrical equipment have been developed by the staff. The Division of Operating Reactors' "Guidelines for Evaluating Environmental Qualification of Class IE Electrical Equipment in Operating

⁴This standard applies only to plants which received their CP's after January 1, 1971.

⁵Twelve of the 70 plants licensed to operate make specific reference to IEEE-323-1971.

Reactors" (DOR Guidelines) were completed in November 1979. The Guidelines are intended as a screening device to catch those pieces of equipment which might have qualification problems. In addition, for reactors under licensing review, the staff has issued NUREG-0588. "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment." The staff intends to evaluate the qualification of all electrical safety equipment in operating plants pursuant to the Guidelines. If problems arise, the intent is to resolve the problem using NUREG-0588 as a guide for the staff's judgment.

Against this background, the Commission has been requested by UCS to reexamine the 1971 IEEE-323 standard and order that all operating plants be upgraded to meet the 1974 IEEE-323 standard. The staff, UCS and the licensees have commented upon this issue in their numerous submissions to us. Based upon our examination of those submissions, it is clear to us that the 1971 standard by itself cannot serve as the standard against which qualification is to be judged. A full description of this 1971 standard and its comparison to the 1974 standard is contained in the August 24, 1979 staff submittal. Briefly, the standard does not specify the accident conditions which the electrical equipment must meet. There are no specific requirements to maintain document files and no specific requirements concerning margin, aging and other needed equipment specifications. It is, in fact, a document which briefly and broadly describes how to qualify any equipment, electrical or otherwise.

The DOR Guidelines and NUREG-0588 substantially improve upon the 1971 standard and should provide greater assurance that equipment is adequately qualified. In its August 24, 1979 submission, the staff stated that it intended by the Guidelines to provide a level of confidence essentially equivalent to that which would be achieved from the application of IEEE-323-1974. The Commission endorses the staff's actions to use the DOR Guidelines to review operating plants and NUREG-0588 to review plants under licensing review as well as those pieces of equipment in operating plants which do not meet the DOR Guidelines. Furthermore, pursuant to Section 161(b) of the Atomic Energy Act and based upon the record in this proceeding, the Commission is ordering today that these two documents form the requirements which licensees and applicants must meet in order to satisfy those aspects of 10 CFR 50, Appendix A, General Design Criteria (GDC)-4⁶ which relate to environmental qualification of safety-related electrical equipment. Licensees of operating reactors are to comply with these requirements so that the applicable equipment in all operating plants

⁶These standards obviously do not supplant the IEEE ancillary standards which deal with the qualification of specific pieces of equipment.

shall meet the DOR Guidelines or NUREG-0588. Non-compliance can be the basis for appropriate enforcement action after the implementation deadlines ordered below. In order to leave no room for doubt on this issue, the staff is to prepare additional technical specifications for all operating plants which codify the documentation requirement paragraph of the Guidelines (paragraph 8.0). After approval by the Commission, these new technical specifications will be added to each license.

The Guidelines leave open the question of what standard will be applied to replacement parts in operating plants. Unless there are sound reasons to the contrary, the 1974 standard in NUREG-0588 will apply.

The Guidelines and NUREG-0588 apply progressively less strict standards to the older plants. The justification for this position was not articulated at the time the older plants were grandfathered from the provisions of Reg. Guide 1.89. There was some discussion of this issue in the staff's August 24 submittal. We believe that this problem is best resolved by a rulemaking on environmental qualification of safety-grade electrical equipment. If the staff proposed rule does not require plants to be upgraded to a single uniform standard along the lines of the 1974 requirements in NUREG-0588, then its justification for that position will be articulated in depth and will be subject to comment in the proceeding.

As ordered above, the Guidelines and NUREG-0588 will state the requirements of GDC-4 until the rulemaking has been completed. For this interim period, the licensee and the public should be able to examine the basis for the staff's judgment concerning qualification. Accordingly, a written record of the staff's qualification judgment should be kept.

We stated in our April 13, 1978 order that the NRC is dependent upon all of its licensees for accurate and timely information. We expressed concern that some of the licensees' initial responses:

"indicate a lack on their part of detailed knowledge of the quality of installed plant equipment. Licensees must have this detailed understanding of their own plants in order to meet their obligations for public safety by ensuring a sound basis for making assessments of plants safety."

The history of the qualification issue since our April 13, 1978 order indicates that some licenses have ignored the responsibility we emphasized in our original order. As set forth in our April 13 order, our Office of Inspection and Enforcement had in late 1977 and early 1978 sent several Bulletins to licensees alerting them to qualification problems of specified electrical equipment. On May 31, 1978 our Office of Inspection and Enforcement sent a circular to licensees bringing to their attention our April 13 order and reminding them that:

"[Y]ou should examine installed safety-related electrical equipment, and ensure appropriate documentation of its qualification to function under postulated accident conditions."

Despite this explicit direction, I&E found that the licensee rereviews and resolutions of qualification problem areas were not receiving the attention they warranted. Therefore, on February 8, 1979, I&E sent Bulletin 79-01 which required essentially the same things as the prior Circular, except that the licensees were required to respond in writing. In view of our original order and the subsequent circular and bulletin, some of the responses to Bulletin 79-01 indicate a disregard for environmental qualification problem. Despite the specific directions in Bulletin 79-01, some licensees did not meet the time deadlines imposed and did not provide the information required. The responses showed that some licensees, more than a year after our April 13 order, had unqualified equipment in their plants. Others did not have the documentation required to show qualification. Still others, if they possessed the documentation, did not include it in the response to the NRC, contrary to the Bulletin requirements. The staff must not tolerate the type of licensee response received in response to the qualification bulletins and circulars. It has the power to order licensees to comply with bulletins and circulars and that power should be exercised in cases like this.

The staff has sent out a new bulletin, Bulletin 79-01B, requesting not only the same information as Bulletin 79-01, but some additional information as well. It has initially reviewed some of the responses to this Bulletin. In addition, it has underway an inspection program at various plants to check environmental qualification. The results show that after two years from our initial decision in this matter, environmental qualification remains a serious problem. Almost none of the equipment so far examined meets all aspects of the DOR guidelines which include the areas which any qualification judgment must address.⁷ ⁸ Deviations from the guidelines

⁷Commissioner Bradford notes that the situation is worse than this decision acknowledges. As the staff indicated in an April 15, 1980 briefing, "I guess when one makes the statement that we haven't found any equipment that meets all the guidelines, it's clear that we've found at least some equipment that just about every piece of the guidelines isn't met on." (unofficial transcript) The particular equipment referred to has since been replaced or the licensee has provided adequate justification for continued operation.

⁸Commissioners Kennedy and Hendrie note that the staff has indicated (memo from W. Dircks to Commissioner Hendrie dated May 23, 1980) that, in each case where equipment so far examined by the staff has been identified as not being in compliance with provisions of the DOR Guidelines, either the equipment has been replaced or justification has been provided for continued plant operation while outstanding concerns are being resolved. The staff has further indicated that they have not identified any safety-related electrical equipment to date, other than that which has been required to be replaced or where adequate justification has been provided or continued operation, which will not perform its intended safety function during the time period in which it is required to function.

include such things as an inadequate test sequence where not all of the service conditions were addressed, incomplete documentation of tests performed, no consideration given to aging and the fact that the component installed in the plant is not identical to the component tested because of differences in model, size and materials. These deficiencies do not necessarily mean that the equipment is unqualified. However, they are cause for concern and require further case-by-case evaluations since the deviations involve areas which any environmental qualification judgment must address.

In connection with its review of 79-01B, the staff has found instances where equipment has not been installed according to its environmental qualification design. Thus, even though the environmental qualification documentation may be in order, the actual equipment in place might not be environmentally qualified. Licensees must check their own equipment in place to make sure this problem does not arise in their plants. Staff will devise a system for checking this area.

Based on problems like these and the history of previous responses to Commission issuances on this subject, it is obvious to us that the nuclear industry is not devoting the resources necessary to solve the environmental qualification problem.

The staff has obtained from some licensees information vital to qualification judgments which, because of its proprietary nature, is not being shared with other licensees so that costly, unnecessary retesting is required and environmental qualification judgments are delayed. Such delays may affect safety as related decisions about equipment replacement are delayed. Accordingly, we are directing the staff to review environmental qualification information in its possession to determine how much of the information may be released to licensees to aid them in making safety judgments. This review should be completed within 45 days and the results forwarded to the Commission. We are also directing the staff to promptly pursue the possibility of the establishment, by the nuclear industry, of a Nuclear Qualified Equipment Clearinghouse. This Clearinghouse would have as its objective the sharing by all parties of environmental qualification information.

The Commission considers the staff's review of the 79-01B Bulletin responses to be of high priority, and the staff is requested to keep the Commission and the public apprised of any further findings of incomplete environmental qualification of safety-related electrical equipment, along with corrective actions taken or planned. The staff is requested to provide bimonthly reports of progress on this review. The staff is directed to complete its review of environmental qualification, including the publication of Safety Evaluation Reports by February 1, 1981. By no later than

June 30, 1982 all safety-related electrical equipment in all operating plants shall be qualified to the DOR Guidelines or NUREG-0588. These deadlines, however, do not excuse a licensee from the obligation to modify or replace inadequate equipment promptly.

During its review, the staff will be faced with many situations where qualification documents are poor or where the existing documentation raises questions about the ability of the equipment to perform its intended function in accident conditions. In such cases, the staff will make a technical judgment regarding continued operation.

In its petition, UCS requested that the Commission provide an opportunity for hearing once the staff had determined that the equipment was qualified to the standard it had requested. We believe there is no reason for the Commission now to order that such an opportunity be provided. If an interested person reviews the staff's written judgment on qualification and desires a hearing on the issue, that person may petition the Commission pursuant to 10 CFR 2.202 and 10 CFR 2.206.

One other problem area related to the environmental qualification issue has arisen in our review of the Petition for Reconsideration. This area concerns the delay associated with deciding upon an NRC environmental qualification testing program. In a separate memorandum sent today, we have asked the staff to address this area promptly.

We wish to clarify one point in our April 13, 1978 decision where we stated that:

...because the Sandia tests on environmental qualifications were inconclusive, the Commission is directing that this testing be repeated on qualified connectors with the results reported to the Commission and made available to the public. These connectors, qualified in accordance with IEEE-323 (1974), should include a representative sample of those commercially available and in use in nuclear power reactor safety systems.⁹

The intent here was to obtain information not provided by the unsuccessful Sandia Tests. However, in a staff memorandum of May 4, 1978, it was noted that no electrical connectors currently in use in operating reactors have been required to meet the 1974 version of IEEE-323. Connectors qualified to the 1974 version are being required for plants under construction, but apparently no such connectors are now commercially available. As a result, the staff outlined in its May 4 memorandum a two-phase program to: (1) test commercially available connectors qualified to IEEE-323 (1971), and (2) test connectors qualified to the 1974 version when they become available. The Commission endorses the staff's approach,

⁹7 NRC 426.

which will produce results in the near term directly applicable to currently operating plants, and at a later time, will generate information applicable to components in future plants.

The first phase of this test program is already underway and electrical connectors, in accordance with existing TVA specifications, have been successfully tested. These connectors were manufactured specifically for the test. The manufacturer and the utility which assembled the connectors under I&E supervision were aware that these specific connectors were to be tested. These tests, while useful, do not fulfill the April 13, 1978 requirement that connectors be tested which are "in use in nuclear power reactor safety systems." The Commission requires that connectors be tested which are not specifically manufactured for test purposes. This might be accomplished by testing spares at existing plants.

In this order we have not attempted to apply the lessons of Three Mile Island to environmental qualification. This issue is addressed in the NRC Action Plan under review by the Commission.

Fire Protection Issues

An item raised by UCS in its petition for reconsideration (Attachment D, 30) not discussed in our previous Memorandum and Order was that other tests conducted at the Sandia Laboratories showed "...that at least some of the so-called fire retardant coatings burn." The fire retardant coatings in use in nuclear plants have been shown in the Sandia tests to be effective only in reducing the fire propagation rate in cable assemblies, and there is no considerable variation among those coatings tested in the degree of protection provided. Nevertheless, the results of these tests do show that, for the tested configuration, exposure-initiated fires do not propagate between trays of coated cables.

Such coatings, by themselves, do not provide complete protection against fires. As we stated in our previous decision:

"The Commission endorses the staff's position that no one level of defense-in-depth can be made invulnerable. Strengthening one of the levels can compensate in some measure for reduced safety margins in the others."¹⁰

It is our conclusion that the staff has treated these results correctly in reviewing nuclear plant fire protection capabilities, by not considering these coatings alone to be satisfactory protection against fires.

¹⁰7 NRC 421.

On September 15, 1978, a fire protection test was performed for NRC at the Underwriters Laboratory (UL).¹¹ This test, as one of a series of cable system fire tests, was a generic test of vertical cable trays with fire protection features generally applicable to those used or proposed for use in nuclear plants. The specific combinations of protective features and configurations were not representative of any particular plants. The purpose of the test was to investigate the effectiveness of ceramic fiber blankets as fire barriers on vertical cable runs, and to test fire detection and extinguishing systems. The ignition source was a spill of flammable liquid which had access to each tray barrier at the floor.

The test was observed by NRC staff and consultants. Although fire detectors did alarm promptly, the sprinkler system, which was installed in a manner not representative of any plant system,¹² was not actuated. Two cables, contained in adjacent cable trays representing redundant safety divisions, were damaged. The apparent reasons for this damage were: (a) the sprinklers did not actuate, and (b) the fire was not excluded from the cable trays by the blanket barriers.

The Commission concurs with the staff's conclusion that although only minimal damage occurred,¹³ the test did not demonstrate that acceptable protection is afforded by the particular configuration tested. Of concern is the staff's conclusion that there are plants which have configurations which are even more prone to damage. However, the staff states it has taken measures for these plants. Licensees have been informed of the results of this test through a circular from the Office of Inspection and Enforcement (IE Circular 78-18, November 6, 1978). Appropriate licensing boards have also been notified.

These two tests must be viewed in conjunction with one other development since our April 13th decision. When we made our original decision, the staff had stated in their December 15, 1977 submission that there were certain locations in some operating plants in which an unmitigated fire could affect redundant systems. On July 8, 1978, after our decision, the staff on the basis of further reviews concluded that each plant contains a few fire areas where a postulated unmitigated fire may affect both divisions of redundant safety systems. The staff has required

¹¹Details of this test have previously been reported in staff memoranda of September 29, October 26, and November 2, all of which were provided to the petitioner and were placed in the Public Document Room.

¹²The sprinkler heads were arranged in groups of three. The test requirements called for actuation of all three heads prior to manual (not automatic) initiation of the flow water from another sprinkler. In plant installations of sprinkler systems, actuation of any one head would automatically allow for flow of water through that sprinkler head.

¹³Only two cables of a total of over 500 involved in the test were functionally destroyed.

additional fire protection in these areas, including alternate shutdown systems.

In light of these facts, the staff's fire protection testing program is particularly important. We are concerned that the staff has still not completed plants and initiated tests which replicate typical fire protection measures being proposed for operating plants. The most recent status of the fire protection research program was reported to the Commission in the staff's submission of August 24, 1979 and memo of September 26, 1979. The primary emphasis of the program is currently being placed on integrated confirmatory tests of selected portions of fire protection systems which replicate those proposed in four different reactor plants. The purpose of these tests will be to confirm the adequacy of current designs and NRC staff licensing criteria.

The Commission views this testing program as a priority item and requests that the configurations which are of greatest concern should be first tested. The Commission requests that a definite schedule be established as soon as possible which provides that testing commence without delay. Any slippages in the schedule must be approved by the Commission. Bimonthly reports should be made on the progress of this program.

The staff has completed Safety Analysis Reports concerning fire protection for all operating reactors. The modifications recommended by the staff are not being implemented smoothly. Of utmost concern is the fact that some licensees, four and one-half years after the Browns Ferry fire, are resisting the modifications found necessary by the staff.

Because of these facts, the Commission approved on April 23, 1980¹⁴ a proposed rule concerning fire protection. This proposed rule and its Appendix R have been developed to establish the minimum acceptable fire protection requirements necessary to resolve these contested areas of concern for nuclear power plants operating prior to January 1, 1979.¹⁵ Other fire protection criteria that have been used by the staff during its plant-specific fire protection program reviews are contained in Appendix A to BTP 9.5-1. The combination of the guidance contained in Appendix A to BTP 9.5-1 and the requirements set forth in this proposed rule define the essential elements for an acceptable fire protection program at nuclear power plants docketed for Construction Permit prior to July 1, 1976, for demonstration of compliance with General Design Criterion 3 of Appendix A to 10 CFR Part 50. Similar acceptable guidance is provided in BTP 9.5-1

¹⁴This rule is scheduled for publication in the Federal Register on May 29, 1980.

¹⁵Commissioners Kennedy and Hendrie agreed with the fire protection safety provisions of the proposed Appendix K to 10 CFR Part 50, but disagreed with the implementation schedule proposed by the Commission. A statement of Commissioners Kennedy and Hendrie's separate views in this regard is attached.

for nuclear power plants docketed for Construction Permit after July 1, 1976.

All modifications (except for alternate and dedicated shutdown capability) would be required to be implemented by November 1, 1980 unless, for good cause shown the Commission approves an extension. Since the issues involved are well-known and have been under discussion for several years, the Commission anticipates approving few, if any, extensions. No plant would be allowed to continue operating after November 1, 1980 or beyond an extended date approved by the Commission, unless all modifications (except for alternate or dedicated shutdown capability have been implemented. The Commission recognizes that, in a few instances, approval has previously been given to particular licensees to extend the implementation dates for some modifications beyond November 1, 1980. The Commission will review these extensions on a case-by-case basis to determine whether continued approval or some revision of the extension is appropriate.

For alternate or dedicated shutdown capability, the proposed rule specifies implementation dates which depend on which kind of capability is to be implemented and whether the plant is under review in the Systematic Evaluation Program (SEP). (Plants under review in the SEP include Palisades, Dresden 1 and 2, Oyster Creek, Millstone 1, Ginna, Haddam Neck, San Onofre 1, La Crosse, Big Rock Point, and Yankee Rowe.) For non-SEP plants, the proposed implementation dates are April 1, 1981 for alternate shutdown capability and December 1, 1981 for dedicated shutdown capability. Licensees who have committed to earlier implementation dates will be expected to meet those commitments. For SEP plants, the proposed implementation dates are December 1, 1981 for alternate shutdown capability and October 1, 1982 for dedicated shutdown capability. Licensees will be required to submit plans and schedules to meet these implementation deadlines by August 1, 1980 (non-SEP plants) and November 1, 1980 (SEP plants). The Commission may revise the implementation deadlines for SEP plants to earlier dates following completion by the NRC staff of its review of the status of fire protection at those plants. The staff review is expected to be completed in August 1980.

Other Issues

In its petition for reconsideration UCS states:

“UCS has completed a review of the underlying documents for some of the plants affected by the connector problem, and generally for the fire protection issue, entitled, ‘Chronology and Analysis of Staff Actions.’ We believe that it contains information which was not specifically brought to your attention prior to the issuance of the Memorandum and Order.”

In its June 21, 1978 memorandum to the staff, the Commission asked if there were substantive matters in the UCS "Chronology" not specifically brought to the Commission's attention by the staff prior to the issuance of the April 13, 1978 Memorandum and Order.

The staff in its response to the Commission on August 31, identified several minor documents not specifically forwarded to the Commission.¹⁶ The staff stated that none of these documents contained information material to resolution of the matters in the petition. We agree.

The petition for reconsideration contains the following argument regarding our mention of WASH-1400 in the April 13 decision.¹⁷

"The Commission has, insofar as we can tell, relied on the probability analysis of WASH-1400 to conclude that another Browns Ferry-type fire is so improbable that the force of the regulations can be 'waived' or temporarily de-emphasized or phased-in. That is the only apparent significance for the long quotation from the Brown Ferry Review Group given at page 37 of the Memorandum and Order. This Commission announced on August 27, 1974 (39 FR 30964) that WASH-1400 would not be used as a basis for licensing decisions pending the most careful study of its potential use for decisionmaking. The Commission has held to the position that WASH-1400 needs to go through thorough, systematic review before it can be useful in the regulatory context. Yet, one can only read the word of your decision here as establishing 'through the back door' the startling new precedent that apparent violations of the regulations can be justified on the basis of RSS probability analysis." (Petition at 13)

We concluded in the April 13 decision that the regulations, as expressed in the General Design Criteria and the single-failure criterion of Appendix A to 10 CFR Part 50, had been met with no dependence on risk assessment analysis of WASH-1400. 7 NRC 427, 428. WASH-1400 was referred to in the previous opinion only as background to the discussion of the Browns Ferry fire and subsequent events. While the Browns Ferry Special Review Group did refer to the Wash-1400 calculation based on Browns Ferry,¹⁸ it also cited steps taken by the NRC staff and the licensee after the fire to prevent such events in the future. In spite of the WASH-1400 analysis conclusions that fires were not a dominant contribution to overall risk, the

¹⁶In its response to the Commission request, the staff noted items that were not specifically sent to the Commission:

1. For Haddam Neck: a meeting report dated January 19, 1978. This meeting was, however, summarized in a report to the Commission dated January 26, 1978.
2. For Browns Ferry: a draft supplemental test report to NRC from Sandia, dated August 5, 1977.
3. For Pilgrim 1: documents relating to the construction permit and operating license reviews. These items are part of the public docket for that plant.

¹⁷7 NRC 422-424.

¹⁸Quoted at 7 NRC 423.

Review Group recommended further actions, all of which were incorporated into the Commission's Fire Protection Action Plan.¹⁹

Throughout this proceeding petitioner has repeatedly cited to and relied upon the decision of the Appeal Board in ALAB-138, *In the Matter of Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), 6 AEC 520 (1973). In particular petitioners calls upon the following language from that opinion:

"As a general rule, the Commission's regulations preclude challenge to applicable regulations in an individual licensing proceeding. 10 CFR 2.758. This rule has frequently been applied in such proceedings to preclude challenges by intervenors to Commission regulations. Generally, then, an intervenor cannot validly argue on safety grounds that a reactor which meets applicable standards should not be licensed. By the same token, neither the applicant nor the staff should be permitted to challenge applicable regulations, either directly or indirectly. Thus, those parties should not generally be permitted to seek or justify the licensing of a reactor which does not comply with applicable standards. Nor can they avoid compliance by arguing that, although an applicable regulation is not met, the public health and safety will still be protected. For, once a regulation is adopted, the standards it embodies represent the Commission's definition of what is required to protect the public health and safety."

"In short, in order for a facility to be licensed to operate, the applicant must establish that the facility complies with all applicable regulations. If the facility does not comply, or if there has been no showing that it does not comply, it may not be licensed."

. . . .

"It bears repetition that, under the principles we have set out above, it cannot be argued that, even though the reactor does not comply with the criteria, it should receive an unrestricted full-power, full-term license on the ground that there is reasonable assurance that it can operate without adversely affecting the public health and safety. Such an argument might be factually supportable, but would constitute an indirect attack on the applicable Commission regulations. Again, the point to be made is a simple one: reactors may not be licensed unless they comply with all applicable standards."²⁰

We believe that the actions taken today will ensure that the Commission's regulations concerning fire protection and environmental qualification are met. If the staff finds to the contrary, it must, as we stated earlier, make a judgment about the continued operation of the plant.

Our earlier decision made clear that the denial of emergency relief for fire protection was based primarily on the fact that the Sandia tests relied upon by petitioners provided "no new information...beyond confirmation

¹⁹7 NRC 423-424.

²⁰6 AEC 528-529.

of the current staff assumption for review of fire protection measures, i.e., that exposure fires may propagate beyond the minimum separation distances of Regulatory Guide 1.75...."²¹ Our specific response to petitioner's "shutdown" request states in regard to fire protection:

"...the Commission denies the requested relief... because (1) in view of the additional improvement of fire safety made in operating power plants since the Browns Ferry fire, coupled with the current Fire Protection Action Plan, those plants can continue to operate without undue risk to the public health and safety."²²

Our April 13 decision in no way permits reliance on probabilistic calculations to enter regulatory policy "through the back door."²³ Denial of emergency relief in this case is based upon our review of the fire protection program and the Sandia tests, and it is this review, and not probability analysis which assures us that public health and safety is not at undue risk.

Having considered all the facts and arguments before us in this matter, it remains our conclusion that the April 13, 1978 Memorandum and Order and staff actions resulting from it, together with the actions taken today, satisfactorily deal with all substantive issues raised by UCS. Subject to the clarification and revisions set out above, we affirm our prior decision.

It is so ORDERED.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 23rd day of May 1980.

²¹7 NRC 424.

²²7 NRC 428.

²³The Commission policy on the use of probabilistic risk assessment continues to be as articulated in our January 1979 policy statement. See memorandum and attachments, Chilk to Gossick, January 18, 1979: With respect to the component parts of the 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. Taking due account of the reservations expressed in the Review Group Report and in its presentation to the Commission, the Commission supports the extended use of probabilistic risk assessment in regulatory decisionmaking.

**SEPARATE COMMENTS OF COMMISSIONERS HENDRIE AND
KENNEDY ON THE PROPOSED NEW REGULATION FOR FIRE
PROTECTION PROGRAM FOR NUCLEAR POWER PLANTS
OPERATING PRIOR TO JANUARY 1, 1979**

We agree with the fire safety provisions of the proposed Appendix R to 10 CFR Part 50. However, we do not agree with the implementation schedule that the Commission proposes. In its original presentation of this rule to the Commission, the staff proposed a schedule which we believe is more reasonable.

In the absence of Three Mile Island and the actions we have required, the short schedule of the Commission proposes might be appropriate in view of the extended period during which a number of these fire safety provisions have been under discussion. In the present situation, the Commission has properly imposed a large number of Three Mile Island-related safety requirements on operating nuclear power plants. We are concerned that the short implementation schedule proposed here for fire safety provisions, together with the large workload associated with the Three Mile Island requirements, may make it impossible for licensees to complete all of these measures in a carefully considered and thorough fashion. Since all operating plants have implemented a number of improvements in their fire safety postures, the remaining improvements to be required under the proposed rule do not seem to us so urgent as to require either shutting down of plants because of inability to complete these requirements on the short schedule proposed or to make those improvements in a hasty fashion.

We note also that the proposed implementation schedule would require licensees to submit their plans for complying with this rule by August 1, 1980. Considering that the staff has said it will not be able to complete its plant-by-plant reviews to determine specific requirements until July 1980, some licensees will simply not have any reasonable time to make an adequate plan.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 50-320-OL

**METROPOLITAN EDISON
COMPANY**

**(Three Mile Island Nuclear
Station, Unit No. 2)**

May 28, 1980

The Commission denies a motion to quash six subpoenas issued by the Director of the Office of Inspection and Enforcement as part of its ongoing investigation of the Three Mile Island accident.

NRC: ENFORCEMENT OF SUBPOENAS

An ongoing Justice Department criminal investigation of a matter referred to it by the Commission does not operate to bar the enforceability of subpoenas issued by the Commission in connection with a civil investigation of a separate matter conducted by the Commission pursuant to its general health and safety and civil enforcement responsibilities.

NRC: ENFORCEMENT OF SUBPOENAS

An agency subpoena issued in the course of an agency investigation is entitled to enforcement so long as it is issued in good faith pursuant to a legitimate agency investigation and is not used to broaden the Justice Department's right of criminal litigation discovery or to infringe on the role of the grand jury as the principle tool of criminal accusation.

MEMORANDUM AND ORDER

On May 2, 1980, the NRC's Director of the Office of Inspection and Enforcement issued subpoenas to six Metropolitan Edison employees¹ calling upon them to appear and give testimony on May 20 and May 21, 1980, concerning their knowledge of three particular events which occurred on March 28, 1979, the first day of the Three Mile Island, Unit 2, accident. The subjects at issue were: (a) the calculated dose rate of 10 rem/hr in Goldsboro, Pennsylvania; (b) elevated in-core thermocouple readings; and (c) the pressure spike in the containment vessel.

As explained in more detail below, the subpoenas were issued for the purpose of determining whether particular information bearing upon the seriousness of the then ongoing accident at TMI-2 should have been reported to the Commission more promptly, and what enforcement action is appropriate under the circumstances.

We now have before us a motion to quash the subpoenas² on the ground that the Commission's referral of some of TMI matters to the Department of Justice for criminal proceedings precludes the Commission from pursuing its civil investigation during the pendency of the Grand Jury investigation currently underway in the Middle District of Pennsylvania. It is also contended that the subpoenas are unduly burdensome in light of the many investigations of the TMI accident which have already been conducted. For the reasons discussed below, we deny the motion to quash. The matters referred by the Commission to the Department of Justice for criminal proceedings are separate and distinct from the subjects covered by the subpoenas issued by the Director of the Office of Inspection and Enforcement, and that referral does not bar the Commission from pursuing its general health and safety and civil enforcement responsibilities through issuance of the subpoenas here. Moreover, while we are sensitive to the fact that the six persons under subpoena have previously been questioned, some on several occasions, regarding the TMI-2 accident, they are in fact knowledgeable about the three areas covered by the subpoenas and those areas need to be clarified before the Commission settles upon possible civil enforcement actions.

¹The persons subpoenaed were Messrs. McGovern, Mehler, Wright, Chwastyk, Kunder, and Zewe.

²By agreement, the return date of the subpoenas has been changed to May 29 and May 30. In agreeing to the new return dates counsel for the movants specifically kept the motion to quash as a live issue before us and has not waived any right to contest the validity of the subpoenas.

1. The Director's Subpoenas

The Director's subpoenas were issued pursuant to Section 161(c) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2201(c)), to assist the Commission in determining whether three pieces of information bearing heavily upon the expected seriousness of then ongoing TMI-2 accident ought to have been more promptly reported to the Commission, and, if so, what civil enforcement action should be taken. The investigation into these incidents is a continuation of the NRC's ongoing investigation into the events surrounding the accident at Three Mile Island which resulted in a civil penalty assessment against Metropolitan Edison on October 25, 1979. In his Notice of Violation detailing the bases of the civil penalties, the Director of I&E explained that additional enforcement action, including further civil penalties and orders to suspend, modify, or revoke the operating license, were under review "with regard to the reportability of several items of information following the onset of the accident, including specifically the calculated dose rate of 10-40 R/hr in Goldsboro, the elevated in-core thermocouple indications and the pressure spike in the containment vessel." Letter, Victor Stello to Robert Arnold, dated October 25, 1979.

The Director's decision to defer pressing further enforcement action on those items pending further review and investigation was taken in response to the Commission's direction following an October 25 meeting at which the Director briefed the Commission on the enforcement actions he proposed to take against Metropolitan Edison Company. The Commission was of the view that the facts surrounding those three matters had not been established with sufficient clarity, and should not be pursued by way of a civil penalty or license revocation action at that time.³ The Commission instructed the Director to await completion of the Report of the President's Commission on the Accident at Three Mile Island ("Kemeny Report"), and of the Report of the Commission's Special Inquiry Group ("Rogovin Report") to see what light those reports shed, before proceeding further.

After completion of the Rogovin Report earlier this year, and the completion of a Supplemental Report on March 4, 1980, looking at the transfer of information on the day of the accident in response to a series of questions raised by Congressman Udall, the Commission directed its Office of Investigation and Enforcement to complete its investigation which had been held in abeyance. See Memorandum, Chairman Ahearne to William J.

³For example, 10 CFR 20.403 imposes immediate notification requirements on Commission licensees for certain specified events. Under Section 234 of the Atomic Energy Act, 42 U.S.C. 2282, the Commission is empowered to assess civil penalties for violation of such Commission regulations. Additionally, Section 186 of the Atomic Energy Act, 42 U.S.C. 2236, provides the Commission with license revocation powers for failure to observe Commission regulations.

Dircks, dtd. March 21, 1980. The Commission explained its plans to Congressman Udall as follows:

The Commission has devoted substantial time to the question of Met Ed's conduct during the TMI-2 accident one year ago. Last fall the NRC assessed a civil penalty against Met Ed. However, one area was left open, that related to information transfer. Last fall the Commission concluded that area should be examined after the Presidential Commission and the NRC Special Inquiry Group had completed their work. Shortly before the Special Inquiry Group submitted its report, you sent us the first of two sets of questions relating to information transfer. As a result, the Commission continued to defer the I&E review and asked the Special Inquiry Group to examine its records further for information pertaining to your questions and to conduct such further inquiry as it believed warranted. Finally, Dr. Myers of your staff has provided us with a review of this issue.

The Special Inquiry Group has reported on its reexamination in detail, indicating that it finds no direct evidence suggesting intentional withholding of information but that it was not appropriate for the Special Inquiry Group to reach conclusions as to enforcement questions....We have concluded that the appropriate action is to now direct I&E to complete the investigation. This will focus upon the question of whether a further civil penalty of Met Ed is justified in light of the facts pertaining to information transfer.

The letter also noted that should the investigation suggest the possibility of criminal prosecution, the case would be referred to the Department of Justice.

In carrying out the Commission's directive, the Director of I&E contacted a number of Met Ed employees concerning their knowledge of the pertinent events on the day of the accident. Six of the individuals contacted, Hugh McGovern, Lynn Wright, Brian Mehler, Joseph Chwaszyk, George Kunder, and William Zewe refused to be interviewed absent a subpoena. The Director's subpoenas followed.

Only two of the six individuals subpoenaed by the Director are among the fourteen persons who have been ordered to appear before the Grand Jury.⁴ Based on past testimony and interviews, the Commission believes that each of these six individuals has direct knowledge relating to the transfer of information on March 28, 1979 and can contribute to establishing whether further enforcement action is appropriate.

⁴These two, Hugh McGovern and Lynn Wright, are both control room operators with no supervisory responsibility. The other four, Messrs. Mehler, Chwaszyk, Zewe and Kunder, are shift supervisors at TMI. On May 27 movants filed a Supplement to Motion to Quash Subpoenas advising us that John G. Herbein, Vice-President, Metropolitan Edison Company, has also been subpoenaed by the Grand Jury. The list of documents called for by the Herbein subpoena relate to the Hartman allegations described *infra* and are not a basis for granting the motion to quash.

2. Criminal Referral of Hartman Allegations

The Grand Jury investigation now pending in the Middle District of Pennsylvania was triggered by the Commission's referral to the Department of Justice of a wholly separate and distinct matter — its investigation of allegations by Harold Hartman, a control room operator at TMI-2, that over a period of several months *prior to the TMI-2 accident*, employees at TMI-2 may have falsified the results of certain tests.

Mr. Hartman's allegations first came to the Commission's attention on May 22, 1979 during an interview with members of the NRC Office of Inspection and Enforcement team investigating the accident at TMI-2. At that time, in subsequent interviews with NRC, and in a deposition by the Special Inquiry Group taken October 29, 1979, Mr. Hartman alleged that (1) results of reactor coolant surveillance leak rate tests were falsified, (2) emergency feedwater pump test criteria were altered, and (3) the estimated control rod positions for attainment of criticality were re-calculated in order to meet procedural requirements. The allegations, if true, could lead to criminal prosecution.

On or about March 22, 1980, NRC inspectors talked to Mr. Hartman at his home, where he repeated the same allegations. On March 26, NRC inspectors Martin, Christopher, and Sinclair taped an interview with Mr. Hartman and took his sworn statement. The NRC then took steps to verify Mr. Hartman's allegations by examining existing documentation and other records.

During the latter part of March the NRC's Office of Inspector and Auditor exchanged a few preliminary phone calls with the Department of Justice, informing them of the possibility of a referral for criminal prosecution. Finally, on April 2, 1980, representatives of the NRC met with members of the Department of Justice to brief them on all of the information in its possession, in accordance with the Atomic Energy Act. 42 U.S.C 2271. At that time, the NRC brought its own investigation to a halt.

We understand from movants' counsel who is also counsel for those under subpoena by the Grand Jury has subpoenaed thirteen present employees and one former employee of TMI-2. Two of the six persons subpoenaed by our Director of I&E, Messrs. Wright and McGovern, are among those subpoenaed by the Grand Jury. We further understand from movants' counsel that Mr. Wright has already testified and has been excused by the Grand Jury. A date for Mr. McGovern's Grand Jury appearance has not yet been set.

3. Legal Analysis

As the facts make clear, the Commission's ongoing investigation regarding the reporting of events that occurred on the first day of the TMI-2 accident is separate and distinct from the Hartman allegations referred to the Department of Justice for possible criminal prosecution. Mr. Hartman's allegations go only to events *prior to* the accident on March 28, 1979. He was not even present at the TMI-2 site on the day of the accident.

Given these facts there is no basis for requiring the Commission to await completion of the Grand Jury investigation before proceeding further on the Commission's civil investigation. The leading case on concurrent criminal and civil investigation is *United States v. LaSalle National Bank*, 437 U.S. 298 (1978). There the Supreme Court ruled that a summons issued by the Internal Revenue Service was entitled to be enforced so long as it was issued in good faith pursuant to a legitimate Internal Revenue Service investigation, and prior to a recommendation by the Service to the Department of Justice for a criminal prosecution "which reasonably would relate to the subject matter of the summons." *Id.* at 318. See also *Garden State National Bank v. United States*, 607 F.2d 61 (3d Cir. 1979). This test for the enforceability of agency subpoenas reflected the policy interests that the civil investigation should be allowed to proceed so long as it was not used to broaden the Justice Department's right of criminal litigation discovery, or to infringe on the role of the grand jury as the principal tool of criminal accusation. It is clear from what we have said earlier that the Director's subpoenas plainly meet the standards established by the Supreme Court for the enforceability of agency subpoenas.⁵ His investigation is being carried out in good faith pursuant to the Commission's authority under Section 161 of the Atomic Energy Act, and has the legitimate purposes of establishing whether further civil enforcement action should be taken in connection with the TMI-2 accident. That ongoing investigation into the first day of the TMI-2 accident is not reasonably related to the Hartman allegations which the Commission has referred to the Department of Justice for possible criminal prosecution, and which triggered the Grand Jury investigation now in progress. By allowing its Director of Inspection and Enforcement to proceed with his investigation, the Commission is neither infringing the accusatory role of the Grand Jury,

⁵If anything, the Commission's power to conduct concurrent investigations is broader than that of the IRS since the Atomic Energy Act is "a regulatory scheme which is virtually unique in the degree to which broad responsibility is reposed in the administering agency, free of close prescription in its charter as to how it shall proceed in achieving the statutory objectives." *Siegel v. Atomic Energy Commission*, 400 F.2d 778 (D.C. Cir. 1968). Moreover, unlike the IRS' subpoena power which is directed at determining the tax liability of a particular person and thus has "interrelated criminal and civil elements", *United States v. LaSalle*, *supra* 437 U.S. at 310, the Commission's subpoena power is much more general in scope. 42 U.S.C. 2201

nor acting as a funnel of information to expand the Justice Department's criminal discovery rights.

Indeed, if the Commission's congressionally mandated authority to investigate matters touching the public health and safety is to be effectively blocked every time a Grand Jury is convened on a matter involving the same nuclear power plant, the Commission will be unduly hampered in carrying out its mandate to protect the public health and safety. The Commission depends upon its licensees reporting accurately and promptly to the NRC. If we do not have an investigatory and enforcement mechanism to ensure that reporting, the Commission will be unable to assure compliance with its rules and regulations.

We also reject the second ground asserted for quashing the subpoenas, the claim that they are overly burdensome given the many investigations of the TMI-2 accident that have already taken place. While we are sensitive to the claim that a person should not be subjected to rounds of questioning on the same matter, we have satisfied ourselves that there are important areas of questions, limited in time and subject matter to the specific areas covered by the subpoenas, which have not yet been answered and are legitimate concerns of the Commission in its enforcement responsibilities. Finally, we note that only one of the six persons the Commission has subpoenaed is currently under subpoena by the Grand Jury, and his appearance date before that body has not been set. We do not believe the Director's subpoenas are unduly burdensome.

The motion to quash the Director's subpoenas is denied.⁶

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 28th day of May 1980.

⁶Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Hendrie and Bradford were not present at the meeting at which this Order was approved. Had they been present at the meeting they would have voted with the majority. Accordingly, the formal vote of the Commission was 3-0 in favor of the Order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. STN 50-485-CP

**ROCHESTER GAS AND
ELECTRIC CORPORATION,**
et al.

**(Sterling Power Project,
Nuclear Unit No. 1)**

May 29, 1980

The Commission affirms the Appeal Board's application in ALAB-502 of the Commission's "obviously superior" standard in connection with alternate site review under NEPA.

NEPA: CONSIDERATION OF ALTERNATIVES

Although NEPA requires the NRC to take a "hard look" at alternative sites, the Act is largely procedural and does not determine the result of the site comparison. *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519 (1978).

NEPA: CONSIDERATION OF ALTERNATIVES

NEPA leaves the ultimate decision on the siting of a nuclear power plant to NRC's discretion; the Act does not require that the plant be built on the single best site for environmental purposes.

NEPA: CONSIDERATION OF ALTERNATIVES

The "obviously superior" standard adopted by the NRC requiring rejection of an applicant's choice of site only if an alternative site is "clearly and substantially superior" does not violate NEPA.

ORDER

For the reasons set forth in the opinions of Commissioners Kennedy and Hendrie and of Commissioner Gilinsky, the Commission affirms the Appeal Board's decision in ALAB-502. Chairman Ahearne and Commissioner Bradford dissent from this decision.¹

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 29th day of May 1980.

Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841 provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Hendrie was not present at the meeting at which this Order was approved. Had he been present at the meeting he would have voted with majority. To enable the Commission to proceed with this case without delay, Chairman Ahearne 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 Order.

SEPARATE VIEWS OF COMMISSIONERS KENNEDY AND HENDRIE

In ALAB-502, 8 NRC 383 (1978), the Atomic Safety and Licensing Appeal Board partially affirmed the Atomic Safety and Licensing Board's initial decision authorizing issuance of a construction permit for the Sterling Power Project, Nuclear Unit No. 1,¹ and made a significant interpretation of the Commission's "obviously superior" standard² (Standard) for choosing among alternative sites. The Appeal Board reformulated the Standard to require a Licensing Board to reject an applicant's choice of site only if an alternative site was "clearly and substantially" superior.³ Intervenor Ecology Action of Oswego, New York (Ecology Action) challenged this interpretation, as well as several other aspects of ALAB-502. The NRC staff and applicant, Rochester Gas and Electric, both opposed review. On March 8, 1979, the Commission partially granted Ecology Action's petition for review to consider "whether in the factual circumstances presented by this proceeding, the Appeal Board correctly interpreted the Commission's 'obviously superior' standard for rejecting the Applicant's proposed site because of the existence of a preferable alternative." The Commission received initial briefs from all parties, and reply briefs from the applicant and intervenor. The Commission has determined that these briefs fully present the issues and that oral argument would not aid our deliberations.

The controversy over site selection in this proceeding centers on two sites: Rochester Gas and Electric's proposed virgin site at Sterling and its site at Ginna which already contains a 490 MWe nuclear power plant. After extensively comparing the two sites, the Licensing Board found that "a small advantage must be accorded the Ginna site on environmental considerations."⁴ In addition, the Board expressed concern over the possibility of unnecessarily committing a partially forested, partially cultivated lake-front site.⁵ However, after factoring in delay costs which

¹The Appeal Board retained jurisdiction over the issues of need for power and the environmental impact of radon releases arising from the mining and milling of uranium to fuel the plant. Construction of this facility has not been initiated. On January 23, 1980, the New York State Board on Electric Generation Siting and Environment rescinded the applicant's certificate of environmental compatibility and public need. However, by letter of January 30, 1980, the applicant indicated that it would make no final decision regarding this proceeding until the State Board issues a final opinion and the applicant has had a chance to review that opinion.

²*Public Service Company of New Hampshire*, (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 526-30 (1977), *aff'd New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978).

³ALAB-502, 8 NRC 383, 397-98 (1978).

⁴6 NRC 350, 416 (1977)

⁵*Id.* at 418.

would result from transferring the project to Ginna, the Licensing Board sustained the applicant's choice of the Sterling site.

The Appeal Board found that delay costs should have been considered only if the Licensing Board had first found the alternative site was obviously superior to the applicant's choice. Because the Licensing Board did not explicitly-determine whether Ginna was obviously superior to Sterling, the Appeal Board performed its own comparison of the environmental impacts of the sites. The Appeal Board affirmed the Licensing Board's approval of the Sterling site because, after its own application of the Standard, which it interpreted to mean "clearly and substantially superior," it found the Ginna site was not obviously superior.⁶ The Appeal Board derived this interpretation from the rationale developed in the *Seabrook* decision which discussed the effects of the inherent imprecision in cost/benefit analysis on comparing alternative sites.

Ecology Action contends that the Appeal Board's interpretation of the Standard is contrary to the National Environmental Policy Act (NEPA) because the interpretation prevents the required "hard look" at alternative sites, gives undue advantage to the Applicant's proposed site by requiring an alternative to be substantially better, and permits the choice of a site which is not environmentally the best. Ecology Action also contends that the Appeal Board's interpretation of the Standard is more rigorous than is necessary to compensate for the uncertainties of cost/benefit analysis. In its view, a Licensing Board could have the requisite confidence for rejecting a proposed site if an alternative is "clearly" better without also being "substantially" better. In support of its proposal to interpret the Standard to mean "clearly better," Ecology Action notes that the environmental comparison of alternative sites is less inexact in this proceeding because the alternative site at Ginna has been extensively studied so that any disadvantages at Ginna are now known. Finally, Ecology Action contends that because the Appeal Board "applied its own dogmatic definition" of the Standard it erroneously contradicted the Licensing Board's implicit finding that the alternative site at Ginna was obviously superior to the site at Sterling.

Rochester Gas and Electric contends that the Commission's use of the "obviously superior" test to evaluate alternative sites under NEPA has been affirmed by the United States Court of Appeals for the First Circuit,⁷ that the Appeal Board scrupulously applied the Standard, that the facts support

⁶8 NRC 397-398.

⁷*New England Coalition on Nuclear Pollution v. U.S. Nuclear Regulatory Commission*, 582 F.2d 87, 95-96 (1st Cir. 1978).

the Appeal Board's conclusion that Ginna is not obviously superior, and that this conclusion is consistent with the Licensing Board's findings on this issue. Accordingly, in applicant's view, the Appeal Board's interpretation of the Standard did not affect the correctness of its finding that Ginna is not obviously superior. Applicant does not however explicitly support the interpretation given to the Standard by the Appeal Board.

Staff also contends that the facts support the Appeal Board's conclusion that Ginna is not obviously superior, and that this conclusion is consistent with the Licensing Board's findings on this issue. Moreover, Staff contends that the Appeal Board's interpretation is adequately supported by the Commission's concerns about the imprecision of cost/benefit analysis and the wide margin of uncertainty inherent in site evaluation. In Staff's view, these factors prevent the Commission from having the requisite substantial confidence in the apparent superiority of an alternative site unless that site is substantially better. Consequently, staff believes that the Appeal Board's formulation is a reasonable interpretation of the Standard even where there is no reliance on a possible disparity of information between the alternative sites. In the alternative, staff suggests that even if the Commission were to disapprove the Appeal Board's interpretation of the Standard, the conclusion that Ginna is not obviously superior should be affirmed on the facts.

In its reply brief, Ecology Action contends that Rochester Gas and Electric misrepresented the Licensing Board's finding on the alternative site issue by focusing on its statement that the environmental advantage at Ginna is small while ignoring its concern regarding the use of a virgin site. In Ecology Action's view, the Licensing Board found that the disadvantage of using the Sterling site was so great that it would have rejected the site had it not considered delay costs. Ecology Action also contends that where the alternative site is clearly better, any formulation of the Standard based on the degree of superiority of the alternative site violates NEPA by putting an unfair burden on the alternative.

Rochester Gas and Electric's reply brief suggests that the Commission dismiss the petition for review as improvidently granted because this proceeding does not present difficult questions regarding application of the Standard. In addition, applicant contends that petitioner Ecology Action has not pursued the issue for review, but instead, has challenged the Standard as contrary to NEPA, and the factual finding that Ginna is not obviously superior to Sterling.

At the outset, we must reject Ecology Action's contentions that the Appeal Board's interpretation of the Standard violates NEPA by preventing the required "hard look" at alternative sites, and by permitting the choice of a site which is not environmentally the best.

The contention regarding the absence of the required “hard look” at alternatives sites is contrary to both our clear instructions in *Seabrook* and to the facts in this proceeding. In *Seabrook*, the Commission stated that the Standard in no way affected the Staff’s obligation to perform the requisite NEPA analysis of alternative sites. Staff was instructed that its preliminary analysis of alternative sites must be “thorough and even-handed.”⁸ Thus, no interpretation of the Standard should effect the Staff’s obligation to take a “hard look” at alternatives. Moreover, there is no question that the “hard look” was in fact taken in this proceeding, especially for the alternative site at Ginna. The applicant provided information on alternative sites in its environmental report and at the hearing, and staff analyzed this information as well as site data of its own.⁹ Finally, we note that in its filings before us, Ecology Action has argued that the Ginna site was extensively investigated as an alternative to the site at Sterling.¹⁰ Consequently, we see no merit in this contention.

Ecology Action’s contention that NEPA requires the NRC to choose the environmentally best site is also without merit. It is now well-established that NEPA is primarily a procedural statute which requires the NRC to take a “hard look” at alternatives sites, but which does not determine the result of the site comparison. *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519 (1978). Thus, NEPA does not require that a plant be built on the single best site for environmental purposes. The ultimate decision on siting is left to the NRC’s discretion. Recently, the United States Court of Appeals for the First Circuit held that on its face, the Standard is a reasonable exercise of NRC discretion because inherent limits on the NEPA process support the NRC’s insistence on a high degree of assurance that the extreme action of denying an application is appropriate.¹¹ This recognition of the NRC’s need for assurance regarding the apparent superiority of alternative sites also contradicts Ecology Action’s contention that NEPA is violated by any formulation of the Standard which incorporates an element of degree of superiority.

Finally, we do not agree with Ecology Action’s contention that the Appeal Board’s interpretation of the Standard violates NEPA by giving undue advantage to the Applicant’s proposed site. The Appeal Board’s interpretation of the Standard provides general criteria for determining when an alternative site is obviously superior to a proposed site. We believe that these general criteria will be helpful to licensing boards and to all

⁸5 NRC at 530, n. 30.

⁹8 NRC at 390-391.

¹⁰Pet. Br. at 4.

¹¹*NECNP v. NRC*, 582 F.2d at 95.

participants in the licensing process. Moreover, we find that these criteria are fully consistent with and properly interpret the Standard established in *Seabrook* and affirmed by the Court.

In *Seabrook*, the Commission stated that the purpose of the Standard is to assure that a Licensing Board has the requisite degree of confidence to take the drastic action rejecting an applicant's proposed site in spite of the inherent uncertainties in cost/benefit analysis and the probability that alternative sites have not been explored as fully as the proposed site. In addition, the Commission stated that because the data to be compared for alternative sites necessarily present a wide margin of uncertainty, an alternative site must appear to be substantially "better."¹² Ecology Action suggests that where, as here, an alternative is "clearly better." We believe that this suggestion is incompatible with the usual realities of site comparison.

For a Board to have confidence on the basis of a determination that one site is clearly better than another, the Board must be able to make a fairly precise estimate of environmental impacts associated with each site. Experience and the record in this proceeding show that only a few of the environmental impacts are readily quantifiable, and that the majority of the environmental impacts can only be estimated qualitatively. Because the Assessment of qualitative impacts introduces an inherent wide margin of uncertainty in cost/benefit analysis, a standard formulated in terms of "clearly better" can not be expected to provide a Board with substantial confidence that an alternative site is obviously superior.

Our rejection of Ecology Action's proposed interpretation does not mean we consider unimportant the fact that an alternative site here has been more extensively studied than the usual virgin alternative. A Board's confidence in its site comparison depends on the factual circumstances peculiar to each proceeding. Besides the specific characteristics of the sites involved, these circumstances include the comparability and completeness of the environmental data for all sites considered, as well as the margins of uncertainty in that data. In *Seabrook*, the Commission stated that the usual disparate level of information between the proposed and alternative sites strengthens the conclusion that one site must appear to be substantially better to give a Board confidence that the site is obviously superior.¹³ On the other hand, in situations for which the environmental data for an alternative site are more complete than for the usual virgin site, a Board may properly have the confidence to find that an alternative site is obviously superior on the basis of a margin of superiority which would not

¹²5 NRC 503, at 528.

¹³5 NRC at 529.

have supported that finding in the typical situation. But the fact that an alternative site is better known than the usual virgin alternative does not reduce the inherent uncertainties in the underlying cost/benefit data, especially for qualitative impacts. Thus, even if an alternative site has been investigated to the same degree as the applicant's proposed site, a Board could not find an alternative site to be obviously superior unless that site is better by a margin substantial enough to compensate for inherent uncertainties.

The record in this proceeding does not indicate the exact degree of comparability of the site investigations for Ginna and Sterling. However, the record clearly demonstrates that even if the two sites had been studied to an identical degree, the Ginna site is not obviously superior to the site at Sterling. The Licensing Board found that only a "small advantage" must be accorded the Ginna site on environmental consideration.¹⁴ The Appeal Board, on the basis of its independent comparison of the terrestrial impacts at the two sites, found that Ginna is not obviously superior. The Appeal Board found, as had the Licensing Board, that the differences in aesthetic impacts would be slight, that the trees which would be removed at Sterling are similar to many others in the area, and that the applicant's mitigative measures would adequately protect the swamp at Sterling. Moreover, because the applicant already owns the Sterling site and can exclude the public from it at any time, the Appeal Board found that the public use factor did not weight heavily against the Sterling site. Finally, the Appeal Board noted that on the basis of the record before it, the task of choosing the environmentally best site would be most difficult.¹⁵ The consistent factual findings of the Boards below clearly show that the small differences in environmental impact at the two sites are not substantial and do not overcome the wide margin of uncertainty inherent in many of the factors considered in striking the cost/benefit balance in this proceeding. Thus, on the basis of the record before us, we find that the Appeal Board's application of the Standard is consistent with *Seabrook* and does not give undue advantage to the Applicant's proposed site. Accordingly, we would affirm the Appeal Board's decision.

¹⁴While the Licensing Board expressed concern over the possible unnecessary commitment of the virgin site at Sterling, it found that this factor could not be quantified. This expression of concern could hardly be taken as clenching the obvious superiority of the Ginna site.

¹⁵8 NRC at 395-398.

SEPARATE VIEWS OF COMMISSIONER GILINSKY

I agree with the Appeal Board's interpretation of the "obviously superior" standard. In the typical case, where the information concerning the alternate site is limited, forcing the applicant to change sites requires one to have substantial confidence that the alternate site is in fact superior. Such confidence can, as a practical matter, only exist if the alternate site is substantially better than the proposed site. Even in the atypical case, such as this one, where relatively more is known about the alternative site than would be normal, it is desirable to require a showing that some significant difference exists between the two sites. In this case, both the Licensing and the Appeal Board have concluded that, although the alternate site is somewhat preferable on environmental grounds, the difference does not justify requiring the applicant to change sites. I would affirm.

DISSENTING VIEWS OF CHAIRMAN AHEARNE

I believe the Commission position adopting the Appeal Board's interpretation of the "obviously superior" standard as "clearly and substantially" superior goes beyond a natural reading of the Standard. It is difficult to define precisely what is meant by these general terms. However, if the Appeal Board meant to say a Board *must* be *confident* that a second site is *considerably* better than the proposed site, this overstates the requirement.

As the Commission stated in *Seabrook*, "to reject an application—the only means available for indicating the preferability of an alternate site—at this late stage in the licensing process requires substantial confidence that one's judgment is correct—a confidence that can only arise where an alternate site is obviously superior."¹ It is necessary that the Board be confident the alternate site is superior. As a practical matter this may require substantial superiority because of the uncertainties inherent in the cost/benefit balancing. However, this does not require confidence in the size of the margin. In other words, a Board must be confident that a site is better (which may mean the site is in reality substantially better), but the Standard on its face would not require a Board to be confident that a site is better by a large margin.

¹5 NRC at 529-30.

Consequently, I would have rejected the Appeal Board's interpretation and—in light of the closeness of the original decision, the time that has passed, and the possibility that relevant circumstances may have changed²—remanded the alternative sites issue to the Licensing Board for further consideration.

Commissioner Bradford concurs in the Chairman's dissenting views.

²In particular, the Board stated "If, however, a delay of two or more years were to occur in the beginning of construction of Sterling, then a reevaluation of site selection must be given serious consideration" 6 NRC at 419.

The order concerning Wisconsin Electric Power Company (Point Beach, Unit 1), Docket No. 50-266, May 12, 1980, was not assigned a CLI number until November 1980. Therefore, this order can be found at CLI-80-38, 12 NRC 547 (1980).



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

Docket No. STN 50-488CP
50-489CP
50-490CP

DUKE POWER COMPANY
(Perkins Nuclear Station, Units
1, 2 and 3)

May 7, 1980

Upon the filing with the Appeal Board of a staff response to a petition to intervene submitted to the Licensing Board, the Appeal Board refers the response to the Licensing Board for that Board's consideration in acting on the petition.

RULES OF PRACTICE: JURISDICTION OF BOARDS

Every tribunal — whether judicial or administrative — possesses the inherent right and duty to determine in the first instance the bounds of its own jurisdiction. Where a party seeks relief from a licensing board, it is for that board to consider in the first instance whether it is empowered to grant the sought relief.

APPEARANCES

Mr. Charles A. Barth for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On April 15, 1980, David Springer filed a petition with the Licensing Board in this construction permit proceeding involving the proposed Perkins nuclear facility. The petition sought leave to intervene in this proceeding,¹ as well as certain allied relief.

On May 5, the NRC staff filed its response, in which it urged that the petition be denied on the merits. That response was not, however, submitted to the Licensing Board. Instead, it was addressed to us. The articulated reason was that, because of the rendition of its February 22, 1980 partial initial decision on alternate site issues,² the Licensing Board no longer has jurisdiction to entertain the petition; rather, such jurisdiction now resides exclusively in this Board.

We need not now decide whether the staff is right about that.³ Be that as it may, it is for the Licensing Board to consider *ab initio* whether it is empowered to grant relief which has been specifically sought *of it*. Every tribunal — whether judicial or administrative — possesses the inherent right (indeed, the duty) to determine in the first instance the bounds of its own jurisdiction. *United States v. United Mine Workers*, 330 U.S. 258, 292 fn. 57 (1947); *accord, Nestor v. Hershey*, 425 F.2d 504, 511 (D.C. Cir. 1969). As the Supreme Court has said in a related context: "While the Board's decision is not the last word [respecting its jurisdiction], it must assuredly be the first." *Marine Engineers Beneficial Assn. v. Interlake S.S. Company*, 370 U.S. 173, 185 (1962); *accord, FPC v. Louisiana Power and Light Company*, 406 U.S. 621, 647 (1972). The staff has not brought our attention to any special circumstances which might justify its attempt to circumvent that well-settled rule; *i.e.*, its calling upon an appellate body to pass *initial* judgment upon the jurisdiction of a lower tribunal to decide a matter which

¹A previous (and also untimely) intervention petition filed by Mr. Springer was denied by the Licensing Board; on his appeal from that denial, we affirmed. See ALAB-431, 6 NRC 460 (1977).

²LBP-80-9, 11 NRC 310. By unpublished order of March 4, 1980, we tolled the running of the time period for the filing of exceptions to that decision.

³It is worthy of passing note, however, that the Licensing Board has not totally relinquished jurisdiction over this licensing proceeding. As stated at the very inception of its February 22 partial initial decision, that Board still has before it generic safety issues. Thus, at present, there is divided jurisdiction between the two Boards. In that circumstance, the question possibly might be somewhat more difficult than the staff's response suggests. This is so notwithstanding the staff's asserted belief (Response, at 4) that the "substance" of Mr. Springer's petition is a motion to reopen the record on matters covered in the February decision. Indeed, the papers might also be construed as a motion to reconsider. See, *e.g., Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-235, 8 AEC 645, 646 (1974). We neither express nor intimate any opinion on how the papers should be construed, we merely reiterate that things may not be so plain as they seem at first glance.

has been put before that tribunal be another party (or, as here, a prospective litigant).

In short, even if wholly meritorious, the staff's jurisdictional assertions must originally be given consideration by the Licensing Board. Although we accordingly might simply reject the staff's papers as having been improvidently filed with us, in the interest of expediting the ultimate disposition of the matter we shall refer them to the Licensing Board for its consideration. We assume that, following its receipt of the applicant's response to Mr. Springer's petition,⁴ the Board will take such action on the petition as appears to it appropriate in the circumstances.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the Appeal Board

⁴The applicant applied for and obtained an extension until May 9 of the time for the filing of that response.

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. 50-2750L
50-3230L

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

May 13, 1980

The Appeal Board issues a Prehearing Conference Order establishing certain procedures and ruling on various motions related to the consideration by the Board of the adequacy of the facility's security plan.

**RULES OF PRACTICE: PRECEDENTIAL EFFECT OF BOARD
DECISIONS**

Unless published in official NRC reports, decisions and orders of appeal boards are usually not to be given precedential effect in other proceedings.

RULES OF PRACTICE: SECURITY PLANS

The adequacy of a nuclear facility's physical security plan may be a proper subject for challenge in a licensing proceeding. Such security plans are entitled to confidential treatment. 10 CFR 2.790(d). *Pacific Gas and Electric Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-410, 5 NRC 1398 (1977).

MEMORANDUM

We have decided to publish the Second Prehearing Conference Order issued by us on April 11, 1980 on the security plan issue in this operating license proceeding involving the Diablo Canyon nuclear facility. It had not

been our original intent to do so. Because, however, certain portions of that order have been challenged before the Commission by either the licensee or the intervenor, it now appears desirable to have its full text readily available to the NRC Bar generally. Beyond that consideration, we have been led to understand that at least one licensing board may wish to cite the order as precedent in other proceedings. But, unless published in the official NRC reports, decisions and orders of appeal boards are usually not to be given such effect.

The order in question, together with this memorandum, will appear following ALAB-591 in the official NRC reports and may be singly or collectively cited as ALAB-592.

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

Richard S. Salzman, Chairman
Dr. W. Reed Johnson¹
Thomas S. Moore

In the Matter of

Docket No. 50-275OL
50-323OL

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

April 11, 1980

**SECOND PREHEARING CONFERENCE ORDER (REPORT OF THE
PREHEARING CONFERENCE HELD APRIL 2, 1980)**

Pursuant to notice, on April 2, 1980, we held a closed prehearing conference in San Luis Obispo, California, for the purpose of establishing procedures and schedules for receiving evidence on the adequacy of Pacific Gas and Electric Company's security plan for its Diablo Canyon nuclear facility.

1. The following appearances were noted:

(a) For the San Luis Obispo Mothers for Peace, intervenor:

Mr. Yale I. Jones, *lead counsel*
100 Van Ness Avenue
San Francisco, California 94102
(415) 431-5310

Mr. W. Andrew Baldwin
124 Spear Street
San Francisco, California 94105
(415) 495-4779

¹Dr. Johnson participated in the decisions described in this report and concurs in the results reached; he did not, however, review the final draft of the report. See also Dr. Johnson's individual view on one point expressed at 757, *infra*.

Mr. Paul C. Valentine
321 Lytton Avenue
Palo Alto, California 94302
(415) 327-6700

(Mr. Valentine's appearance was filed by mail; he did not attend the prehearing conference.)

(b) For the licensee, Pacific Gas and Electric Company:

Mr. Bruce Norton, *lead counsel*
3216 North Third Street, Suite 300
Phoenix, Arizona 85012
(602) 264-0033

Mr. Malcolm M. Furbush and
Mr. Philip A Crane, Jr.
Law Department, 31st Floor
77 Beale Street
San Francisco, California 94106
(415) 781-4211

Mr. Arthur C. Gehr
3100 Valley Center
Phoenix, Arizona 85073
(602) 257-7288

(c) For the Nuclear Regulatory Commission staff:

Mr. James R. Tourtellotte, *lead counsel* (301) 492-7474
Mr. Marc R. Staenberg (301) 492-8689
Mr. Edward G. Ketchen (301) 492-7502, and
Mr. L. Dow Davis (301) 492-7501
Executive Legal Director's Office
Nuclear Regulatory Commission
Washington, D.C. 20055

(Mr. Davis' appearance was filed by mail; he did not attend the prehearing conference.)

2. **Lead Counsel.** Each party has several lawyers and, in both the licensee's and intervenor's case, lawyers with separate offices in different communities. In the past, this has resulted in some confusion about the actual position being espoused by one party or another. Particularly as we will be dealing with sensitive material, we directed each party to designate

one of its representatives to act as "lead counsel." As previously set forth, the parties have each done so. Lead counsel's responsibilities for his client in this proceeding are as follows:

- (1) Speak and act for his client in all matters except where he specifically designates one of his co-counsel to do so.
- (2) Sign all pleadings and motions.
- (3) Serve all papers.
- (4) Accept service of all papers.

Motions, briefs and other papers are to be served on lead counsel only, with copies to the members of this Board. The Secretary of the Commission (docketing and service section) shall not be served. Because of the nature of the subject matter, we will make the necessary arrangements with the Secretary's office to insure that material entitled to confidential treatment under 10 CFR 2.790 is not made public.

3. **Closed conference.** Intervenor moved to open the prehearing conference to the general public when specific portions of the licensee's physical security plan were not under actual consideration. Upon consideration of arguments from the intervenor in favor of the motion, from the licensee in opposition, and from the staff, the motion was denied. The announcement of the prehearing conference had specified that it would be closed, the licensee represented that its presentations were prepared with that understanding in mind, and that it would aid the free exchange of ideas at this preliminary conference if counsel did not have to measure his words with extreme care in order to insure that he did not inadvertently disclose to the public confidential aspects of the licensee's security arrangements.

4. **Protective Order and Affidavit of Non-Disclosure.** The licensee's physical security plan for the Diablo Canyon nuclear facility is entitled to confidential treatment under Commission regulations. 10 CFR 2.790(d). We announced in our First Prehearing Conference Order (February 25, 1980) that neither the security plan nor information regarding it would be released to intervenor's counsel or expert witnesses except under protective order and upon their execution of a suitable affidavit of non-disclosure.² At our request, the parties prepared an initial draft of those documents which, with some revisions on our part, were distributed to the parties and taken up at the prehearing conference. There were no objections raised to the form of the protective order. With one exception, counsel for all parties were able to agree on a form of non-disclosure affidavit that was

²See also the extended discussion of this point in ALAB-410, 5 NRC 1398, 1405-06 (1977).

acceptable. Among other things, that affidavit specifies the way protected information will be handled, safeguarded and accounted for. Intervenor's counsel and witnesses would be given access to such information only at a facility in San Francisco to be made available by the licensee. Protected information would be retained at that site for safekeeping unless and until actually needed for the hearing. (The protective order and the required form of affidavit of non-disclosure, which we have been advised intervenor's counsel have executed, are appended to this report.)

One matter, however, could not be resolved by agreement. The order and affidavit allow the recipients of "protected information" to discuss it only with "authorized persons" (terms defined in the affidavit and not in dispute). The question arose whether intervenor's counsel and expert witness could nevertheless discuss protected information publicly with outsiders where they had obtained such information from other sources, *i.e.*, other than by disclosure under the terms of the protective order. Over intervenor's objection, we ruled that such discussion would not be permitted.

The ruling rests on several grounds. First, the security plan is very sensitive information. Severe consequences to the public safety may result from its compromise. Accordingly, precautions necessarily must be taken to safeguard the plan. We believe it's the wisest course in the circumstances to avoid any questions which might otherwise arise concerning whether security plan information from another source is similar or identical to that previously disclosed under protective order.

Second, the limitation on disclosure has been narrowly drawn. It runs only to counsel and the expert witness, not to the intervenor organization. Protected information will not be given to the group itself under the procedures we have adopted. See ALAB-410, *supra*, 5 NRC at 1404, 1406. Because it covers only those very few individuals who will actually receive protected information pursuant to their terms, the order and affidavit work no infringement of intervenor's rights. The order is carefully tailored to protect intervenor's ability to participate effectively in the proceeding while, at the same time, minimizing the possibility of compromising licensee's security arrangements.

Third, intervenor's contentions in this proceeding boil down to the assertion that licensee's current security arrangements are inadequate. Their espousal of that position is not hampered by their counsel's preclusion from discussing, outside the hearing, details of those arrangements that have been revealed to them in confidence. Counsel's broadcast of such information, from whatever source obtained, manifestly will not advance intervenor's proffered purpose of increasing the plant's protection from industrial sabotage. Indeed, even in public proceedings where sensitive information is not involved, the Code of Professional Responsibility of the American Bar Association considerably restricts the comments that counsel representing a party in an administrative hearing may make to the public.³

Finally, if intervenor's counsel should obtain protected information from an outside source, nothing in the protective order or affidavit of non-disclosure precludes them from bringing that fact to our attention. (Indeed, the protective order requires that they do so.) A request for reconsideration could be made at that time, when we could rule in the context of a concrete situation and not on hypothetical circumstances.

5. **Execution of Non-Disclosure Affidavits.** The next order of business was to have been the execution by intervenor's counsel of non-disclosure affidavits. Those documents had to be retyped, however, to incorporate the changes adopted at the prehearing conference. In addition, intervenor's counsel wished to discuss those changes with their client. We accordingly allowed intervenor's counsel until Monday, April 7th, to execute the affidavits in question if intervenor wished to participate further in our review of licensee's physical security plan for the Diablo Canyon facility. (At this writing, we have been advised that the affidavits have been executed by counsel, but we have not received the executed copies.)

³Disciplinary Rule 7-107 provides in pertinent part that

(1) During the pendency of an administrative proceeding, a lawyer or law firm associated therewith shall not make or participate in making a statement, other than a quotation from or reference to public records, that a reasonable person would expect to be disseminated by means of public communication if it is made outside the official course of the proceeding and relates to:

(1) Evidence regarding the occurrence or transaction involved.

(2) The character, credibility, or criminal record of a party, witness, or prospective witness.

(3) Physical evidence of the performance or results of any examinations or tests or the refusal or failure of a party to submit to such.

(4) *His opinion as to the merits of the claims, defenses, or positions of an interested person.*

(5) Any other matter reasonably likely to interfere with a fair hearing.

(Emphasis supplied.)

6. **Objections to counsel.** In the past the licensee has objected to litigating any contention concerning the adequacy of its security plan that might allow intervenor to obtain information about that plan for fear that it might be publicly disclosed as a result. We have previously rejected licensee's position. See ALAB-410, 5 NRC 1398, *review denied*, CLI-77-23, 6 NRC 455 (1977). Our First Prehearing Conference Order provided that:

The law presumes that counsel will abide by their oaths and comply with protective orders. Therefore, if any party has reason to believe that any counsel is not likely to abide by the terms of a protective order, it shall bring the information upon which its belief is founded to our attention at the prehearing conference in a written motion to exclude that individual from the hearing and from receiving the details of the security plan. See ALAB-410, 5 NRC at 1406.

Pursuant to that invitation, licensee moved to exclude from participation in the review of the security plan one of intervenor's counsel, Mr. W. Andrew Baldwin.⁴

The motion rested upon statements made by Mr. Baldwin reported in the news media. This suggested to licensee an apparent lack of judgment and discretion on his part and, in its opinion, "gives rise to serious questions [about Mr. Baldwin's] likelihood of complying with non-disclosure agreements." Appended to the motion was a xerographic copy of one newspaper article that had appeared in the "Atascadero News" on February 16, 1979. The article purported to describe remarks made some fifteen months previous by Mr. Baldwin to a group opposed to the Diablo Canyon plant. No other evidence of Mr. Baldwin's likelihood of disobeying a protective order was offered in support of licensee's motion. Upon questioning by the Board, licensee stated that it had not attempted to investigate Mr. Baldwin's personal background. Mr. Furbush, the licensee's vice president and general counsel, explained the reason why not. He stated that whether or not such investigations were legally permissible, it was licensee's policy not to investigate individuals unless they were seeking employment with it in a sensitive position. Tr. 61-67.

The staff did not support the licensee's motion. Tr. 67-68.

Mr. Baldwin stated in essence that he had not previously seen the newspaper article in question. While he had no definitive recollection, in his view the article appeared to be an incomplete representation of his remarks and, in any event, it did not establish that he would disobey

⁴Licensee's motion papers represented that it had no knowledge about whether intervenor's other counsel, Messrs. Jones and Valentine, would be likely to violate the terms of the protective order or the non-disclosure affidavit. At the prehearing conference, however, licensee's counsel stated that he had no qualms about Mr. Jones in this respect. Tr. 59. Mr. Valentine was not present at the conference and apparently will not participate in this phase of the proceeding because of other professional commitments.

protective orders or disregard non-disclosure affidavits. Mr. Baldwin represented affirmatively to us that he would comply with such orders and affidavits. Tr. 78-79.

The Board, after deliberation, denied the motion to exclude Mr. Baldwin from further participation on the ground that applicant had not met its burden of proof.⁵ Tr. 81. We have entered a protective order.

7. **Objections to qualifications and depositions of expert witnesses.** Intervenor proposes to use Jeramiah P. Taylor as its expert witness. Mr. Taylor retired earlier this year as Deputy Police Chief of San Francisco. According to the resume presented by intervenor, Chief Taylor's professional background includes experience in building and site security; protection from explosives; riot and crowd control; anti-sniper measures; protecting important individuals; hostage negotiations; intelligence; and disaster and security coordination. Neither the licensee nor the staff objected to Mr. Taylor's overall qualification as an expert witness in security matters. The licensee expressed the desire to depose him, however, to ascertain the extent of his expertise in specific areas.

The intervenor sought similar leave to depose licensee's two witnesses, Messrs. Medcalf and Dettman, to discover the extent of their expertise in security matters. Intervenor represented that it had in mind the questioning of each of these witnesses for "an hour or less." Tr. 98.

The staff desired to participate in the depositions of all three witnesses. Leave to depose the three named witnesses at licensee's San Francisco offices was granted by the Board. The depositions are to be taken on April 17th, unless counsel for all parties agree on some earlier time or other location and notify us of the change.

8. **"Sanitized" version of the Diablo Canyon physical security plan.** Our First Prehearing Conference Order instructed the applicant and the staff jointly to prepare and give to us at the prehearing conference a "sanitized" version of the physical security plan for Diablo Canyon.⁶ It was our intent to review that version to insure that it did not reveal the operative portions of the actual plan in unnecessary detail, and then to allow intervenor's counsel to examine the sanitized plan under protective order and the

⁵Licensee's motion also urged that we postpone the security plan review until intervenor's counsel and witness had been subjected to a "Q-clearance" background check. The staff opposed this idea as impermissible under the regulations and, moreover, one that would delay the proceeding at least six months. When it was suggested that licensing of Diablo Canyon might have to be delayed in the interim if we adopted this course because it would mean putting off completion of the hearing on the security plan contentions, licensee stated that any such delay would be unacceptable. In the circumstances, we denied this phase of licensee's motion also.

⁶The term "sanitized" plan is explained in ALAB-410. See 5 NRC at 1405.

conditions specified in their affidavits of non-disclosure.⁷ For reasons explained in paragraph 5, however, counsel did not execute those affidavits at the prehearing conference. In addition, there was a misunderstanding about precisely how the sanitized plan was to be prepared. We therefore allowed the applicant and the staff until Friday, April 11, 1980, to submit their version of the sanitized plan to us. We also announced that one week thereafter, intervenor's counsel were to be given access to the sanitized version of the plan in accordance with the conditions of their affidavits of non-disclosure, provided, of course, that they had executed those affidavits.

9. Licensee's motion to say Intervenor's access to the "sanitized" plan. The steps we followed in calling for preparation of a "sanitized" security plan and our grant of access to it to intervenor (through counsel and expert witness) are in accord with the guidelines laid down nearly three years ago in this case. ALAB-410, 5 NRC 1398 (1977). Without repeating what was said there, that decision explains why challenges to the adequacy of security plans for nuclear power plants may be entertained in licensing proceedings. It also carefully circumscribes the conditions under which limited portions of those plans may be disclosed to intervenors in order to permit those issues to be litigated. In declining to review ALAB-410, the Commission stated in CLI-77-23, 6 NRC 455, 456 (1977); that

...the prospect of even limited disclosure of physical security plans for nuclear facilities poses serious and difficult questions. ...Nonetheless, our responsibilities require the Commission to make certain findings and determinations before issuing an operating license for a nuclear power reactor, and the sufficiency of an applicant's proposed safeguards plans and procedures are relevant to those findings and determinations. The extent to which the above principles and the facts of this case require disclosure beyond the general outlines and criteria of the applicant's security plan is a matter for the Licensing Board to decide in the first instance and under the guidelines of ALAB-410, subject of course to the ordinary procedures for review by the Appeal Board and the Commission.

Since that time, proceedings in this case have been conducted on the assumptions that the alleged inadequacies in licensee's Diablo Canyon physical security plan are cognizable contentions and that the intervenor is entitled to access to relevant portions of the plan — at least to the extent we contemplated in ALAB-410. And considerable time has been expended by the parties in litigation before the Licensing Board, ourselves, and the Commission over such matters as the qualifications of intervenor's proposed security plan expert witness.⁸ Notwithstanding this, on March 21, 1980 the licensee advised us by letter "that if and when we are ordered

⁷Those conditions essentially restrict counsel's access to the plan to a room to be made available in licensee's San Francisco offices.

⁸See, e.g., ALAB-504, 8 NRC 406 (1978); ALAB-514, 8 NRC 697, (1978); CLI-79-1 (1979); ALAB-580, 11 NRC 227 (February 15, 1980).

to turn over even the sanitized version of the [security] plan we will file a motion for stay and an appeal to the Commission." We placed that request for relief on the agenda of the prehearing conference and considered it there.

The grounds asserted by licensee for a stay and for their "appeal" are not based on any objection to the qualifications of intervenor's proposed expert witness, retired San Francisco Deputy Police Chief Taylor. Rather, we understand licensee to contend that even were Mr. Baldwin excluded from the proceeding, no litigation of the adequacy of its security plan should be allowed in this proceeding. It is on this ground that licensee argues that the plan should not be disclosed to intervenor even in a sanitized form.

At the prehearing conference we announced that the licensee's motion for a stay was denied by a unanimous vote of the Board on the ground that it had not established grounds for that relief. See 10 CFR 2.788(e).

First, licensee has not made "a strong showing that it is likely to prevail on the merits." The legal question whether the adequacy of a security plan is a proper issue for consideration in an adjudicatory proceeding was squarely addressed in ALAB-410 and is now the law of the case. There, in reliance upon Commission decisions as well as our own, we decided the issue adversely to licensee. *Id.*, 5 NRC at 1402 and following. Licensee can take no comfort from the Commission's opinion explaining its reasons for declining to review ALAB-410. The Commission there specifically stated that some disclosure of the licensee's security plan was necessary to the conduct of this proceeding. CLI-77-23, 6 NRC 455, 456 (1977). The Commission would hardly have said that were it of the view that the subject matter was simply not open to litigation at all.

Neither are we impressed by licensee's argument that since ALAB-410 there has been no "final decision" of this Board on the question which it could use as a vehicle to obtain plenary Commission review of the issue. Licensee could have (but did not) make its position known in opposing intervenor's attempt to get Commission review on the disqualification of its security plan witness.⁹ Licensee might also have invoked the procedures available under 10 CFR 2.758 and urged that the rule be waived or an exception made for it and the security plan issues not be considered in this case. And of course licensee could have asked us — or the Commission itself — to take up the issue by "certification." 10 CFR 2.785(d)¹⁰ No doubt there are other means by which licensee could have brought the substance of its position to the Commission's attention.¹¹ Its own failure to have

⁹See, e.g., CLI-79-1, 9 NRC 1 (1979).

¹⁰See, e.g., *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 790 (1978), *certification granted*, CLI-80-3, 11 NRC 185 (February 20, 1980).

¹¹E.g., 10 CFR 2.771 (petition for reconsideration), 10 CFR 2.802 (petition for rulemaking).

invoked any of them in the intervening years may not now be used to bolster its need for Commission review.

Neither has licensee shown that it will be irreparably injured if a stay is not granted. The only information currently scheduled for release to intervenor is a sanitized version of the security plan — one with the details of its operation excised by the staff with the assistance of licensee itself. Moreover, even that document will not be allowed to leave licensee's own premises (see affidavit of non-disclosure, *infra*, para. 4). And access to the sanitized plan will be given only to intervenor's counsel, under protective order, who have sworn not to disclose its contents — even to their client. Intervenor's expert witness — Chief Taylor — would be under similar restraints. There has been no showing that counsel will not comply with our order or abide his oath (in the case of Mr. Jones, that assertion was not even made). In the totality of circumstances, we perceive no likelihood of injury, much less irreparable injury, to licensee by allowing the limited access to the security plan now proper in the orderly course of this litigation.

The granting of a stay, on the other hand, will work a hardship on intervenor. Whether one agrees with its position or not, it is to be recognized that intervenor has legitimately invoked the appropriate Commission procedures in an effort to have the Diablo Canyon security plan reviewed by others than those who drafted and approved it initially. Its attempt to get that review has been opposed at every opportunity by the licensee, which has every right to do so. But intervenor is a public organization with limited funds; it cannot be expected to bear the burdens of litigation indefinitely. Another delay will be a hardship on it that is, in our judgment, not necessary.

Finally, where does the public interest lie? If the adequacy of licensee's security plan is properly at issue here, then the public interest is served best by moving forward with this proceeding as swiftly as circumstances and fairness permit. Intervenor has now obtained a witness whose expertise in security matters of this kind appears to be unquestioned. His review of the plan will be helpful, if not in improving the licensee's security arrangements, then certainly in assuring that its plan is in fact a good one. Moreover, it is to be borne in mind that licensee is pressing for an operating license for the Diablo Canyon facility, one unit of which is nearly completed. That license may not be authorized pending review and approval of its security plan. A stay of these proceedings — the practical effect of denying intervenor access to the sanitized plan — will mean that the security plan issue will be "in the critical path." (Certain other issues are also open.) We neither express nor intimate any opinion on whether the plant should or should not receive an operating license. But we think it not in the public interest to delay this proceeding to allow time for review of the

sort of question licensee seeks to raise before the Commission very belatedly and for a second time. There must be some end to litigation.

At this juncture we note that our foregoing discussion was prefaced with the remark (at 755, supra.), "If the adequacy of licensee's security plan is properly at issue here, . . ." Dr. Johnson reiterates that his view of intervenor participation in security plan hearings has not changed from that expressed in conjunction with Dr. Quarles in their concurrence in ALAB-410. In that concurrence they stated "had the regulations and precedents favoring [intervenor participation] not been so clearly drawn, we would have found that nuclear power plant site security plans should not be disclosed in the hearing process." 5 NRC at 1407.

10. **Final Order on release of security plan.** Notwithstanding our view that no stay is warranted under the governing law and regulations, if by the close of business Monday, April 14, licensee has filed a motion for a stay with the Commission, intervenor's counsel will not be given access to the sanitized plan for one week thereafter, *i.e.*, until the close of business the following Monday, April 21, 1980.¹² Unless the Commission or we direct otherwise in the interim, intervenor's counsel shall then be given access to the sanitized version of the security plan in accordance with our protective order and the affidavits of non-disclosure they have executed.

11. **Other matters.** We have intentionally left a number of other scheduling and procedural matters outstanding until we have had an opportunity to review the staff's and applicant's version of the sanitized security plan. Once we have reviewed the plan, we will issue a subsequent prehearing order concerning such matters as filing dates (a) for objections to any area of a witness' expertise; (b) for intervenor's amended contentions; and (c) for witness testimony.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹²At the prehearing conference, we indicated that licensee's stay motion should be filed by Friday, April 11th. At its counsel's request, based on his need to be away from his office on other business, we allowed licensee one extra business day to file its papers with the Commission.

APPENDIX

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. 50-2750L
50-3230L

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

PROTECTIVE ORDER ON SECURITY PLAN INFORMATION

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

1. Only Intervenor'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 Order of February 25, 1980 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.

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

3. Counsel and experts who receive any protective 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 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 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

Richard S. Salzman, Chairman

Done at San Luis Obispo, California,
this 3rd day of April 1980.

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 dealing with or describing details of that 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

intervenor's designation. Intervenor 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 intervenor mailings 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 publicly discuss or disclose any protected information that I receive by any means whatsoever.

Subscribed and sworn to before me this day of April, 1980.

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. 50-3870L
50-3880LPENNSYLVANIA POWER AND
LIGHT COMPANY and
ALLEGHENY ELECTRIC
COOPERATIVE, INC.(Susquehanna Steam Electric
Station, Units 1 and 2)

May 21, 1980

Acting on the Commission's referral in CLI-80-17, 11 NRC 678 (1980), of an intervenor's request for interlocutory review of certain Licensing Board discovery rulings and other matters, the Appeal Board directs the parties to address subsequent rulings by the Board below that may have mooted the appeal.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

Interlocutory appeals as of right are generally not permitted under the NRC Rules of Practice, 10 CFR 2.739(f). Discretionary interlocutory review ("directed certification" under 10 CFR 2.718(i) and 2.785(b)(1)) is granted sparingly; essentially, only when a licensing board's action either (a) threatens the party adversely affected with immediate and serious irreparable harm which could not be remedied by a later appeal; or (b) affects the basic structure of the proceeding in a pervasive or unusual manner. *Public Service Electric and Gas Company* (Salem Generating Station, Unit 1), ALAB-588, 11 NRC 536 (April 1, 1980)

APPEARANCES

Mr. Jay E. Silberg, Washington, D.C., for Pennsylvania Power and Light Company and Allegheny Electric Cooperative, Inc., applicants.

Dr. Judith H. Johnsrud, State College, Pennsylvania, for intervenor Environmental Coalition on Nuclear Power, petitioner.

Mr. James M. Cutchin, IV, for the Nuclear Regulatory Commission Staff.

MEMORANDUM AND ORDER

The Environmental Coalition on Nuclear Power ("ECNP") is one intervening party in this operating license proceeding now pending before the Licensing Board. This intervenor is not, however, represented by counsel. On March 15, 1980, ECNP filed a "Request...for Consideration of Actions of an Atomic Safety and Licensing Board and Other Matters" directly with the Commissioners. On May 16th the Commission referred intervenor's papers and the opposing parties' responses to us for appropriate action. CLI-80-17, 11 NRC 678.

Intervenor's "Request" alleged that it was being unfairly harassed by applicant's discovery tactics and by a series of Licensing Board rulings on discovery and scheduling matters. The request is essentially an endeavor to obtain interlocutory review of those rulings.

Interlocutory appeals are generally not permitted as a matter of right under the Rules of Practice. 10 CFR 2.730(f). Charges of the sort intervenor levels here are normally subject to appellate review at the end of the case when (and if) an appeal is taken from the Licensing Board's final decision. We may, *as a matter of discretion*, elect to entertain such matters now under our authority to "direct certification" of important issues that arise before a licensing board. 10 CFR 2.718(i) and 2.785(b)(1). As we have but recently reiterated, however, "[o]ur decisions establish that discretionary interlocutory review will be granted only sparingly, and then only when a licensing board's action either (a) threatens the party adversely affected with immediate and serious irreparable harm which could not be remedied by a late appeal, or (b) affects the basic structure of the proceeding in a pervasive or unusual manner." *Public Service Electric and Gas Company*

(Salem Generating Station, Unit 1), ALAB-588, 11 NRC 536 (April 1, 1980).¹ And we are particularly reluctant to intrude into the conduct of a licensing board hearing in progress where the dispute is only over such preliminary questions as the manner of receipt of evidence or the conduct of discovery.²

In the matter before us, directed certification is sought on allegations of extreme harassment resulting from assertedly abusive and burdensome discovery obligations imposed upon intervenor by the Board below at the applicant's instance. To give but one example, ECNP claims in the papers it filed on March 15th that the Licensing Board has required it to respond to "some 2700 interrogatories [served] upon [ECNP]" by the applicant. However, ECNP filed its request for review some time ago; in the interim the Licensing Board has made additional rulings and entered other orders modifying intervenor's discovery obligations.³ The effect of these rulings may have substantially alleviated, if not mooted, intervenor's complaints. ECNP therefore may no longer need or desire to press its allegations or seek the interlocutory relief demanded in its March 15th filing.

Accordingly, before we proceed with our consideration of this matter, within 10 days of the date of this order ECNP is directed to inform us concisely (1) the extent to which the allegations contained in its March 15th request have been affected by the more recent Licensing Board rulings we have cited, and (2) whether (and if so, to what extent) it continues to seek the nine categories of relief it requested in those papers. Within 10 days after ECNP provides that advice, the applicants and the staff (unless the intervenor withdraws its request for relief) shall (1) also answer the first question we addressed to the intervenor and (2) respond to the intervenor's allegations *on the merits*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

¹*Accord, Puget Sound Power and Light Company* (Skagit Project, Units 1 and 2), ALAB-572, 10 NRC 693 (1979); *Public Service Company of Indiana* (Marble Hill, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192 (1977).

²*E.g., 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).

³These are memorialized in Licensing Board Memoranda dated March 27, 1980; April 11, 1980 (LBP-80-13, "Second Prehearing Conference Order"); and May 8, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Sheldon J. Wolfe, Esq., Chairman
Gustave A. Linsenberger, Jr.
Dr. Richard F. Cole

In the Matter of

Docket No. 50-376-CP

**PUERTO RICO ELECTRIC
POWER AUTHORITY**
**(North Coast Nuclear Plant,
Unit 1)**

May 29, 1980

The Licensing Board denies in its entirety intervenor's request that the Board (a) conduct a show cause hearing regarding applicant's intention to proceed with its application for a construction permit, (b) dismiss the application with prejudice if it is found that the applicant does not intend to construct the plant, and (c) require the applicant to pay damages and attorneys fees to the intervenor.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

Requests for an Order to Show Cause must be directed to the NRC technical staff and not to licensing boards. 10 CFR 2.202, 2.206.

**RULES OF PRACTICE: HEARING REQUIREMENT FOR
CONSTRUCTION PERMIT APPLICATIONS**

There is no procedure (short of withdrawal by an applicant) for a licensing board to dispose of a construction permit application without holding a hearing on health, safety and environmental issues.

RULES OF PRACTICE: MOTION FOR SUMMARY DISPOSITION

A Motion for Summary Disposition may not be used to determine the ultimate issue in a construction permit proceeding as to whether a permit shall be issued. 10 CFR 2.749(d).

COMMISSION PROCEEDINGS: CLAIMS FOR DAMAGES

Licensing boards in construction permit proceedings do not have the authority to consider claims for damages.

ORDER

On April 30, 1980, Gonzalo Fernos, for himself, and on behalf of members of Citizens for the Conservation of Natural Resources, Inc. (Intervenors), filed a "Petition Requesting Evidentiary Hearings To Request Applicant To Show Cause Why Their Application Should Not Be Dismissed For Lack Of Intention To Build." Applicant and Staff filed responses respectively on May 19 and May 21, 1980.

Intervenors request that this Board (a) conduct a show cause hearing regarding Applicant's intention to proceed in seeking an application for a construction permit, (b) issue an order dismissing with prejudice the instant application in the event we find that the Applicant does not intend to construct the nuclear plant, and (c) impose upon the Applicant costs and damages in the amount of \$10,000.00 on behalf of the Intervenors for causing litigation upon a meaningless application.

Intervenors assert that Applicant has "dropped" its intention to construct the nuclear plant as evidenced by filings of Motions of Desistance in the Court of Expropriation of the Superior court of Puerto Rico wherein Applicant requests that, upon the refunding of monies paid by Applicant for expropriating the site, title to the land should revert to various landowners. Intervenors allege that Applicant has concealed its intention not to construct the plant and has written down the actual costs incurred in order to mislead current and potential bondholders. They cite a 1979 Interim Report prepared by the National Research Council of the National Academy of Science which, in part, states that nuclear power is ruled out because the capacity of the proposed nuclear plant would outstrip need and because it could not be completed within the next decade when some additional power would be needed. They also cite the Governor of Puerto Rico's Report to the Legislature in January, 1980 which, while speaking about different sources of energy being studied for future use, is silent about

nuclear energy. Finally, the Intervenor's cite a document prepared in June 1979 by the Office of Energy of Puerto Rico attached to the Governor's Office, and assert that it raises serious doubts about the use of nuclear energy because of the many unanswered questions related to such technology, mainly, waste disposal, availability of uranium, cost of shutdown of reactors, etc.

The NRC Staff argues that, on legal grounds, the Petition (hereafter referred to as the Motion) should be denied. The Applicant also argues that, as a matter of law, the Motion should be denied. However, Applicant proceeds to address the merits of the allegations advanced by the intervenors.

We do not reach and decide the merits of the Intervenor's arguments and/or allegations. As a matter of law, the instant Motion must be and is denied. In the first place, we lack the authority to consider a Motion For An Order To Show Cause. As reflected in 10 CFR 2.202, 2.206, a request initiated by any person for an Order To Show Cause must be directed to the NRC technical staff, which may institute a proceeding to modify, suspend, or revoke a license or for such other action as may be proper by serving on the licensee¹ and order to show cause. Secondly, if the instant motion be construed as a motion requesting that an order be issued dismissing the application should the Board determine, after an evidentiary hearing, that Applicant no longer intends to construct the nuclear plant, the motion must be denied. In light of Section 189 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 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. Thirdly, if the instant motion be construed as a Motion For Summary Disposition, it must be denied because 10 CFR 2.749(d) states that such a motion may not be used to determine the ultimate issue as to whether a construction permit shall be issued.² Finally, to the extent that the Intervenor seeks damages, such a claim is clearly beyond our authority to consider. To the extent that the Intervenor, in seeking costs, are actually claiming funding for past participation, such a claim is clearly precluded because, in the time frame involved herein, the

¹In passing, we note that 10 CFR 2.4(j) defines "license" as meaning "a person who is authorized to conduct activities under a license or construction permit issued by the Commission." Obviously, the Applicant herein, seeking a construction permit, is not a "licensee."

²Again, in passing, we note that we have had occasion in the past to refer to this preclusion provision of 2.749(d). See our unpublished Order of May 1, 1978 which denied Intervenor's Motion To Dismiss or to Grant Alternative Relief.

Commission had determined not to initiate a program to provide funding for intervenors. *Nuclear Regulatory Commission (Financial Assistance to Participants in Commission Proceedings)*, CLI-76-23, 4 NRC 494 (1976). Intervenors' claim for past expenditures has not been advanced by the recent decision in *Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1)*, CLI-80-19, 11 NRC 700 (May 16, 1980), wherein the Commission stated that it declined to consider funding intervenors in that case in light of the advice of the Comptroller general and its clear reading of the legislative history associated with the fiscal year 1980 appropriations legislation, but noted that it is in favor of intervenor funding as was clearly indicated by the fiscal year 1981 budget submission and subsequent Congressional testimony.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Gustave A. Linenberger, Jr.
Member

Dr. Richard F. Cole
Member

Sheldon J. Wolfe, Esquire
Chairman

Dated at Bethesda, Maryland
this 29th day of May 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-SP

METROPOLITAN EDISON
COMPANY(Three Mile Island Nuclear
Station, Unit 1)

May 30, 1980

Acting on the Commission's response to two certified questions regarding hydrogen gas control, CLI-80-16, 11 NRC 674 (1980), the Licensing Board reformulates and accepts for litigation one intervenor's contention on that subject in accordance with the Commission's order. Without ruling on the admissibility of two other intervenors' contentions on the same subject, the Licensing Board decides to permit their consolidation with that of the first intervenor. The Board also invites the parties to address whether the Commission's order precludes litigation of engineered post-accident hydrogen gas control measures beyond those required by 10 CFR 50.44.

MEMORANDUM AND ORDER ON HYDROGEN CONTROL
CONTENTIONS

On January 4, 1980, the board certified to the Commission two questions:

1. Whether the provisions of 10 CFR 50.44 should be waived or exceptions made thereto in this proceeding where a *prima facie* showing has been made under 10 CFR 2.758 that hydrogen gas generation during the TMI-2 accident was well in excess of the amount required under 10 CFR 50.44 as a design basis for the post-accident combustion control system for TMI-1.
2. Whether post-accident hydrogen gas control should be an issue in this proceeding where post-accident hydrogen gas control was perceived to be a serious problem and was in fact a problem during the TMI-2 accident.

In the Commission's Memorandum and Order of May 16, 1980, CLI-80-16, the Commission answered certified question No. 1, in the negative. In declining to waive the provisions of 10 CFR 50.44, the Commission observed that it is planning a general rulemaking on the question of possible safety features to deal with degraded core conditions and that 50.44 should remain in place pending the more deliberate and considered rulemaking.

As to certified question No. 2 the Commission commented that it did not intend to exclude the issue of hydrogen gas control from its Notice and Order for Hearing of August 9, 1979; that the hydrogen control issue can be litigated under 10 CFR Part 100.

Emphasizing that the assumptions of hydrogen generation under 10 CFR 50.44 are dependent upon ECCS design as opposed to actual ECCS operation, the Commission's Order authorizes litigation of the likelihood of an accident generating hydrogen in quantities exceeding 10 CFR 50.44 design bases, the likelihood of such hydrogen combusting, and the ability of the containment to withstand pressures beyond containment design pressure. The Commission also noted that a critical issue in the chain of circumstances under consideration would be the likelihood of an operator interfering with the ECCS operation.

Three intervenors have submitted contentions relating to post-accident hydrogen: Mr. Sholly, Union of Concerned Scientists (UCS), and Anti-Nuclear Group Representing York (ANGRY). The board authorized discovery on the hydrogen control contentions, but their acceptance or rejection as issues for litigation is still pending. The contentions are:

Sholly Contention 11

It is contended that the production of hydrogen in the reactor core from clad metal-water reactions following a LOCA poses an unacceptably high risk of catastrophic failure of the reactor pressure vessel and the reactor containment, with the subsequent release of a substantial portion of the core inventory into the environment. It is further contended that until a safe and reliable means for eliminating hydrogen gas from the containment is installed at Unit 1, and is provided with suitable redundancy as required by GDC 41, restart of Unit 1 poses a risk to public health and safety and must be denied.

UCS Contention 11

The design of the hydrogen control system at TMI was based upon the assumption that the amount of fuel cladding that could react chemically to produce hydrogen would, under all circumstances, be limited to less than 5%. The accident demonstrated both that this assumption is not justified and that it is not conservative to assume anything less than the worst case. Therefore, the hydrogen

control systems should be designed on the assumption that 100% of the cladding reacts to produce hydrogen.

ANGRY Contention V (A)

V. The NRC Order fails to require as conditions for restart the following modifications in the design of the TMI-1 reactor without which there can be no reasonable assurance that TMI-1 can be operated without endangering the public health and safety:

- (A) Installation of a Hydrogen Recombiner as recommended by a minority position in NUREG 0578;

Major elements of Mr. Sholly's Contention 11 may be litigated as a Part 100 issue and in accordance with the standards of the Commission's May 16 Order. However, we have redrafted Sholly's Contention 11 to bring it into alignment with the Commission's Order and to accommodate the views of the board members.

Whether any part of UCS's Contention 11 falls within the permissible scope of the contention is debatable and ANGRY's Contention V (A) is only marginally within the scope, if at all. However, we need not analyze the deficiencies of the UCS and ANGRY contentions, because, having raised the general subject matter and having demonstrated an interest in this aspect of the litigation, we will permit UCS and ANGRY to consolidate with Mr. Sholly on the revised Sholly contention. This, we believe, will protect their interests in the subject to the extent that their interests fall within the scope of the issue. Inasmuch as it is Mr. Sholly's contention that survives, it would seem to be his prerogative to be lead intervenor, but we leave that to the affected intervenors to arrange.

Accordingly the board accepts Sholly Contention 11, as we have redrafted it:

Revised Sholly Contention 11

The licensee has not demonstrated that, in the event of a loss-of-coolant accident at TMI-1:

1. substantial quantities of hydrogen (in excess of the design basis of 10 CFR 50.44 will not be generated; and
2. that, in the event of such generation, the hydrogen will not combust; and
3. that, in the event of such generation and combustion, the containment has the ability to withstand pressure below or above the containment design pressure, thereby preventing releases of off-site radiation in excess of Part 100 guideline values.

Item 3 of the contention is intended to include intentional venting of the containment as postulated in the basis of Mr. Sholly's contention, and would permit the licensee to place into issue a defense that, even assuming the generation and the combustion in excess of 50.44 design bases and the threat of breach of containment, that post-accident hydrogen control measures would limit releases to guideline values under Part 100.

As stated in the Commission's May 16 Order, "A critical issue here would be the likelihood of an operator interfering with the ECCS operation." The board expects the parties to develop fully a record on the operator interference issue.

The contention will of course be construed according to the terms of the Commission's May 16 Order. This, however, raises the possibility of a problem which we invite the parties to address.

The board quorum has been unable to agree on certain aspects of the Commission's May 16 Order.¹ Dr. Jordan believes that the Order precludes litigation of engineered post-accident hydrogen control measures beyond those required by 50.44 because the Commission has reserved that issue to rulemaking. He relies upon, *inter alia*, the Commission's statement that "This rulemaking proceeding will include measures to deal with hydrogen generation following a loss-of-coolant accident." Order, at 3. Moreover, Dr. Jordan believes that, as a practical matter, the litigation will center around hydrogen generation, combustion, and containment integrity, with other hydrogen control issues becoming factually immaterial as an issue in this particular proceeding.

Mr. Smith, defers to Dr. Jordan's assessment of the practical aspects of the possible litigation on post-accident hydrogen control measures, but he believes that such issues should not and, under the Commission's Order, must not be foreclosed.

In support of his position, Mr. Smith points to the language of the Commission's Order on page 2:

The Commission believes that, quite apart from 10 CFR 50.44 hydrogen gas control could properly be litigated in this proceeding under 10 CFR Part 100. Under Part 100, hydrogen control measures beyond those required by 10 CFR 50.44 would be required if it is determined that there is a credible loss-of-coolant accident scenario entailing hydrogen generation, hydrogen combustion, containment breach or leaking, and offsite radiation doses in excess of Part 100 guideline values.

¹Dr. Little has not participated in this action, but she will be available to consider the parties' comments and any reconsideration.

Under Mr. Smith's view of the Order, in a credible scenario where ECCS operation, particularly operator interference, as opposed to ECCS design, leads through a chain of events to offsite radiation in excess of Part 100 guidelines, the adequacy of engineered post-accident hydrogen control measures would become an issue under the Order.

Dr. Jordan and Mr. Smith agree that, under the contention as it is redrafted, the issue is unlikely to become critical but it is not foreclosed from consideration. The licensee may elect to defend against the contention on the questions of the likelihood of generation, the likelihood of combustion, or the capacity of the containment to withstand the effects of combustion. Perhaps licensee may never reach the point of depending upon engineered post-accident hydrogen control measures. But, we agree that the impending rulemaking does not prohibit the licensee from asserting, in addition to one or more of the first three defense elements, that additional hydrogen control measures may be relied upon to meet Part 100 guidelines. In that event, of course, the intervenors would be permitted to follow wherever licensee's defense takes them.

The parties may submit comments, motions for reconsideration or corrections, and requests for discovery relief within 10 days following the service of this order.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Ivan W. Smith, Chairman

Bethesda, Maryland
May 30, 1980



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 50-275 OL
50-323 OL

**PACIFIC GAS AND ELECTRIC
COMPANY**

**(Diablo Canyon Nuclear Power
Plant, Unit Nos. 1 and 2)**

June 11, 1980

Acting upon petitions to review ALAB-592 filed by applicant and intervenor, the Commission upholds that part of ALAB-592 requiring that the security plan be made available (under a protective order) to intervenor's counsel and expert witness; rules that a protective order issued by a board may not constitutionally limit public disclosure of information obtained outside the hearing process; and remands the matter to the Appeal Board for decision as to which of two specified procedures should apply to the disclosure of such outside information.

RULES OF PRACTICE: SECURITY PLANS

The adequacy of a nuclear facility's physical security plan may be a proper subject for challenge by intervenors in an operating license proceeding. *Consolidated Edison Company of New York* (Indian Point Station, Unit 2), 7 AEC 947, 949 (1974). Commission regulations contemplate that sensitive information may be turned over to intervenors in the proceeding under appropriate protective orders. 10 CFR 2.790.

RULES OF PRACTICE: SECURITY PLANS

In determining whether, and under what conditions, security plans may be made available to intervenors, boards are to follow the guidelines set forth in ALAB-410 (5 NRC 1398) and ALAB-592 (11 NRC 744).

RULES OF PRACTICE: PROTECTIVE ORDERS

Protective orders may not constitutionally preclude public dissemination of information which is obtained outside of the hearing process. See *Rodgers v. United States Steel Corporation*, 536 F.2d 1001, 1007 (3rd Cir. 1976); *International Products Corporation v. Koons*, 325 F.2d 403, 408 (2d Cir. 1963); and *In Re Halkin*, 598 F.2d 176, 195, n. 45 (D.C. Cir. 1979).

RULES OF PRACTICE: PROTECTIVE ORDERS

A person subject to a protective order is prohibited from using protected information gained through the hearing process to corroborate the accuracy or inaccuracy of outside information. Moreover, the Commission discourages participants in Commission proceedings from gathering protected information from independent means and publicly disseminating such information.

MEMORANDUM AND ORDER

On April 11, 1980, the Appeal Board issued a Second Prehearing Conference Order (ALAB-592) directing that representatives of intervenor, San Luis Obispo Mothers for Peace, be provided access to a sanitized version of the Diablo Canyon physical security plan. The Board directed that the plan be released to intervenor's counsel and to its expert witness under the terms of a protective order and upon execution by these individuals of an affidavit of non-disclosure. On April 14, 1980 the applicant, Pacific Gas and Electric Company (PG&E) filed a motion with the Commission seeking a stay of the Appeal Board's order and also filed a petition requesting Commission review of the Board's decision to release the plan to the intervenor. PG&E opposes turning over the sanitized physical security plan to the intervenor because it believes that there is inadequate assurance that one of intervenor's counsel will abide by the terms of the affidavit of non-disclosure. On April 21, 1980, the Commission issued an order directing that the sanitized physical security plan not be turned over to the intervenor unless and until the Commission so directed. On April 23, 1980, intervenor filed a motion with the Commission

requesting a stay of the Board's order and petitioning the Commission to review the Board's decision. Intervenor believes that one of the provisions of the proposed affidavit of non-disclosure is unconstitutional.

Intervenor filed pleadings opposing PG&E's requests; PG&E filed a pleading opposing intervenor's motions; and the NRC staff filed pleadings opposing the requests of both PG&E and the intervenor.

The Commission has reviewed these pleadings, has denied the petition for review filed by PG&E, and has granted the petition for review filed by the intervenor. Because the Commission has acted upon the petitions for review, the motions to stay the Appeal Board order are moot and the Commission will not rule upon them.

In its petition for review PG&E argues that the physical security plan should not be made available to petitioners because the best method of preventing public disclosure of this sensitive document is to make it available to the fewest number of individuals possible. The Commission recognizes PG&E's concern, but emphasizes that intervenors in Commission proceedings may raise contentions relating to the adequacy of the applicant's proposed physical security arrangements,¹ 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.² In this proceeding the Appeal Board in ALAB-410, 5 NRC 1398 (1977) and in its Second Prehearing Conference Order of April 11, 1980 (ALAB-592), has set forth guidelines on when and under what conditions physical security plans may be made available to intervenors. The Commission has reviewed these orders, and with the one exception noted below, endorses the guidelines developed by the Appeal Board. We believe that the Board has done a commendable job of interpreting the law and balancing competing policy interests, and has handled the sensitive issues raised by requests for access to the Diablo Canyon physical security plan wisely.

With respect to the PG&E claim that it is unable to determine whether one of intervenor's counsel is likely to abide by the terms of the protective order and affidavit of non-disclosure, we noted that the individual has assured the Appeal Board that he will abide by the terms of the protective order and the affidavit of non-disclosure. As a member of the Bar of the Supreme Court of California, he must be acutely aware that if it can be demonstrated that he has breached these agreements, his license to practice law could be placed in jeopardy. We believe this possible sanction, plus his

¹*Consolidated Edison Company of New York* (Indian Point Station, Unit 2), 7 AEC 947, 949 (1974).

²The regulations are consistent with the policy set forth in Section 181 of the Atomic Energy Act.

assurances, are sufficient grounds to conclude that the counsel will abide by his commitments. We therefore direct that PG&E make the sanitized version available to the intervenor.

Intervenor challenges a provision of the proposed affidavit of nondisclosure which would prohibit those subject to the protective order and affidavit of non-disclosure from publicly discussing or commenting upon protected information which is obtained (a) outside of the course of this proceeding or (b) which has been publicly disclosed by others. Intervenor argues that this limitation violates the First Amendment of the Constitution.

The Commission agrees with the intervenor. In several recent cases, the courts have made clear that protective orders may not constitutionally preclude public dissemination of information which is obtained outside of the hearing process. See *Rodgers v. United States Steel Corporation*, 536 F.2d 1001, 1007 (3rd Cir. 1976); *International Products Corporation v. Koons*, 325 F.2d 403, 408 (2d Cir. 1963); and *In Re Halkin*, 598 F.2d 176, 195, n.45 (D.C. Cir. 1979).

In reaching these conclusions the Commission wishes to emphasize two points. First, the affiant making the public disclosure is prohibited from corroborating the accuracy or inaccuracy of the outside information by using protected information gained through the hearing process. Second, the Commission discourages participants in Commission proceedings from gathering protected information from independent means and publicly disseminating such information.

Chairman Ahearne and Commissioner Hendrie believe that before intervenors publicly disseminate protected information gained outside the hearing process they should be required to establish to the satisfaction of the board presiding over the Commission proceeding — in the present case the Appeal Board — that the information was in fact gained outside of the hearing process. Commissioners Gilinsky and Bradford do not believe that the parties should be required to secure prior Appeal Board clearance. They believe that any such clearance procedure is an unconstitutional prior restraint. Because the Commission is divided on this matter it remands this issue back to the Appeal Board and directs the Board based on its own reading of the law to select one of these two options. After making its decision the Appeal Board shall modify the affidavit of non-disclosure so that it conforms with the Board's decision. The Board's decision will not be reviewed by the Commission. As soon as intervenor's counsel and witnesses

have executed a revised affidavit of non-disclosure, PG&E is to make the sanitized version of the physical security plan available to these individuals.

It is so ORDERED.³

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 11th day of June 1980.

ADDITIONAL VIEWS OF COMMISSIONER BRADFORD

I agree that the First Amendment prohibits an affidavit which forecloses public comment on protected information obtained outside the proceeding or disclosed by others. Such a prohibition constitutes a prior restraint on the speech of the intervenors in violation of the First Amendment. *Rodgers v. United States Steel Corporation*, 536 F.2d 1001, 1006 (3rd Cir. 1976). To cure this infirmity, the Commission amends the affidavit to remove the absolute restraint on discussion of independently obtained information, but leaves open the possibility of a prior restraint upon the speech of the intervenors in the form of Appeal Board clearance prior to public comment.

I do not agree that this prior restraint is permissible. It is clear that the First Amendment sought to protect not only against absolute restraints, but also against restraints which might or might not through governmental processes be subsequently lifted. See *Near v. Minnesota ex rel Olson*, 283 U.S. 697 (1931).

Furthermore, this prior restraint would be unreasonable and discriminatory in its application. An examination of such a restraint order reveals the following:

1. The purpose of such a prior restraint order must be to prevent disclosure of features of the security plan. However, our order explicitly recognizes that the possible sanctions flowing from disclosure "are sufficient grounds to conclude that the counsel will abide by his commitments." It is not clear how the proposed restraint will be any more effective than the sanctions already in place.
2. The affidavits need only be signed by the intervenors, not by utility personnel or NRC employees. No showing has been made that the intervenors are inherently less trustworthy than other persons who have

³Commissioner Kennedy has recused himself from this proceeding.

seen the plan, yet they are singled out. Utility employees are under no NRC sanction whatsoever from disclosing this information, and they certainly would not be required to come to the Board prior to discussing the plan.¹ Commission staff would face sanctions if they were still with the Commission, but they would not be subject to the proposed prior restraint and would be free to comment upon publicly available information regarding the security plan.

In conclusion, I agree that PG&E should be required to turn over the physical security plan to the intervenor. I would support a protective order which provides for an affidavit prohibiting disclosure of the protected information gained through participation in this proceeding. I would, however, require the same affidavit from other attorneys and witnesses.

¹It is not enough to argue that the utility is free to release its own proprietary information, for the public health and safety consequences are all that are alleged to justify the measures being taken.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 50-320 OL

METROPOLITAN EDISON
COMPANY, *et al*
(Three Mile Island Nuclear
Station, Unit 2)

June 12, 1980

Upon consideration of the staff's recommendation to authorize the licensee to commence a controlled purging of the TMI-2 reactor building atmosphere to remove the remaining radioactive Krypton-85, the Commission finds that the proposed purging will have negligible physical impacts on those living near the facility (as well as on the general population); that it will result in a long-term reduction in the sources of psychological stress in the area; and that there is sufficient need for prompt decontamination of the containment atmosphere to justify going ahead prior to completion of the programmatic impact statement currently being prepared.

MEMORANDUM AND ORDER

The Commission has before it a staff recommendation that the licensee, Metropolitan Edison Company, et al., be authorized to commence a controlled purging of the TMI-2 reactor building atmosphere in order to remove the remaining radioactive Krypton-85.¹ To meet the requirements

¹Most of the radionuclides originally released into the containment atmosphere have decayed to insignificant levels. The dominant remaining radionuclide is the gas, Krypton-85 (Kr-85), which has a 10.7-year half-life. The Environmental Assessment states that approximately 57,000 curies of Kr-85 are mixed in the containment atmosphere, as determined by periodic sampling of Kr-85 concentrations.

of the National Environmental Policy Act, the staff has submitted in support of this recommendation a "Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," NUREG-0662, May 1980. The draft version of this assessment and two subsequent addenda were issued for public comment, and by the close of the comment period on May 16, 1980 approximately 800 responses had been received. These are summarized in Section 9 of the final assessment and major comments are included in Volume II of NUREG-0662. The Commission received further information regarding the proposed purging at oral briefings by the staff on June 5, 1980 and June 10, 1980.

In a Statement of Policy dated November 21, 1979 the Commission announced its intent to prepare a programmatic environmental impact statement on decontamination and disposition of radioactive waste resulting from the March 28, 1979 accident at Three Mile Island, Unit 2. The policy statement noted that if the best interest of public health and safety required prompt decontamination action prior to completion of the programmatic statement, such action would not be precluded. The Commission stated among other things, however, that no action to purge the containment of radioactive gases would be taken without a prior environmental review and opportunity for public comment. Before we can approve the staff's recommendation for controlled purging of the TMI-2 containment, we must thus decide whether there is sufficient need for prompt decontamination of the containment atmosphere to justify going ahead prior to completion of the programmatic impact statement. We must also decide whether the decontamination method recommended by the staff can be carried out consistent with the Commission's statutory mandate to ensure adequate protection of public health and safety and whether the environmental review has met the requirements of the National Environmental Policy Act.

The immediate goal of the proposal to purge the reactor building atmosphere is to remove radioactive particulates and gases released into the containment by the accident. There are several methods discussed in the Environmental Assessment by which the radioactive krypton can be removed. The method recommended by the staff involves controlled release to the outside atmosphere of the gases in the containment through the existing plant ventilation system, the hydrogen control subsystem, and the reactor building purge system. The release rates would be controlled so as to take place only during acceptable meteorological conditions, which would be continuously monitored, such that the dose limits established by 10 CFR Part 20, the design objectives of 10 CFR Part 50, Appendix I, and the provisions of 40 CFR Part 190.10, to the extent they may be applicable,

will not be exceeded by the controlled purging.² In addition to monitoring of releases by the NRC, radiological monitoring during the proposed controlled purging would be conducted by the U.S. Environmental Protection Agency (EPA), the Commonwealth of Pennsylvania, the U.S. Department of Energy and Metropolitan Edison Company.

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 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.

Removing Kr-85 from the containment atmosphere would yield a number of important and immediate benefits. Radiation from Kr-85 at the concentration levels found inside the containment significantly limits worker access and precludes extensive operations needed to gather information, inspect and maintain equipment, and proceed toward the eventual removal of the highly radioactive damaged nuclear fuel from the reactor core. Decontaminating the atmosphere would relieve workers performing necessary maintenance and cleanup activities from hazards of working in awkward protective clothing and risk from penetrating gamma radiation associated with the decay of Kr-85.³ Moreover, there is no serious question that removal of the Kr-85 from the containment atmosphere is a necessary step toward core defueling. Until the fuel is removed, TMI-2 will

²The most restrictive regulation is 10 CFR Part 50, Appendix I. Appendix I sets forth gaseous release annual offsite dose design objectives of 5 millirems to the total body and 15 millirems to the skin. The purging will be limited so that the maximally exposed individual could not receive a dose from purging that exceeds this objective. Gaseous releases from TMI-2 unrelated to purging are expected to be insignificant, so that the annual dose from gaseous effluents should not exceed the annual Appendix I design objective by any significant amount, if at all. Purging will likely result in doses that will exceed the reporting levels of IV.A of Appendix I, but this is of no concern in view of the assurance that the purging will be within the annual design objective.

³Only .4% of the Krypton-85 decays in a way that emits gamma rays. At the concentrations in the reactor building, this would be significant to workers. After mixing with the atmosphere, it does not threaten the public health and safety.

continue to present a potential risk to public health and safety. Thus, decontaminating the containment atmosphere has an immediate and independent utility which justifies proceeding at this time,⁴ provided that the proposed method is acceptable on health and environmental grounds.

Because of the importance to the public of having a clear understanding that purging the TMI-2 containment presents a minimal risk to physical health, we review here the basis for concluding that the physical health impacts of venting Kr-85 under proper controls will be negligible. This conclusion was supported by the U.S. Environmental Protection Agency, the U.S. Department of Health and Human Services, the National Council on Radiation Protection and Measurements, the Pennsylvania Department of Environmental Resources, and the Union of Concerned Scientists. Governor Thornburgh of Pennsylvania has indicated in a letter to Chairman Ahearne, dated May 16, 1980, that he adopts the consensus that the dose rates associated with controlled purging are insignificant. Krypton-85 has no significant food pathway involvement and in 99.6 percent of its radioactive decays emits only low energy beta particles which primarily affect the skin, one of the tissues least susceptible to radiogenic concerns. The Environmental Assessment estimates that to the maximally exposed individual the risk of skin cancer "would be equivalent to spending 30 minutes in the sun. The average individual in the population would have an added risk of skin cancer equal to about a half-second of exposure to the sun's rays." NUREG-0662, p. 7-7. The total lifetime-individual cancer risk to the maximally exposed individual would be about one in sixteen million, compared to a normal lifetime expectancy of one chance in five from all types of cancer. NUREG-0662, p. 7-2.

Of course, most persons would receive a dose much smaller than the estimated maximum. The Environmental Assessment estimates that the collective offsite dose to the population within 50 miles of TMI-2 will be 0.76 and 63 person-rem for total-body and skin doses, respectively.⁵ NUREG-0662, Table 1.1. Based on these figures and on a cancer mortality risk estimate of 135 deaths per million person-rem,⁶ the Environmental Assessment finds that "[t]he cancer mortality risk among the general population within 50 miles resulting from the purge option would be about

⁴The President's Council on Environmental Quality was consulted on the staff's proposal to vent Kr-85. In a letter dated May 19, 1980, and relying on the staff's technical analysis, the Council advised "that as a matter of procedure, staff's proposal does not violate 40 CFR Section 1506.1 (1979) (limitations on actions during NEPA process) of the Council's regulations implementing the National Environmental Policy Act."

⁵At the oral briefing the staff reported that estimated total-body doses to the U.S. and world populations were about 15 person-rem and 60 person-rem respectively.

⁶This risk estimate is taken from the 1972 Report of the Committee on the Biological Effects of Ionizing Radiation, "The Effects on Populations of Exposure to Low Levels of Ionizing Radiation," National Academy of Sciences, November 1972.

0.0001." In other words, the chance that the proposed purge would cause a cancer death among the general public living within 50 miles of TMI is about one in ten thousand. Although the impacts described above apply specifically to a slow purge as originally recommended by the staff, the Environmental Assessment notes that they also apply approximately to a fast purge alternative conducted under meteorological conditions favorable for atmospheric dispersion. The staff's current recommendation calls for use of a fast purge rate if weather conditions permit. The Commission agrees with the technical staff that the physical health impact of this recommended action may be termed insignificant.⁷

Alternative methods which could reduce offsite radiation exposure still further were considered in the Environmental Assessment, including several suggestions offered by commenters on the draft assessment. These included variations of the purging method whereby the Kr-85 would be injected into the atmosphere at a higher level, either by various means of elevating the release point higher than the existing 160-foot stack or by heating the gases prior to discharge to increase its buoyancy. The staff also considered methods whereby the krypton could be captured and stored indefinitely or until the radioactivity decayed to insignificant levels (about 100 years). These methods include (1) selective absorption of krypton by a scaled-up version of a system now in operation at Oak Ridge National Laboratory, (2) absorption of large quantities of charcoal, (3) gas compression and storage in pressurized containers, and (4) extracting the Kr-85 by liquefying it through cryogenic processing. The alternatives considered appear to have varying degrees of practicality, but the staff found that none of them could be implemented in the near future or, for that matter in a time period much short of a year at the best.⁸ The controlled purging method of decontamination recommended by the staff can be implemented immediately. Since the physical health risks of the purging method are extremely small to begin with and since decontaminating the TMI-2 containment atmosphere would not be unnecessarily delayed, for reasons we have already discussed, the Commission agrees with the staff that the possibility of reducing very small physical health risks still further does not justify

⁷At the oral briefing the staff noted in answer to a question by the Commission about possible health hazards to animals that humans are generally more sensitive to radiation than other living things and that the proposed purging would clearly have no significant effect on animals.

⁸In particular, the staff investigated a suggestion that the selective absorption process could be placed into operation in six months by using equipment said to be available from the National Aeronautics and Space Administration and other sources. The suitability of this equipment turned out to be questionable, and the proposed schedule for design and procurement appeared unrealistic. The staff's minimum time estimate for making a selective absorption system operational was 16 months.

significant delay and uncertainty associated with implementing an alternative process.

Although the Commission has considered the question of psychological stress, firm conclusions on this subject are not possible. We believe that the alternative chosen will in fact minimize stress, but we have no special competence in this field. It is clear that different aspects of the TMI cleanup are sources of stress to different people. However, it is difficult for us to evaluate with precision whether choosing an alternative which would delay TMI cleanup would cause more or less stress than the controlled purging of Kr-85 which a broad consensus of scientific opinion considers safe. We are confident only that the stress will be lessened 1) by our having chosen a plan which rests on a very wide consensus that physical health is not threatened by the krypton release, 2) by having the krypton release occur over the shortest time consistent with the public health and safety, and 3) by a clear step toward cleaning up other potential sources of radiation at the damaged reactor. These three principles are part of this decision.

The Commission thus finds that decontamination of the TMI-2 containment atmosphere should be carried out promptly by the purging method recommended by the staff. Physical health impacts will be negligible, and a long-term reduction in the sources of psychological stress is expected.⁹ Thus, there is adequate assurance that public health and safety will be protected as required by the Atomic Energy Act. We agree with the conclusion of the Environmental Assessment that the proposed action will have no significant adverse effect on the environment. Accordingly, no environmental impact statement need be prepared and a negative declaration to this effect may issue. In view of the scope and detail of the Environmental Assessment and the extensive solicitation of public comment, we believe in any case that the purposes of NEPA have been served and that preparation of a formal EIS, had one been required, could not add significantly to the level of environmental consideration and public disclosure already achieved.

TMI-2 is presently being maintained pursuant to restrictions in an order issued by the Director, Office of Nuclear Reactor Regulation on February 11, 1980 requiring the licensee, Metropolitan Edison Company, to maintain the facility in accordance with the requirements of revised technical

⁹The Commission has not yet determined whether psychological stress is a health concern cognizable under the Atomic Energy Act and/or an environmental impact cognizable under NEPA. We are presently considering these issues in connection with the TMI-1 restart proceeding. *In the Matter of Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), Docket No. 50-289. In view of our finding that the proposed venting of Kr-85 is likely to have an overall beneficial effect on psychological stress, the present decision does not hinge on how the issues are finally resolved.

specifications set forth as an attachment to that order. In implementation of the Commission's Policy Statement of November 21, 1979, these specifications included the restriction that "purging or other treatment of the containment atmosphere is prohibited until approved by the NRC...." In the present order we give the approval contemplated by that restriction insofar as necessary for the licensee to conduct a purging of the TMI-2 containment, commencing no sooner than 10 days from the date of this order, in accordance with the proposal recommended by the NRC staff as presented to the Commission in the record for this proceeding. The licensee shall conduct this purging in accordance with procedures approved by the NRC, pursuant to Section 6.8.2 of proposed Appendix A to the Technical Specifications, NUREG-0432, as made binding on the licensee by the February 11, 1980 order of the Director, Office of Nuclear Reactor Regulation.

Commissioner Gilinsky concurs in the result. Commissioner Bradford's separate views are attached.

Information regarding the carrying out of this decision will be available at 717-782-4014 or 944-0418.

It is so ORDERED.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 12th day of June, 1980.

SEPARATE VIEWS OF COMMISSIONER BRADFORD

While I agree with the result and much of the reasoning in the foregoing Order, I feel compelled to note that it is misleading in three respects:

1. It states that the Union of Concerned Scientists "supported" the conclusion that the physical health impacts of venting Krypton-85 under proper controls will be negligible. The Union of Concerned Scientists did agree with that proposition, but it is disingenuous to imply that UCS agrees with the venting alternative chosen here. The UCS report to Governor Thornburgh is explicit in stating that the NRC's venting alternative should not be undertaken because other alternatives are available within what UCS views as a reasonable period of time and would reduce psychological stress. Thus, UCS should not

be listed in the Commission's statement in a fashion designed to imply that they are in accord with the NRC's action.

2. The Order states that the staff also considered methods "whereby the krypton could be captured and stored indefinitely or until the radioactivity decayed to insignificant levels (about 100 years)." In fact, as was brought out at the June 10 meeting on this subject, there would probably be no need to store the krypton for any long period of time. There is a commercial market for Krypton-85, and if an alternative to venting were chosen, the recovered krypton could probably be sold and would not need to be stored. The real argument against recovering the krypton is that the several recovery methods take too long and cost too much when weighed against the fact that venting will have no significant radiation-related public health impacts. The language suggesting that long-term storage is a serious problem should not have appeared in the staff's environmental assessment and should not appear in this Order.

3. The staff assessment of the cryogenic processing method of recovering the Krypton-85 did not deal adequately with the availability of a completed cryogenic processing system at the Hope Creek nuclear facility. This system is already completed and is on skids and could be moved easily to the site. It could certainly complete its task in less than the 20 months assigned as the minimum for a cryogenic processing alternative. However, I am persuaded that it too would be likely to take at least a year and is therefore not a reasonable alternative to the venting plan endorsed in this order.

I am astonished to have to make these points in a separate opinion, but the Commission has declined to include them in the body of the Order.

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

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

In the Matter of**Docket No. 50-320**

**METROPOLITAN EDISON
COMPANY, et al.**
**(Three Mile Island Nuclear
Station, Unit 2)**

June 26, 1980

The Commission denies a motion to reconsider its decision in CLI-80-25 to authorize the purging of the atmosphere within the TMI-2 reactor building.

ORDER DENYING MOTION FOR RECONSIDERATION OF CLI-80-25 AND ORDER FOR TEMPORARY MODIFICATION OF LICENSE

On June 12, 1980, the Commission issued a Memorandum and Order, CLI-80-25, which approved purging of the TMI-2 reactor building atmosphere as proposed by the NRC staff. The staff's proposal was described in detail in the "Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," NUREG-0662, May 1980. This purging can be carried out in such a manner (a "slow purge") that the release of radioactive effluents, primarily krypton-85, will lie within the limits allowed by the technical specifications which are part of the TMI-2 operating license. A faster rate of purging is advantageous, however, for reasons discussed in the Memorandum and Order. To permit a faster purge the Commission issued an accompanying Order for Temporary Modification of License, which temporarily imposed dose limits in place of the noble gas instantaneous and quarterly activity

release limits contained in the TMI-2 technical specifications.¹ Purging of the TMI-2 containment is presently expected to begin on June 28, 1980.

The Commission received on June 23, 1980 a "Joint Motion for Reconsideration of CLI-80-25 and Order for Temporary Modification of License," submitted by Steven C. Sholly, the Newberry Township Three Mile Island Steering Committee, and People Against Nuclear Energy ("PANE"). The Commission has also received a study entitled "Radiation Exposure due to Venting TMI-2 Reactor Building Atmosphere," prepared by Bernd Franke and Dieter Teufel of the Institute for Energy and Environmental Research, Heidelberg, West Germany, for the Three Mile Island Legal Fund, and dated June 12, 1980. The Franke/Teufel study, which arrived too late to be included in the administrative record for the Memorandum and Order,² takes issue with the Commission's conclusion, otherwise widely supported, that the physical health impacts of purging the TMI-2 containment as proposed will be negligible. This study is cited in the Joint Motion as evidence of the need for the Commission to reconsider its decision to permit purging. In view of the importance to the public of having accurate information on the health risks of purging, the Commission believes it desirable in the short period the purging begins to make a prompt, though necessarily brief response to the Franke/Teufel study as well as to the motion for reconsideration.

Accordingly, we are attaching to this order a review of the Franke/Teufel study prepared by the NRC technical staff. The staff's review confirms that *all* radionuclides potentially in the containment atmosphere, not just krypton-85, were considered by the staff in its assessment of the environmental impacts of purging the TMI-2 reactor building. Radionuclides other than krypton-85 will not contribute significantly to offsite doses from purging. As the staff's review explains in detail, the Franke/Teufel study erred by selecting a single erroneously calibrated measurement of the radionuclide concentrations in the containment. This measurement was clearly inconsistent with previously and subsequently

¹For the period of the purge the modified license will control releases of radioactive gases to the atmosphere by limits on the radiological dose which can result from such releases, in particular by requirements that doses to maximally exposed individuals as a result of purging not exceed 15 mrem skin dose, 5 mrem total body dose, or 20% of either of those limits over any one-hour period. These offsite dose limits are in effect equivalent to the objectives set out in 10 CFR Part 50 Appendix I, which implement the Commission's policy that radiation doses from nuclear power plants shall be kept "as low as reasonably achievable" ("ALARA"). The Commission's Order for Temporary Modification of License thus aimed at achieving the same level of health protection intended by the superseded release limits while at the same time permitting a rapid completion of the purging process.

²The Commission received a very brief handwritten summary of the conclusions of this study on June 5, 1980 but was not given the full report until June 16, 1980.

measured radionuclide concentrations and gave values too large by factors of ten thousand to ten million. The corresponding dose calculations made by the Franke/Teufel study are thus gross overestimates. Furthermore, the study's concern about meteorological uncertainties and possible inadequacy of monitoring appear to reflect unawareness or misunderstanding of how the purging program is to be carried out. In sum, the Commission has found that the Franke/Teufel study provides no reason to modify the conclusion that the proposed venting of the TMI-2 reactor building involves negligible impacts on physical health.

Turning now to the motion for reconsideration, we find that the discussion above deals adequately with the first reason offered for reconsideration, that "[t]he Orders do not consider in any detail the possible presence of radionuclides other than Krypton-85 in the TMI-2 containment atmosphere." The environmental assessment, as well as the staff's review of the Frank/Teufel report, confirm that krypton-85 is by far the dominant radionuclide. In any event, it should be noted that the purging will be conducted so that the dose limits established by the Commission's Order for Temporary Modification of License will not be exceeded. A continual monitoring of release activity levels and meteorological conditions will be conducted to assure that this requirement is met. Thus if radionuclide concentrations should exceed presently expected values, this fact would become quickly apparent and releases would be controlled or, if necessary, stopped so that doses will remain within the allowable limits.

The Joint Motion criticized what it terms a "radiological assessment" of the health risks of venting as distinct from a "public health assessment" by "public health professionals." The joint petitioners also appended to their motion a letter from Irwin Bross of the Roswell Park Memorial Institute, Buffalo, New York, to the effect that the genetic damage and cancer risk estimates used by the Commission in assessing the risk of krypton venting are out of date and far too low. The short answer to the joint petitioners' concern about the Commission's assessment that purging presents no significant physical health risks is that there was broad agreement with this assessment by groups with expertise oriented toward protection of public health, including the National Council on Radiation Protection and Measurements, the U.S. Department of Health and Human Services, and the Pennsylvania Department of Health and Public Welfare. The controversial views of Dr. Bross regarding radiation health risks are known to the Commission from previous occasions. To the extent that Dr. Bross would conclude that purging the TMI-2 containment involves a significant physical health risk, his views are clearly at odds with the spectrum of scientific opinion cited here and in the Commission's Memorandum and Order in support of the contrary conclusion.

The Commission thus finds that the Joint Motion presents no reason to alter the Commission's key determination that the proposed purging of the TMI-2 containment will have a negligible impact on physical health. The benefits of prompt purging were discussed at length in the Memorandum and Order. To risk these benefits by selecting an alternative process, which necessarily would involve significant delay and uncertainty, in order to reduce already negligible radiological impacts still further does not strike the Commission as reasonable. Accordingly, the Commission finds the proposed purging entirely consistent with the ALARA principle of keeping radiation exposure "as low as reasonably achievable."

The Joint Motion also urged that the psychological aspects of purging "should be examined more closely" but cited no evidence to contradict the Commission's belief that prompt purging will remove a significant source of psychological stress related to the presence of the disabled TMI-2 facility. The Commission has admitted its lack of expertise in psychology and recognizes that more review and study might further clarify the situation with respect to psychological stress at TMI-2. We remain confident, however, that stress is likely to be minimized by proceeding promptly with a plan that poses no threat to physical health. The Joint Motion offers no reason to believe that further study would change that conclusion. Accordingly, we are not persuaded that purging should be delayed for further examination of psychological stress.

Finally, the Joint Motion criticized our finding that the temporary license modification involves "no significant hazards consideration" and therefore may be made immediately effective. We believe the joint petitioners have misunderstood the scope of this finding, which pertains only to the question whether changing the TMI-2 technical specifications from release limits to dose limits involves a significant hazards consideration. The dose limits aim at achieving the same level of protection of public health and safety³ and, in fact, do so more directly, since it is the associated doses rather than the radioactive releases themselves which are the focus of concern. Accordingly, the Commission reaffirms its determination that the temporary license modification involves no significant hazards consideration and may therefore be made effective immediately.

With regard to purging itself, the unmodified technical specifications which allow for purging were adopted as part of the licensing proceeding for TMI-2 after full opportunity for a public hearing. There has been extensive public participation in the purging decision through public meetings and comments on the environmental assessment. There has thus

³See note 1 above.

been ample opportunity for members of the public to raise any issue which might have been brought up in an adjudicatory hearing and to present evidence contradictory to the positions of the NRC staff or Metropolitan Edison. The joint petitioners complain that there has been no public hearing specifically devoted to purging, but they have not indicated that any relevant evidence exists which they have somehow been prevented from bringing to the Commission's attention. Accordingly, since the procedure by which the Commission's orders were developed met the requirements of the Atomic Energy Act and have provided for a thorough consideration of the issues, we reject the suggestion that these orders should be withdrawn on procedural grounds.

For the reasons discussed above, the Commission denies the motion for reconsideration of CLI-80-25 and Order for Temporary Modification of License.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, DC,
this 26th of June 1980.

**REPORT BY THE INSTITUTE FOR ENERGY AND
ENVIRONMENTAL RESEARCH HEIDELBERG, FEDERAL
REPUBLIC OF GERMANY**

The NRC staff has made a preliminary review of the findings presented in the report titled "Radiation Exposure Due to Venting TMI-2 Reactor Building Atmosphere" submitted by the Institute for Energy and Environmental Research, dated June 12, 1980. The staff believes that the major conclusions of this report are in error and misleading, primarily because they are based on a highly inflated estimate of the maximum rate at which radionuclides will be released during the venting and an apparent lack of understanding of how the venting will be carried out and controlled.

Heidelberg Finding No. 1

Previous discussion of the venting of radioactive gases from TMI-2 has concerned only the noble gas krypton-85. Besides krypton 85, the atmosphere of the reactor building includes a great number of other radionuclides, some of which would be released into the environment during the blow off of the gases. This could lead to radiation exposures significantly higher than those caused by krypton-85. The most important radionuclides, which have not been sufficiently considered so far include: C 14, Co 60, Sr 89, Sr 90, Ru 106, Cs 134, Cs 137, Pu 239, Pu 241 and others. Even allowing for high filter efficiency, a model calculation for only three of these nuclides showed that population doses would be high enough to cause about three additional cancer cases and an equivalent amount of genetical damage.

Staff Comment

The NRC staff's analysis (NUREG-0662) of the environmental impacts associated with purging the TMI-2 reactor building atmosphere is based on consideration of *all* radionuclides including noble gases, transuranics, tritium, cesiums and cobalts and other particulates. Air samples are periodically collected and analysed to identify all measurable forms of radioactivity. The dominant and controlling radionuclide is Kr-85. Relative to Kr-85, all other radionuclides in the reactor building atmosphere are insignificant contributors to calculated offsite doses from a postulated purge.

The reactor building particulate samples taken during January through April of this year indicated Cs-137 concentrations ranging from 1.2×10^{-8} to 2.7×10^{-10} uCi/cc. The particulates Co-58, Co-60, Cs-134, Sr-89, and Sr-90 were measured at levels on the order of 10^{-10} to 10^{-11} uCi/cc or were below minimum detectable levels ($\sim 10^{-10}$ uCi/cc) for the instrumentation. Gross measurements of samples of the reactor building atmosphere taken in April of this year indicate transuranic concentrations no higher than 2.0×10^{-10} uCi/cc. It should also be

noted that, during the postulated purge, the reactor building atmosphere will be passed through HEPA filters with a measured filtration efficiency of at least 99.97%.

The Heidelberg group based its particulate source term (primarily Co-60 and Cs-137), and the resulting dose calculations and health effects predictions, on the highest reported values for the concentrations of these isotopes, ignoring a number of other values listed on the same table (Table 2.1 of the Met Ed reference). Unfortunately, these single highest values, which were a factor of 10^4 to 10^7 higher than other reported values, were erroneous. Particulate concentrations are determined by measuring the total radioactivity in a sample of air passed through the particulate sampler, and then dividing by the sample volume. In the case of the erroneous values, Met Ed personnel failed to record the sample volume. (Volumes typically were 10^4 to 10^7) A volume of 1 cc was arbitrarily assumed by the licensee yielding artificially high concentrations of Cs-137 and Co-60 (1.4×10^{-2} and $7.9 \mu\text{Ci/cc}$, respectively). This resulted in calculated dose values which are a million too high for these isotopes.

It is unfortunate that these erroneous values were reported. Nevertheless, the NRC staff believes that the Heidelberg group used poor judgment in using these values and ignoring the many other, lower values available to it. In estimating potential exposures and doses, it is properly conservative to use the highest reasonable source term. However, it is unreasonable to use a single value or set of values when the numerous other reported values, determined both before and after the highest values are consistently so much lower.

Additionally, the Heidelberg group ignored the staff's discussion of the most recent reactor building sample data (i.e., sample data through February 1980) which was available to them in the staff's draft Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere NUREG-0662 (March 1980). This discussion (see Section 5.0, Reactor Building Airborne Activity) indicates that the latest particulate activity levels are on the order of $1 \times 10^{-9} \mu\text{Ci/cc}$.

Finally, since the Heidelberg dose calculations are based on a fallacious source term, they, too, are fallacious.

Heidelberg Finding No. 2

Uncertainties inherent in the meteorological models and dose calculations mean that it is impossible to exclude that in the proposed purge program individual skin doses due to krypton-85 could exceed the 10 mrem limit.

Staff Comment

The Heidelberg group's assertions regarding the uncertainty of predicting dose from meteorological dispersion characteristics at TMI are compensated for by the conservatisms incorporated in the actual purge conditions. Purging the reactor building atmosphere at TMI will be carried out using real-time meteorological measurements, containment atmosphere sampling, radiological effluent measurements, and an elaborate environmental monitoring program. Operators will control the release rate, and hence the dose rate, based on actual meteorological conditions and these other measurements. Purging would be stopped at any time that these combinations of measurements and calculations indicate possible dose values that begin to approach limiting values which themselves are well below the imposed release limits.

Thus the Heidelberg group's statement (at 11 of the June 12, 1980 report) that, given releases of Kr-85 during unfavorable meteorological conditions, "skin doses could reach 320 mrem at a distance of 0.5 miles from the stack," is incorrect and appears to have been made without knowledge of how the purging will actually be carried out.

Purging the TMI reactor building atmosphere will be *monitored* and *controlled* to assure that the dose limits specified by the Commission are not even closely approached, thus accommodating the discussed uncertainties.

Heidelberg Finding No. 3

Estimates of health damage should consider not only regional but also global population doses which are an indication of all health effects caused by the release of radioactivity. Both can be estimated only with great uncertainty. The dose effect relation is subject to wide scientific discussion. We cannot exclude that venting Krypton-85 alone could cause at least one additional cancer case (probably skin cancer) plus one case of genetic damage within the next century. However, nothing is known about a potential synergism between krypton-85 beta and ultraviolet radiation.

The results calculated in NUREG-0662 do not exclude the possibility of one cancer case in the world population within the next 100 years as a result of purging. The staff has used the most widely recognized radiation risk estimates to determine the probability of cancer or genetic effects in the 50 mile population surrounding TMI as a result of purging. The average risk of radiation induced fatal cancer to individuals in the 50 mile TMI population was estimated to be 5 chances in 100 billion. Within the world's population, the average risk to individuals, because of further Kr-85 dilution in the earth's atmosphere, would be even smaller than the already negligible risk

to people within 50 miles of TMI. The global collective dose of 100 person-rem whole body dose due to Kr-85 (in the Heidelberg estimate) is minute compared to the annual global background radiation dose of 300 million person-rem. It should be noted that several independent organizations, including the National Council on Radiation Protection and Measurements, the Environmental Protection Agency, the Department of Health and Human Services, and the Union of concerned Scientists, have also concluded that purging would result in negligible public health risks. Because of the conservatism to be used in controlling and limiting doses, even a possible synergism between beta radiation and ultraviolet radiation in skin cancer induction would not be expected to change the health effects picture markedly.

Heidelberg Finding No. 4

The environmental monitoring program cannot insure that all significant radiation doses to the community as a result of decontamination of the atmosphere of the TMI-2 reactor building atmosphere will be detected. Most measurements are not frequent enough and are not made at all in some important localities. Important pathways and radionuclides are neglected.

Staff Comment

The environmental monitoring program for the postulated reactor building purge is one of the most comprehensive programs ever developed for monitoring gaseous effluents from a domestic commercial nuclear power plant. The program incorporates the expertise and resources of the EPA, DOE, NRC, State of Pennsylvania (including trained community monitors), and the licensee. The program includes the availability of 6 mobile (3 EPA and 3 licensee) monitoring units as well as the DOE Atmospheric Release Advisory Capacity (ARAC) which will provide independent predictions of the dispersion patterns of the krypton gas. A detailed description of the monitoring program is contained in Section 8.0 of NUREG-0662 (final report, May 1980) including the number and type of radiation monitoring and sampling devices, their frequency of analysis, and the location of the measurements. An even more detailed report is given in the EPA report, "Long-Term Environmental Radiation Surveillance Plan for Three Mile Island," March 17, 1980. From the comments in the Heidelberg finding and in the body of their report, it is apparent that they had considered neither the EPA report nor the final NUREG-0662. Most, if not all of the Heidelberg group's comments and criticisms are addressed in those two reports.

The radiological environmental monitoring program will be supplemented by direct measurement via the stack monitor of all gaseous radioactive materials discharged during the purge as well as real time meteorological dispersion measurements (taken at least hourly) from the onsite meteorological tower. Additionally, the reactor building atmosphere will be periodically sampled during the conduct of the purge to verify the releases measured directly by the stack monitor. In order to verify that no significant amounts of radionuclides other than Kr-85 are released to the environment during purging, samples from the established network of eighteen operating stations will continue to be collected. Samples in the downwind sector will be collected every day, rather than the three times per week under normal conditions. In addition at least one sample from "control" stations in each quadrant not in the downwind trajectory will be collected and analyzed on a daily basis.

Heidelberg Finding No. 5

As considerable health damage could be caused by venting the atmosphere of the TMI-2 reactor building, we strongly advise against this procedure. The report of the Union of Concerned Scientists concludes that decontamination is not as urgent as stated by Met Ed and NRC. Therefore, we strongly recommend that the alternative methods for decontamination proposed by UCS and Prof. Morgan be used.

Staff Comment

The NRC staff disagrees that purging the TMI-2 reactor building atmosphere could result in "considerable health damage." NUREG-0662, "Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," provides an extensive technical basis for the NRC staff's recommendation to purge the reactor building atmosphere.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS

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

In the Matter of

Docket No. 70-143
SNM License No. 124

**NUCLEAR FUEL SERVICES,
INCORPORATED**
(Erwin, Tennessee)

June 26, 1980

In response to a request filed by the Natural Resources Defense Council for a hearing on a proposed license amendment that would require new and revised material control and accounting and physical security measures at the licensee's Erwin, Tennessee, plant, the Commission orders the conduct of a legislative type hearing, over which it will, itself, preside, to consider:

(1) whether the proposed amendment should be sustained; and (2) if not, whether the existing license should be revoked, recognizing that the consequence may be operation of the Erwin facility as an unlicensed activity of the Department of Energy or Defense.

**RULES OF PRACTICE: ADJUDICATIONS INVOLVING
MILITARY OR FOREIGN AFFAIRS FUNCTIONS**

Under the Administrative Procedure Act, 5 USC 554 (a)(4), and Commission Rules of Practice, 10 CFR 2.700a, procedures other than those for formal evidentiary hearings may be fashioned when an adjudication involves the conduct of military or foreign affairs functions.

COMMISSION PROCEEDINGS: ADJUDICATIONS INVOLVING MILITARY OR FOREIGN AFFAIRS FUNCTIONS

In adjudications of licenses involving military functions, the Commission's choice of a procedural framework may be guided by the need to protect sensitive subject matter and the importance of retaining in the Commission direct control of decisions that are highly dominated by both regulatory and national defense policy considerations.

MEMORANDUM AND ORDER

On January 21, 1980 Robert F. Burnett, Director, Division of Safeguards, Office of Nuclear Material Safety and Safeguards, issued an order¹ which (A) provided notice of a proposed amendment to the Nuclear Fuel Services (NFS) License No. SNM-124 that would require new and revised material control and accounting and physical security measures at the NFS facility located at Erwin, Tennessee, and (B) directed the licensee to comply with the terms of those new and revised material control and accounting and physical security measures effective immediately and authorized the resumption of production at the facility after confirmation by NRC that the new requirements had been implemented. At that time it was noted that the new limits for reinventory were less restrictive than the former limits but were considered to be representative of the level reasonably achievable for the process.

The Commission provided that within 20 days any person whose interest may be affected could request a hearing on (A) or (B) or both. It stated that in the event a hearing was granted the issues to be considered would be:

- (a) Whether the circumstances as described in the order exist;
- (b) Whether on the basis of those circumstances the amendment should be sustained.

On February 6, 1980, Natural Resources Defense Council (NRDC) lodged its Request for Hearing (Request) with the Commission. Service on other interested persons was delayed several days to accommodate classification review.

¹The order is attached as Appendix A.

By letter of February 21, 1980 NFS has, among other things, stated that it was reserving its right to participate as a party and/or object to NRDC participation if the Commission commences any proceeding in this matter.²

Grant of a Hearing

The Commission has decided to grant a hearing to provide petitioners an opportunity to address the issues set forth in the order of January 21, 1980. In addition the Commission has decided to include within that hearing the issues of whether the license for the NFS Erwin plant should be revoked and whether the operation should continue, if at all, as an unlicensed activity of the Department of Energy or Defense.

Nature of the Hearing

Having determined to grant NRDC's request for a hearing we turn to the important subject of the nature of the hearing to be held.

The NFS Erwin license authorizes the possession and use of weapons grade highly enriched uranium for fabrication of nuclear fuel for United States naval reactors used in the national defense. The unusual nature of this licensed activity has given rise to two special considerations not ordinarily presented by a hearing request. First is the need to protect the highly sensitive subject matter of the licensed activity. Second is the importance of retaining in the Commission direct control of decisions that are highly dominated by both regulatory and national defense policy considerations. These two special considerations are apparent when one considers that the January 21, 1980 order was based, in large part, on the need to accommodate the commission safeguards regulatory program, developed for the safeguarding of non-military activities, to the particular needs of the U.S. Navy for a reliable supplier of naval reactor fuel.

²On March 3, 1980, the Commission received an undated letter postmarked February 20 from Gwen McKinney, Community Development Director, Jonesboro, Tennessee, in which she requested that the Commission hold a hearing on the NFS Erwin matter. It is unclear whether Ms. McKinney is requesting that a formal hearing be held in which she would participate as a party or solely that some form of hearing be held by the Commission to ventilate publicly the entire NFS Erwin matter. In light of the Commission's decision on the nature of the hearing it will provide Ms. McKinney will be served with a copy of this Memorandum and Order and related Notice of Hearing and invited to participate.

The Commission has decided therefore to avail itself of the exception of the Administrative Procedure Act (APA), 5 U.S.C. 554(a)(4), and 10 CFR 2.700a³ that permits fashioning of procedures other than those for formal evidentiary hearings when an adjudication involves the conduct of a military function. The Commission believes that the classified processes of production of essential nuclear fuel for naval submarines that is uniquely performed at NFS Erwin is a military function, and that the contemplated hearing therefore qualifies for this exception. The Commission contemplates holding a legislative type hearing with the Commission itself presiding and rendering the decision. Such an informal procedural framework is believed to be best suited to consideration of sensitive military functions and the resolution of policy issues only the Commission itself can resolve.⁴

An appropriate Notice of Hearing is enclosed as Appendix B to this Memorandum and Order.

Commissioners Gilinsky and Bradford dissent from this order. Their separate views are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 26th day of June 1980.

³On June 26, 1980 the Commission promulgated an immediately effective rule amending its rules of procedure to include a new section 10 CFR 2.700a. That section exempts proceedings involving military and foreign affairs functions from Subpart G requirements for hearings. The rule change brings NRC rules into conformity with the APA in this regard.

⁴The use of the military function exception here makes it unnecessary for the Commission to address specifically the question whether section 189a of the Atomic Energy Act requires formal adjudicatory hearings in materials licensing cases as opposed to cases involving facilities, such as reactors. However the Commission notes that, as far as it is aware, there is no decision which holds that such hearings are required, at least in cases such as this dominated by regulatory and national defense policy issues.

APPENDIX A

I

Nuclear Fuel Services, Incorporated (NFS) located at Erwin, Tennessee, is authorized to possess and use uranium enriched in the U-235 isotope under SNM License No. 124 issued pursuant to 10 CFR Part 70. The licensee is also subject to material control and accounting and physical security regulations in 10 CFR Parts 70 and 73. Amendment MPP-1 to its license contains specific license conditions for procedures to be followed for the safeguarding of special nuclear material pursuant to the regulations.

II

A highly enriched uranium material balance for the period ending August 14, 1979 resulted in an Inventory Difference (ID) in excess of the amount specified in Amendment MPP-1, License Condition 2.10.1 for plant shutdown. Following the report of the ID on September 17, 1979, the plant was shut down for investigation of the Inventory Difference and for reinventory.

In addition, various investigations were conducted by the NRC, DOE, and FBI. The October 4, 1979 reinventory and the remeasurement activities conducted during November 1979 did not fully resolve the initial Inventory Difference.

While the investigation did not identify the cause(s) of the Inventory Difference, the investigation has fully taken into account bookkeeping errors, uncertainty due to the measurement system, significant biases in the assigned value of the SNM on inventory, and overlooked SNM on inventory or in holdup as probable explanations. The investigation has not eliminated the possibility of an innocent or malevolent undiscovered discharge to the environment, diversion, or theft.

Considering the above information, and the national defense needs for naval fuel, the NRC has determined that the NFS highly enriched uranium plant may only operate after the licensee has implemented the new and revised material control and accounting and physical security requirements contained in Attachments A and B to this Order.¹ The NRC believes that the additional requirements will provide for improvement in the present accounting system and for upgrading the physical protection and internal

¹Attachments A and B are available for inspection in the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C.

control systems, especially against collusive acts, and for further control of the areas of concern that remain unresolved as noted above. It should be noted that the new limits for reinventory are less restrictive than the present limits, but are considered to be representative of the level reasonably achievable for the process.

III

A. Accordingly, notice is hereby given that it is proposed to amend your license to include the conditions as contained in the 11 page document titled "NFS-Erwin — Docket 70-143 — New and Revised Conditions to Amendment MPP-1 to License No. SNM-124, Effective January 21, 1980" and labeled "Attachment A", and in the 10 page document of the same title, but labeled "Attachment B".

Within 20 days of the date of this Order the licensee and any other person whose interest may be affected may request a hearing with regard to this proposed amendment. If a hearing is requested, the amendment will not be issued until after completion of the hearing or other disposition of the proceeding. In the event such a hearing is requested, the issues to be considered at such hearing shall be:

- (a) Whether the circumstances described in Section II exist.
- (b) Whether on the basis of those circumstances the amendment should be sustained.

Any request for a hearing with regard to the amendment will not operate to stay the effectiveness of Part B of this Order. Any hearing requested under Part A of this Order will be consolidated with any hearing requested under Part B of this Order.

B. The Director of the Division of Safeguards has also determined pursuant to Sections 161b. and i. of the Atomic Energy Act of 1954, as amended, and the Commission's Rules and Regulations in 10 CFR Parts 2 and 70, because of the need for improved safeguards as described above and the national defense needs for naval fuel, that effective immediately (1) the licensee must comply with the conditions as contained in the proposed amendments described in (A) above, and (2) the licensee may operate the HEU plant after confirmation by NRC that the conditions in (1) are implemented. The licensee and any person whose interest may be affected may request a hearing with respect to (1) and (2) above within twenty days of the date of this Order. In the event such a hearing is requested, the issues to be considered at such hearing shall be:

- (a) Whether the circumstances described in Section II exist.

(b) Whether on the basis of those circumstances this Order should be sustained.

Any request for a hearing with regard to (1) and (2) above will not stay the immediate effectiveness of Part B of this Order. Any hearing requested under Part B of this Order will be consolidated with any hearing requested under Part A of this Order.

**FOR THE NUCLEAR
REGULATORY COMMISSION**

**Robert F. Burnett, Director
Division of Safeguards
Office of Nuclear Material Safety
and Safeguards**

**Dated at Silver Spring, Maryland
this 31st day of January 1980.**

APPENDIX B

NOTICE OF HEARING

The Commission has granted a hearing in this matter in response to the February 6, 1980 request of Natural Resources Defense Council (NRDC), and has specified that such hearing will be legislative in nature. *See In the Matter of Nuclear Fuel Services, Inc.*, Docket No. 70-143, Order, June 26, 1980.

Issues

The issues to be decided in the hearing are:

- (a) Whether the circumstances as described in the January 21, 1980 Order exist;
- (b) Whether on the basis of those circumstances the amendment to NFS's license No. SNM-124 should be sustained; and
- (c) Whether, if it is decided that the amendment should not be sustained, the NFS license should be revoked recognizing that the consequence of revocation may be operation of the NFS Erwin facility as an unlicensed activity.

Presiding Officer

The Commission itself will preside over the hearing and render the decision.

Procedures

The Commission has decided that the matter should be resolved on the basis of written presentations addressed to the Commission and an oral hearing at which the Commission will question the parties and hear argument. There shall be no discovery or cross-examination; however, the Commission will entertain written suggestions from the parties for questions to be posed at the hearing. In preparing their presentations, the parties should consider the January 21, 1980 Order and NRDC's February 6, 1980 Request for a Hearing (unclassified version) as already part of the record.

Schedule

The following schedule will govern the hearing:

By September 1, 1980 each party should submit to the Commission and serve on all other parties written testimony on the above issues, including any factual and legal arguments it may wish to make.

By September 15 each party may submit to the Commission and serve on all other parties written suggestions for questions that the Commission may pose to the parties in oral session.

Between October 15 and November 1, at a time to be announced by subsequent order, the Commission will preside over an oral session at which it will question the parties and hear oral argument. The subsequent order will detail the procedures, including time allotments, for the oral session.

Within 3 weeks from the date of the oral session, each party may submit to the Commission and serve on all other parties a final summary rebuttal and statement of position.

Parties

The parties to this hearing shall be the NRDC, the NRC Staff and, if they request, NFS, Ms. Gwen McKinney, and the Departments of Defense and Energy.

Answer

The parties, as well as NFS, Ms. McKinney and the Departments of Defense and Energy, if they wish to be parties, shall file an answer to the Notice of Hearing by July 14, 1980. The answers should indicate whether the party plans to participate and the person upon whom service should be made.

June 26, 1980

Commissioner Gilinsky's Dissent — SECY-A-80-41A and SECY-A-80-82A

I do not believe that the provisions of the Administrative Procedures Act permit the Commission to amend its adjudicatory regulations in a manner which affects the substantive rights of the parties without providing notice and an opportunity for comment.

It is worth recalling what this case is about. The NFS Erwin facility was unable to meet the NRC requirements regarding material accounting of potential bomb material. There is little question that if this had been a commercial facility, its license would have been revoked. This was the

course of action which the NRC staff recommended. Because the operations of this facility are dictated ultimately by the needs of the Navy, irrespective of whether or not the facility meets NRC requirements, the NRC staff suggested that responsibility for its oversight be transferred to the Assistant Secretary for Defense Programs, Department of Energy. I agreed; the Commission decided on another course. It relaxed the applicable material accounting requirements to a level the facility is apparently able to meet, and thus continued nominal oversight of this facility.

The lengths to which the Commission is now prepared to go to prevent public examination of this decision confirms my belief that my original view was correct. Since authority over the operation of the Facility rests, as a practical matter, with the Department of Energy, responsibility for keeping track of the material should also rest with that Department.

DISSENT OF COMMISSIONER BRADFORD

Today's decisions in this matter are dishonorable and disgraceful. They leave one wondering just where the Commission would stop in its efforts to avoid public scrutiny. In order to rush them out while majority could still be had for such clumsy squirming, the Commission has had to trample its own rules of procedure.¹ A major side effect of the Commission's decision is to confirm the concern expressed by Commissioner Gilinsky when the Nuclear Regulatory Commission decided to retain jurisdiction over the Erwin facility in December 1979. It is now clear that that decision did not mean, as I then thought in joining the majority, that serious regulation would continue at Erwin. Instead, the Commission was seeking to extend whatever credibility it possessed to cover the facility's inability to keep adequate track of special nuclear material while avoiding any substantive or procedural regulatory action that might inconvenience or embarrass the facility operators or the Department of Energy.

¹The agency's rules provide for an automatic five-day extension of time upon the request of any Commissioner before a vote on any item. They also provide that a majority of the Commission may change the rules at will. The decision to disregard agency legal advice was agreed to by three Commissioners on June 23. An extension having been requested on June 24, the Commission for the first time in its history voted to instruct the Secretary not to grant it. This was done despite the fact that decisions on other matters of major importance have been forthcoming throughout the week and that both June 25 and June 26 were entirely taken up with Commission meetings on other matters.

There are three decisions involved here. The basic one is the Commission decision to renege on its earlier offer of a full adjudicatory hearing on the Erwin facility to the Natural Resources Defense Council. The hearing offered in January 1980 was clearly adjudicatory, with discovery and cross-examination, for the Commission rules at that time provided for no other format in a case like this.² It is this difficulty in the rules that has led the majority to its second decision, namely the promulgation of a rule stating that "consistent with due process requirements, the Commission may provide alternative procedures in adjudication to the extent that there is involved the conduct of military or foreign affairs functions." The third decision, made in the face of irreconcilable advice from every respectable legal office in the agency,³ was to make this rule immediately effective

²Contrary to the Commission claim in the supplementary information section that the proposed rule clarifies existing authority, the General Counsel advised the Agency, "Current NRC rules require formal hearings in all cases of agency adjudication, and the offer of a hearing in this case was no doubt construed—quite reasonably—as an offer of a formal hearing." (General Counsel's memorandum of May 16, 1980, page 2.) In fact, there is no ambiguity here to clarify. NRC has in past not made use of the military or foreign affairs exceptions provided in the APA in the context of Section 189 even when this argument might have been made. The regulations and many years of practice make clear that a party requesting a hearing in a license amendment matter is entitled to an on-the-record adjudicatory hearing. If the Commission entertained doubt on this point, it would not be risking court reversal by promulgating this rule on an immediately effective basis.

The only past indication of a different sort appears in *In the Matter of Edlow International*, 3NRC 563 (1976). There, the Commission conceded that a hearing of right would have to be "adjudicatory or trial-type," "subject to appropriate modifications made in accordance with the [APA's] 'foreign policy' exception (at 570)." The Commission then denied standing and granted a discretionary hearing very like the one offered here, pointing out that, if standing had been found, a more formal hearing would have been in order. Since the Commission did not put its dictum regarding the APA exceptions into practice, it never made clear why it would concede that an adjudicatory hearing was required despite the exceptions while still feeling that the military or foreign affairs exception was available to modify that hearing.

³SECY-A-80-41 — "NRDC's Request for a Hearing in the Matter of NFS-Erwin" (March 27, 1980).

SECY-A-80-82 — "SECY-A-80-41, NRDC's Request for a Hearing in the Matter of NFS-Erwin — Draft Federal Register Notice Proposing a Rule Change" (June 11, 1980).

Memorandum to the Commission from Leonard Bickwit, "SECY-A-80-41 Analysis of the Requirement for an Adjudicatory Hearing and Discussion of Alternatives" (May 16, 1980). Advice to the contrary in this paper was explicitly rescinded in SECY-A-80-82.

Memorandum to the Commission from Leonard Bickwit, Jr., General Counsel, "SECY-A-80-82 — Rule Change to Take Advantage of the Military Function Exception — Immediate Effectiveness" (June 16, 1980).

Memorandum to Chairman Ahearne from Howard K. Shapar, Executive Legal Director, "Prior Notice Requirement for Rule Change" (June 19, 1980).

through yet a second reliance on a military functions exception in the Administrative Procedure Act. It is dubious enough to have stated that the regulation of the Erwin facility involves a clear military function, for neither regulation nor the loss of special nuclear material are within the functions normally performed by the military and none of the people involved are employees of the military. However, the dubiousness of this action pales beside the absolutely preposterous claim that the promulgation of a Nuclear Regulatory Commission rule regarding military functions itself involves the conduct of military affairs.⁴ Even the Department of Defense, which might attempt such a claim regarding its rules, chooses instead to offer notice and comment. Throughout the entire span of the Federal Government, I venture with some confidence to say that only the three would-be colonels who are voting for today's action have ever tried such a deception as to what might be a military function.

By making this rule change immediately effective, the Commission has violated the Administrative Procedure Act.⁵ The Commission states three bases for its action: 1) the rule involves a military function; 2) the rule is interpretative; and 3) it is a rule of agency procedure. Each reason is far from the truth. As already noted, there is no military function in the promulgating of a change in the Commission's rules of practice or in eliminating public comment on the change. In addition, it is clear from the legislative history of the Administrative Procedure Act that this exception was only meant to apply "to the extent" a military function is "clearly and directly" or "directly involved."⁶ It is also clear, as already noted, that this is not an interpretative rule, for it creates two new types of hearing categories that are not currently provided for in the NRC's regulations. Finally, it is clear that this is not a truly procedural rule, for it is no mechanistic prescription of the form of agency practice. This Commission has previously recognized that the rights of parties to adjudicatory hearings,

⁴The difference between putting the proposed change out for comment and enacting it immediately is *entirely* that Commissioner Kennedy's term would expire during the comment period, and the present majority has reason to doubt that a new appointee would join their charade. No armies will march; no navies will sail; no planes will fly as a result of this rule being made immediately effective instead of being put out for comment. Not one iota more or less fuel will be fabricated for the Navy. Nothing remotely resembling a military function will occur. All that will happen is that a civilian commissioner's civilian term on this all-civilian agency will not end before he casts his civilian vote for a change in the agency's civilian rules of practice.

⁵U.S.C. 553.

⁶Senate Committee on the Judiciary, Administrative Procedure Act: Legislative History, S. Doc. No. 248, 79th Cong., 2d Sess. 199, 257 (1947).

including the rights to cross-examination are substantial.⁷ Furthermore, new procedural rules cannot be applied to pending proceedings if a party will be injured or prejudiced thereby.⁸

Lastly, there is the question of whether an adjudicatory hearing is in order here. The NRDC petition makes a number of factual allegations regarding the sufficiency of NRC security and accounting procedures at Erwin, a facility shut down last year precisely because it had lost track of significant quantities of special nuclear material. Judgments about the adequacy of the revised NRC procedures are not broad policy decisions. They cannot be made without detailed factual findings of precisely the sort best aided by discovery and cross-examination.⁹

Needless to say, classified information can be protected as necessary in any proceeding.¹⁰ The presiding officer(s) can avoid any dilatory tactics or abuses of procedural rights. The facility would continue to operate during the proceeding, so that Navy's fuel supply is not in jeopardy. General statements to the contrary appearing at 3-4 of the Supplementary Information section of the rule are deliberately phrased to mislead and are of absolutely no applicability to this proceeding. The only thing being protected against here is the potential embarrassment to this agency or to the Department of Energy that might flow from effective probing of particular facts in this case. That the NRC would go to such dishonorable lengths for so unworthy a purpose is, as I said at the outset, a disgrace.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK

Secretary of the Commission

Dated at Washington, D.C.
this 27th day of June 1980.

⁷In *Bailly*, ALAB-249, 8 AEC 980 (1974) the inability of a party to cross-examine was held sufficient grounds to reopen the hearing. Furthermore, this agency has recognized that "intervenor may build their cases 'defensively' through cross-examination." *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 356 (1978).

⁸*Pacific Molasses Company v. FTC*, 356 F.2d, 386 (5th Cir. 1966). See also *American Farm Lines v. Black Ball*, 397 U.S. 532 (1970).

⁹Indeed, it is possible that the "hearing" offered by the Commission (without an affective mechanism for adjudicating contested material facts) does not satisfy NRDC's right to a hearing as provided for in Section 189 of the Atomic Energy Act.

¹⁰Atomic Energy Act, Section 181; 10 CFR 2.900 *et seq.*

Supplemental Comments of Chairman Ahearne

I reluctantly have concluded I must respond to the dissent of Commissioner Bradford in the recent matter of Nuclear Fuel Services. In my two years on this Commission, I have believed that an individual opinion is just that, the opinion of an individual. However, I have recently concluded that readers of a dissent do not always share that view. Apparently, where the dissent expresses or implies a belief as to the intended meaning or effect of the majority opinion, the authors of the majority opinion may have to state expressly how their action has been misconstrued in order to avoid a misimpression respecting the exact nature of the majority opinion. Consequently, as a participant in the majority action, I would like to make the following points:

In January 1980 the Commission reached a decision on the operation of NFS Erwin. It was fundamentally a value judgment reached by each Commissioner based upon weighing competing considerations.¹ This decision was clearly and explicitly a major policy decision regarding policy to be applied by the NRC, particularly to this uniquely military facility. For this reason, I did not believe a hearing before an Atomic Safety and Licensing Board was appropriate.

Although it may be so perceived by some, I do not believe the June Commission decision is renegeing on an earlier offer of a full adjudicatory hearing. The Administrative Procedure Act, reports of the American Bar Association and the Congress, and recently proposed Regulatory Reform legislation allow and sometimes encourage the use of legislative hearings, when appropriate. I had always believed such would be appropriate in this case.

As I explained in responding on April 9, 1980 to a proposed order by the General Counsel:

"The Erwin decision was a fundamental change in NRC policy. A Board would have little to measure the amendment against since we established new policy. Consequently, I believe the Commission itself must handle this request.

I would note for the Commission reviewing the appropriate issues in a legislative style hearing (which would be more appropriate than a formal adjudicatory hearing for reviewing what is essentially a policy question)."

As I explained further in the attached memorandum to the General Counsel dated April 18, 1980, (Attachment B) I believed a legislative style hearing was better suited than an adjudicatory hearing for the nature of the

¹See e.g., "NFS-Erwin" memorandum to Commissioners, dated January 9, 1980, expressing the basis for my decision (attached, with classified portions deleted). (Attachment A)

question we were addressing. In addition, I supported a legislative rather than an adjudicatory style hearing for practical reasons. The Commission typically has acted in an appellate rather than a trial capacity. A legislative style hearing corresponded more closely to our normal mode of operation. Most of us have neither the expertise nor the experience to conduct a full scale adjudicatory hearing.

Fortunately, Congress had provided means by which my objectives could be realized.

I do not believe the objective was to avoid "substantive or procedural regulatory action which might inconvenience or embarrass the facility operators or the Department of Energy"¹ but rather it was to directly involve the Commission in a decision only it could make.

Commissioner Hendrie concurs in these views.

Attachments

¹Bradford dissent, at 808, *supra*.

January 9, 1980

MEMORANDUM FOR: Commissioner Gilinsky
Commissioner Kennedy
Commissioner Hendrie
Commissioner Bradford

FROM: John Ahearne

SUBJECT: NFS-ERWIN

We currently have before us two staff-action papers (SECY-79-650/650A) which present alternatives for the possible operations of the HEU activities at NFS-Erwin. Based on these papers, DOE comments and staff discussions, I have concluded the following, which I recommend as the Commission position.

As stated in DOE's December 21, 1979 letter to me, this program includes such military forces as the Navy's nuclear submarines and surface combatants, which are essential to the national security of the United States and must continue to be deployed.

Both NMSS and outside experts believe that for the type of complex liquid process used at NFS-Erwin, one percent of throughput is *realistically* all that can be expected for control on Inventory Difference (ID). Therefore during continued operation at NFS-Erwin, we cannot expect the ID to be below one percent of the throughput even with the improved material accounting outlined by the staff. Nor should a new plant be expected *a priori* to achieve an ID less than one percent of material throughput. The ID control limit for NFS-Erwin should be based on what is realistically achievable—one percent of throughput. It is recognized that by using a one percent control limit, NFS-Erwin would not meet nonproliferation criteria nor would such a figure be acceptable as a real loss for so valuable a commodity as HEU. To compensate for this, more reliance must be placed on physical security to prevent the theft or diversion of nuclear material.

Based on the above, I conclude that NFS-Erwin must operate independent of improvements in the material accounting system and who oversees the operations, the accounting controls cannot achieve an ID limit less than one percent of throughput, and more reliance on physical security will be necessary to provide protection against the theft or diversion of HEU.

This leaves the question of who should oversee/regulate the operation at NFS-Erwin (the NRC or DOE?). In the past, we have argued the issue of whether DOE's defense waste activities should be under NRC licensing review. The issue on waste tanks was complicated by DOE's reluctance to believe the NRC could extend its review and still provide adequate protection of national security information due to the necessity for public

participation. We all agreed that there were advantages to NRC's review of DOE waste management activities. However, some of us (the majority) believed that further extension of NRC regulatory authority to include defense-related waste must be considered carefully because of the necessity to balance national security considerations and enhanced public health and safety. Although both the waste and NFS-Erwin issues involve national security, there is one important difference. For NFS-Erwin, DOE agrees that the NRC can provide adequate protection of national security information and in fact, has requested us to continue licensing the plant. This was not the case for the waste issue. Therefore, consistent with our past view that there are advantages to NRC reviewing DOE's activities, I recommend we continue to license NFS-Erwin. However, as I stated earlier, the accounting control should be based on an ID of one percent of throughput and physical security should be increased as stated in the Secy papers.

Recognizing that we can realistically expect an ID of about one percent of throughput, I do not believe it is necessary to *automatically* close the plant for inventory at the end of each operating period. That is, we should implement the improved physical security measures and operate the plant with the new ID limit.

Relative to the long-range supply of naval reactor fuel, I believe DOE/DOD should begin planning for a new plant to replace NFS-Erwin. NFS-Erwin is old and was not designed with optimal physical security and material control and accounting in mind. A new plant design would include security features. However, it should be recognized that since a new plant will probably still use the complex liquid processing technique, its accounting may also be limited to an ID of one percent of throughput.

In summary, I believe we should (1) allow NFS-Erwin to operate under NRC licensing control with an ID limit of one percent of throughput, (2) require increases to the physical security as proposed in Secy 79-650, (3) not require automatic shutdown at the end of an inventory period and (4) request DOE to begin planning for a new plant to replace NFS-Erwin.

April 18, 1980

MEMORANDUM FOR: General Counsel

FROM: John Ahearne

SUBJECT: NRDC REQUEST FOR HEARING
ON ERWIN (SECY-A-80-41)

Commissioner Kennedy has requested a discussion of alternative courses of action available to the Commission. Please either include in your paper or as a separate paper, a discussion of the option I proposed. In suggesting a "legislative style hearing," I envision something along the following lines: The Commission would address the entire matter in one proceeding. The first step would be stipulation of as many facts as possible. This would be followed by written submissions and written rebuttal if necessary. The Commission would then issue a decision. As I said before, I believe an approach along these lines is more appropriate than a formal adjudicatory hearing for reviewing what is essentially a policy question.

The justification for this approach was well stated in a recent article by Mr. Janofsky (President of the ABA):

"When agencies are making policy, as distinct from determining whether a particular person has violated pre-existing law, extensive trial type of proceedings are least excusable, procedures designed rapidly to narrow disputed factual issues are most useful, and a clear articulation of the agencies' policy choices is far more important than the compilation of a massive record."

"Suggestions for more informality and greater flexibility in the regulatory process deserve the support of the organized bar. A great number of the most important questions presented to our regulatory agencies have nothing to do with "who shot John." Rather, critical problems are frequently the problems of scarcity — questions resulting from the fact that our public goals conflict with one another. For example, the degree to which our environmental ideals must give way to a need for energy self-sufficiency is a policy judgment not necessarily best answered by a process that preserves an absolute right to cross-examination. Facts are, of course important to regulators, just as they are to Congress. But, often enough, dispositive facts are unavailable, even after lengthy trial type of proceedings. The decision concerning how much information to gather is itself a policy decision in these instances. I think a substantial case has been made that we have too often in the past provided. Through our system of administrative law, more process than is due." (L. Janofsky, "On the Road to Regulatory Reform" 66 ABA Journal 300, 301-02 (March 1980)).

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

In the Matter of

Docket No. 50-395A

**SOUTH CAROLINA ELECTRIC
AND GAS COMPANY and
SOUTH CAROLINA PUBLIC
SERVICE AUTHORITY**

(Virgil C. Summer

Nuclear Station, Unit 1)

June 30, 1980

In response to a petition requesting the Commission to determine, pursuant to Section 105c(2) of the Atomic Energy Act, that significant changes in the licensees' activities or proposed activities have occurred subsequent to the antitrust review conducted previously in connection with the construction permit for the facility, the Commission enunciates criteria to be applied in making that decision but defers actual decision pending receipt of comments from the Attorney General and the parties to the proceeding.

**NRC ANTITRUST REVIEW: SIGNIFICANT CHANGES
DETERMINATION**

The Commission's authority to make the "significant changes" determination required by Section 105c(2) of the Atomic Energy Act (42 U.S.C. 2135(c)(2)) resides in the Director of Nuclear Reactor Regulation (for reactors) and the Director of the Office of Nuclear Material Safety and Safeguards (for production facilities), as delegates of the Commission.

NRC ANTITRUST REVIEW: SCOPE OF RESPONSIBILITY

The Commission has the statutory responsibility to avoid the creation or maintenance of situations "inconsistent with the antitrust laws" in the licensing of nuclear facilities. And conditions which run counter the *policies* underlying those laws, even where no actual violation of statute is made out, warrant remedial license conditions under Section 105c of the Atomic

Energy Act. *Consumers Power Company* (Midland Plant, Units 1 and 2), 6 NRC 892, 908 (1977).

NRC ANTITRUST REVIEW: SCOPE

Under the Commission's two-tier licensing process, a thorough antitrust review is required during the construction permit stage. A "narrower second review" will be undertaken at the operating license stage if — and only if — the Commission determines such review is advisable on the ground that significant changes in the licensee's activities or proposed activities have occurred subsequent to the previous review by the Attorney General and the Commission.

NRC ANTITRUST REVIEW: OPERATING LICENSE STAGE

The limitation on the scope of antitrust review at the operating license stage does not impose any limitation on the nature of the finding to be made at the conclusion of that review, or on the remedies then available. The ultimate issue in the operating license stage review is the same as for construction permit review: would the contemplated license create or maintain a situation inconsistent with the antitrust laws?

NRC ANTITRUST REVIEW: SIGNIFICANT CHANGES DETERMINATION

To trigger antitrust review at the operating license stage, the "significant changes" specified by Section 105c(2) of the Atomic Energy Act must (1) have occurred since the previous antitrust review of the licensee; (2) be reasonably attributable to the licensee; and (3) have antitrust implications that would likely warrant some Commission remedy.

NRC ANTITRUST REVIEW: SIGNIFICANT CHANGES DETERMINATION (TIMELINESS OF REQUESTS)

NRC regulations do not specify a period during which requests for a significant change determination will be timely. New NRC procedures, however, include Federal Register notification of an invitation to interested members of the public to comment on antitrust aspects of an operating license application. They also provide that a determination of "no significant changes" will be published in the Federal Register with notice that any request for re-evaluation of that decision be made within 60 days.

NRC ANTITRUST REVIEW: ROLE OF NRC STAFF

“In dealing with antitrust issues, the NRC’s role is something more than that of a neutral forum for economic disputes between private parties.” *Florida Power and Light Company* (St. Lucie Plant, Unit 2), CLI-78-12), 7 NRC 939, 989 (1978). The staff, therefore, has an obligation to comprehend the complete picture of the competitive situation before making the initial determination as to whether or not there have been significant changes.

NRC ANTITRUST REVIEW: SIGNIFICANT CHANGES DETERMINATION

An affirmative significant changes determination cannot be made absent an expectation that further antitrust review would have greater than *de minimis* results. Consequently, this criterion requires an examination of (a) whether an antitrust review would be likely to conclude that the situation as changed has negative antitrust implications, and (b) whether the Commission has available remedies.

NRC ANTITRUST REVIEW: APPLICATION OF ANTITRUST LAWS

Just as it must give full force to the antitrust laws and to the policies underlying them in order to assure the maintenance of competition, the Commission must equally credit the exemptions and immunities specifically established by legislation or carved out by the judicial process.

NRC ANTITRUST REVIEW: STATE REGULATION

The mere existence of state regulation of the electric industry is insufficient to displace the Commission’s antitrust responsibilities. The antitrust laws give way only if there is found to be a “plain repugnancy between the antitrust and regulatory provisions.” *United States v. Philadelphia National Bank*. 374 U.S. 321, 351 (1963).

NRC ANTITRUST REVIEW: STATE REGULATION

In evaluating whether a licensee’s activities or proposed activities are exempt from the antitrust laws because of the existence of a state regulatory scheme, a pertinent question is whether the licensee has a free choice with respect to the activity, in the sense that the state is neutral with regard to the course chosen, or whether the chosen course follows so naturally from

activities required by the state that to apply an antitrust standard would work an unfairness on the licensee.

NRC ANTITRUST REVIEW: STATE REGULATION

In deciding whether a proposed pro-competitive license modification is repugnant to a state regulatory scheme, a pertinent question is whether a licensee could properly choose to implement a proposed license modification without conflicting with a state regulatory scheme or whether the modification would be so unnatural in the regulatory setting so as to work an unfairness on the licensee.

MEMORANDUM AND ORDER

Pending before us is a petition of Central Electric Power Cooperative, Inc. (Central) for a "significant changes" determination under section 105c(2) of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2135c(2).¹

Central urges that we make a finding that there have been significant changes in the activities and proposed activities of South Carolina Electric and Gas (SCEG) and South Carolina Public Service Authority (Santee Cooper)² so as to initiate antitrust review on their application for an operating license (OL) for the Virgil C. Summer facility.³ SCEG and Santee Cooper (the Applicants or Licensees), who filed that application in April, 1977, urge us to dismiss the petition or to deny it. The NRC Staff (Staff), also, opposes the petition.

In this memorandum we discuss briefly the elements for the section 105c(2) "significant changes" determination. We then set forth the facts of this case and apply those facts to that standard in order to resolve the issues. As we will explain more fully below, we are requesting the assistance of the Attorney General for the final step in this process and consequently do not today finally determine whether or not there have been significant changes as contemplated by the statute.

¹Unless otherwise stated "Petition" refers to the "Amended Petition for a Finding of Significant Change" filed by Central on January 31, 1979, pursuant to the Commission Order of January 2, 1979 and any reference to section 105 is a reference to that section of the Atomic Energy Act.

²The South Carolina Public Service authority derived the name "Santee Cooper" by which it is commonly known from the Santee Cooper hydro facility with which it began operations in 1942.

³Central's original petition requested an antitrust hearing as well; however, Central withdrew the request for hearing and only the request for a significant changes finding remains for Commission determination at this time.

I. STANDARD FOR THE "SIGNIFICANT CHANGES" DETERMINATION

On only two previous occasions — in *South Texas* and *Comanche Peak*⁴ — has the Commission been called upon to make a finding that there have been "significant changes." In both cases there was by the time of Commission involvement substantial agreement that a determination in the affirmative should be made. The *South Texas* case presented the issue whether or not a second antitrust review might precede an operating license application and provided the occasion for us to explicate how the timing of the antitrust review process was related to the statutory intent. In *Comanche Peak* we declined an invitation to delegate our authority to make the "significant changes" determination, and in light of the fact there was no opposition made the determination ourselves "deciding only that the events [which have occurred] were of such a nature as to convince us that the Attorney General must be consulted."⁵ At neither time, therefore, did we discuss explicitly by what yardstick a contested significant changes determination should be measured.

Consideration of Central's request requires us to enunciate the standards for the significant changes decision. A related event makes it especially useful for us to provide additional guidance in this regard. Subsequent to the filing of Central's petition, which was correctly lodged with the Commission, we have delegated to officials of the Staff⁶ authority to make the significant changes decision for the Commission. At that time we approved procedures the Staff will employ in the implementation of our delegation. Our comments here will provide our views on the substance of the significant changes determination.⁷

⁴*Houston Lighting and Power Company, et al.* (South Texas Project, Units 1 and 2), 5 NRC 1303 (1977) and *Texas Utilities Generating Company, et al.* (Comanche Peak Steam Electric Station, Units 1 and 2), 7 NRC 950 (1978).

⁵*Id.* at 951, citing *South Texas*, 5 NRC 1303 at 1319.

⁶To the Director of Nuclear Reactor Regulation (for reactors) or the Director of the Office of Nuclear Material Safety and Safeguards (for production facilities), as appropriate.

⁷While we use this opportunity to issue guidance on the significant changes determination, we do not mean to suggest that the instant case illustrates the typical determination. To the contrary, developments in agency law (*see infra* n. 38) and procedures (*see infra* n. 36) provide assurance that the factual circumstances of this matter will not be repeated. Furthermore, we do not anticipate a repetition of the two tiered decision process involved in today's opinion (*see infra* at 838). We expect in the future that issuance. We take the tiered course on this occasion only because we feel that some response on our part to the parties is past due, and because we wish to provide an opportunity for comment where earlier opportunity did not exist.

ROLE OF THE "SIGNIFICANT CHANGES" DETERMINATION IN THE STATUTORY SCHEME

Because the standards for the "significant changes" determination are essential to that determination's fulfilling the statutory intent, a brief recapitulation of the statutory framework and our role in antitrust area is warranted.

In licensing nuclear facilities the Commission has the statutory responsibility to avoid the creation or maintenance of situations "inconsistent with the antitrust laws." It is well established that conditions which run "counter to the *policies* underlying those laws, even where no actual violation of statute was made out, would warrant remedial license conditions under Section 105c of the Atomic Energy Act."⁸

⁸In the Matter of *Consumers Power Company* (Midland Plant, Units 1 and 2), 6 NRC 892, 908 (1977) citing S. Rep. No. 91-1247 and H.R. Rep. No. 91-1470, 91st Cong., 2nd Sess., 14-15 (1970) Reports of the Joint Committee on Atomic Energy on Amending the Atomic Energy Act of 1954 to Provide for Relicensing Antitrust Review of Production and Utilization Facilities, *inter alia*. Our Appeal Board has recently reviewed the antitrust responsibilities of this agency. See *In the Matter of Toledo Edison Company* (Davis Besse Nuclear Power Station, Units 1, 2 and 3) and the *Cleveland Electric Illuminating Company, et al.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-560, 10 NRC 265, 271-273 (1979), (appeal pending in U.S. Court of Appeals for the Third Circuit). With regard to remedial license conditions the Davis Besse opinion concluded as follows:

If the hearing record demonstrates with "reasonable probability" that an anticompetitive situation within the meaning of section 105c would result from the grant of an application, the Commission may refuse to issue a license or issue one with remedial conditions. Findings of actual Sherman or Clayton Act violations, however, are not necessary. Under section 105c, *procompetitive license conditions are also authorized to remedy situations inconsistent with the "policies clearly underlying" the antitrust laws. Midland, supra*, ALAB-452, 6 NRC at 907-09 and authorities there cited. See also, *South Texas, supra*, CLI-73-13, 5 NRC at 1316; *Waterford I, supra*, CLI-73-25, 6 AEC at 49 (emphasis provided).

As we carefully reviewed in our *South Texas* opinion,⁹ section 105c “establishes a particularized regime for the consideration and accommodation of possible antitrust concerns arising in connection with the licensing of nuclear power plants.”¹⁰ Provision for Commission and Department of Justice antitrust review is tied to the Commission’s two-tier licensing process — a thorough antitrust review is to occur at the construction permit (CP) stage,¹¹ a “narrower second review”¹² at the operating license stage, if — and only if — in the words of the statute “the Commission determines such review is advisable on the ground that significant changes in the licensee’s activities or proposed activities have occurred subsequent to the previous review by the Attorney General and the Commission...in connection with the construction permit for the facility.”¹³

We said in *South Texas*, by way of explaining the narrower scope of OL stage antitrust review, that “a full-blown de novo antitrust review, with the Commission’s ‘significant changes’ determination acting only as a triggering mechanism, would be inconsistent with the statutory scheme of immunity from a second review for unchanged proposals.”¹⁴ We further found that a full-blown review would be inconsistent with “well established considerations consolidated in the doctrines of res judicata and laches.”¹⁵ But, as we also pointed out:

⁹*Houston Lighting and Power Company* (South Texas Project, Units 1 and 2), CLI-77-13, 5 NRC 1303, 1309-1322 (1977).

¹⁰*Id.* at 1309.

¹¹At the construction permit stage the Commission is obliged by statute promptly to transmit to the Attorney General a copy of the license application. Within 180 days the Attorney General is required to give the Commission “such advice...as he determines to be appropriate” with regard to the finding the Commission must make on whether or not to conduct an antitrust hearing. If the Attorney General advises that there should be a hearing, a hearing must be held. The statute provides (section 105c(5)) that the Attorney General’s advice shall be published in the Federal Register. At the time of publication of the Attorney General’s advice letter, if the Attorney General does not himself advise a hearing, the Commission offers an opportunity for any interested party to request a hearing on antitrust matters and to request the right to intervene. It may be seen, therefore, that it is the publication of the advice of the Attorney General that serves notice of the right to request a hearing on antitrust matters. The Commission’s determination on whether or not to hold a hearing in response to such a request is determined by the provisions of the Administrative Procedure Act and the Commission’s rules on intervention.

¹²5 NRC at 1312.

¹³The practical import of this provision is that the Commission must determine that there have been significant changes before a formal request may be made for the Attorney General’s advice concerning a possible antitrust proceeding. The publication of Attorney General’s advice triggers an opportunity for interested parties to request a hearing at the OL stage.

¹⁴5 NRC at 1321.

¹⁵*Id.*

This is not to say that "significant changes" in a licensee's proposal can or should necessarily be viewed in isolation from unchanged features of the proposal. The antitrust implications of a "significant change" may indeed arise from its relationship to unchanged features of the proposal. Obviously, some account will have to be taken of the proposal as a whole, but as the proposal or its impacts have been altered by changed circumstances.¹⁶

The limitation on the scope of review at the OL stage does not impose any limitation on the nature of the finding to be made at the conclusion of that review, nor on the remedies then available. While, as we have just discussed, any review at the OL stage would proceed with a more limited scope than would obtain at the CP stage, focusing on changed circumstances, the ultimate question is the same for OL as for CP review. That question is: would the contemplated license create or maintain a situation inconsistent with the antitrust laws? In the event that question is answered in the affirmative, irrespective of the licensing stage, our full remedial authority may be invoked to provide such license modifications as would best serve the policies of the antitrust laws under the circumstances.

Since our full arsenal of antitrust remedies is available when an OL antitrust hearing shows that remedies are warranted and since a determination that there have been "significant changes" is the necessary precedent to an OL antitrust hearing at the OL stage, it follows that the requirement of such a determination establishes a threshold of some importance. The legislative history of the antitrust provisions demonstrates that Congressional attention was focused on whether and under what circumstances antitrust review at the OL stage was desirable. The issue was considered both in hearings and in the Committee report.¹⁷ The statutory language reveals explicitly and by implication the standards Congress intended be employed by us in making the "significant changes" determination.¹⁸

Criteria for the Decision

The statute contemplates that the change or changes (1) have occurred since the previous antitrust review of the licensee(s); (2) are reasonably attributable to the licensee(s); and (3) have antitrust implications that would likely warrant some Commission remedy. These are explained below:

¹⁶5 NRC at 1322.

¹⁷See notes 43 and 44 below.

¹⁸Our recent delegation institutes a procedure by which a record determination *vel non* will be made on the significant changes question in the case of each OL application. Until that delegation the statutory intent that there should be an OL stage antitrust review where significant changes had occurred was fulfilled in the following manner. Staff determined whether or not it in its view significant changes had occurred, and only when a determination of significant changes was recommended was the Commission approached.

1. Occurrence since the previous antitrust review.

The statutory language is explicit that the significant changes, if any, need to have occurred “subsequent to the previous review by the Attorney General and the Commission under this subsection in connection with the construction permit for the facility.” That language refers to a formal review process that contemplates at the least the publication of the advice of the Attorney General, as required by section 105c(1), and extends to include a subsequent antitrust hearing conducted by the Commission or its delegees.

2. Reasonably attributable to the licensee(s)

The act explicitly provides that the change or changes be those which occur in the activities or proposed activities of the licensees. The legislative history makes clear an intent to avoid a situation where the applicant will be subjected for a second time to antitrust review because the competitive picture had been altered in ways for which the applicant could not reasonably be held answerable.¹⁹

3. Antitrust implications that would be likely to warrant Commission remedy

With this element of the determination we make explicit the interplay between the requirement that the changes be “significant” and the threshold nature of the determination. Were the significant changes determination to require more than a likelihood that the antitrust implications of changes would warrant Commission remedy — i.e., that changes had occurred that required Commission remedial action — it would be bearing an unwarranted freight. This is true because the significant changes determination is provided to trigger an inquiry that would have as its ultimate finding a determination of whether the competitive situation arising from the changes required Commission remedial action. Were it to require less, it would offer scant protection against subjecting the applicant to a second review process, especially given the possibility for a hearing that follows even a no-hearing recommendation by the Attorney General.

These matters, whose outline we have sketched in brief, will be further discussed as we evaluate whether the facts of this case warrant an affirmative significant changes determination.

¹⁹See citations *infra* n.40 and 41.

II. STATEMENT OF FACTS AND POSITIONS

SCEG, a public utility, filed as sole applicant its application for a CP for the Virgil C. Summer Nuclear Station (Unit 1) on June 30, 1971. In connection with SCEG's CP application, an antitrust review was conducted by the United States Department of Justice pursuant to section 105c(1) of the Atomic Energy Act. The Justice Department sent the advice letter (Attorney General's letter) to the NRC on March 31, 1972, and the letter was published in the *Federal Register* on April 12, 1972²⁰ pursuant to 105c(5), 42 U.S. 2135c(5).

The Attorney General's letter examined the applicant (SCEG), discussed its relations with other utilities, among them Santee-Cooper and Central, and described the overall competitive situation in the relevant area of South Carolina. In that regard, the letter noted:

In its service area the applicant faces strong competition in bulk power sales, and, until recently, in retail distribution. The principal competitive alternatives for bulk power open to municipals and co-ops in the area are SEPA and Santee-Cooper.²¹

and further,

In wholesale purchasing, the power output of Santee-Cooper, as supplemented by SEPA and made available by the Central-Santee-Cooper transmission system, provides a competitive alternative to SCEG.²²

It also noted the 1969 amendments to South Carolina law restricting distribution of electricity by private investor-owned utilities and rural electric cooperatives with a resulting limitation of retail competition.²³

The letter described the intertwined power supply relationship between Santee Cooper and Central, both regarding the actual power supply itself and Central's leasing of generation plants and transmission networks to Santee Cooper.²⁴

In concluding, the Justice Department advised that negotiations were proceeding between Santee Cooper and SCEG to enable Santee Cooper's participation in a substantial share of the plant's output. It observed that "Central is definitely interested in obtaining the benefits of a share in the

²⁰37 FR 7265.

²¹*Id.* at 7266, col. 2.

²²*Id.* col. 3.

²³*Id.* Col. 3.

²⁴*Id.* Col. 2. It should be noted that ultimate ownership of generation and transmission facilities will reside in Santee Cooper. NRC Staff Response to Amended Petition of Central, March 19, 1979, at 24 and citations therein.

Summer facility, but because of its contractual relations with Santee Cooper is awaiting the outcome of the negotiations between the latter and SCEG.²⁵

In light of all of the foregoing and SCEG's commitment to removing some restrictions in its wholesale contracts that Justice found to be "unnecessarily restrictive,"²⁶ the Justice Department recommended that no antitrust hearing need be held on the CP application. No one requested a hearing following publication of the advice letter, and none was held. A construction permit for Summer Unit 1 was issued to SCEG on March 21, 1973.

On July 9, 1973 two enactments of the South Carolina legislature relevant to this matter became effective. One, introduced on February 16, 1973, authorized Santee Cooper to participate as a joint owner in the Virgil Summer nuclear facility. The other, introduced close to the final passage of the joint ownership bill, restricted service territories. That legislation also contained various provisions relating to sales at wholesale and of loads exceeding 750 KWs.

On May 17, 1974, SCEG filed an application to amend its CP to add Santee Cooper as a co-owner and co-licensee, having executed a sale of approximately 1/3 of Summer Unit 1 to Santee Cooper on October 18, 1973. Some antitrust information concerning Santee Cooper was filed along with the amendment application; however, from the submissions of the parties it appears that complete Appendix L²⁷ information about Santee Cooper was not sought or supplied.²⁸

On October 17, 1974, a Federal Register notice was published with respect to receipt of SCEG's amendment application.²⁹ This notice offered an opportunity for members of the public to request a hearing and to file petitions for leave to intervene.³⁰ No petitions were filed and on December 3, 1974, the amendment adding Santee Cooper as a co-licensee was issued.

On December 10, 1976, SCEG filed its application for the Summer Unit 1 operating license and contemporaneously submitted additional antitrust information on both itself and Santee Cooper which it expanded in a February 24, 1977 filing. A Federal Register notice concerning receipt of the OL application was published on April 18, 1977.³¹ That notice related

²⁵*Id.* Col. 3.

²⁶*Id.* at 7267, Col. 1.

²⁷Appendix L enumerates the information the Attorney General requires for his antitrust review.

²⁸See Staff's Attachment 2, SCEG's Amendment 21, May 17, 1974, at 14.

²⁹39 FR 37088.

³⁰No specific mention was made in the notice of rights to an antitrust hearing.

³¹42 FR 20203.

exclusively to the health, safety and environmental aspects of the OL application.

The NRC Staff then undertook its own review in order to determine whether or not "significant changes" had occurred. Staff declared that it "was in the final stages of assimilating its information and forming a recommendation as to whether 'significant changes' had occurred"³² when Central filed its original petition with the Commission on December 6, 1978.

Central, in its original and amended petition and other correspondence and pleadings,³³ contends that SCEG illegally wielded monopoly power to condition its sale to Santee Cooper of a share of the Summer facility on Santee Cooper's agreement to join in asking for legislation to divide territories. As a result, Central argues, Santee Cooper is no longer a strong competitor in the South Carolina market. Further, according to Central, Santee Cooper has instituted an anticompetitive dual rate structure in its supply of power. Central complains also of SCEG's unwillingness to make power transmission arrangements other than on an *ad hoc* basis and Santee Cooper's refusal to permit Central to share ownership.³⁴ As evidence of anticompetitive intent, Central relates a merger offer from Santee Cooper which Central asserts would result in the removal of Central as a market force.³⁵

SCEG and Santee Cooper responded by urging that Central's petition be dismissed as untimely. In the alternative they urged in essence that the changes alleged did not occur in the relevant time period, did not occur at all, or are shielded from our antitrust scrutiny by well accepted exemptions from the operation of the antitrust laws.

Staff takes the position that Central's petition should be allowed, that the changes alleged occurred within the allowable time frame, but that as a matter of law certain changes may not be considered by us and that no changes alleged are "significant" within the meaning of the act.

³²NRC Staff Response to Amended Petition of Central, March 19, 1979, at 9.

³³Because our regulations do not explicate the nature of a significant changes proceeding nor the rules for response and reply, confusion existed among the parties that led to an unusually large number of correspondence and pleadings. Although some pleadings were somewhat repetitive, we decided to accept them all in the interest of having the full facts and claims before us.

³⁴Central's amended petition, at 46.

³⁵*Id.* at 46-47.

III. RESOLUTION OF ISSUES

Timeliness

Before attempting to unravel the complexities of the issues before us, we deal with the threshold issue of timeliness.

Our regulations do not specify a period during which requests for a significant change will be timely.³⁶ SCEG invokes the criteria of 10 CFR 2.714(a)(1); however, those criteria related to a late plea to intervene in a hearing and are not necessarily directly applicable to the threshold determination we have before us.

We have also had our attention directed to the Congressional intent embodied in the legislative history that a potential intervenor not be permitted to stand by and raise at the OL stage matters that could have been brought at the construction stage. However, this objection to Central's alleged "untimeliness" is in our view precluded by the requirement that a "significant change" must be one that has occurred since the antitrust review of the CP stage. We will pursue this matter further below.

The relevant question in determining timeliness is whether Central's request has followed sufficiently promptly the OL application. Our affirmative response rests on two facts. First, the significant changes decision was still pending. By its own admission, Staff had not finally determined the nature of its recommendation regarding the significant change determination. Second, it appears to us that there was not earlier an unambiguous notice of opportunity for antitrust comment.³⁷ In conse-

³⁶Our new procedures include notification by publication in the Federal Register of an invitation to interested members of the public to comment on antitrust aspects of an OL application. They also provide that in the event there is a determination that there have been no "significant changes", that determination will be published in the Federal Register with notice that any request for re-evaluation of that decision should be made within 60 days.

³⁷Federal Register notices invited comment specifically on health and safety issues, and could be therefore read to exclude an opportunity for antitrust comment. Also, we think staff stretches when it characterizes its May 3, 1977 letter to Central's lawyer William Crisp (Attachment 9 to Staff's March 19, 1979 submission) as an invitation to comment. That letter has one substantive paragraph which states in its entirety:

To date, the Applicant's antitrust information [at the operating license stage] has been submitted pursuant to Rule 9.3, but the Federal Register notice reflecting that submission has not yet been published. The notice, as I understand it, does not formally invite comments. However, I would imagine that comments would be considered if they were received by our Staff or the Commission's Antitrust and Indemnity Group.

Among the implications a reader might draw from that statement is one that a Federal Register notice on antitrust matters could be expected. We have been referred to none.

quence, fairness dictates that the Central petition be considered timely. And, it was useful for Staff to have before it all of Central's comments when reaching its conclusions. It should be recalled that we have said "[i]n dealing with antitrust issues, the NRC's role is something more than that of a neutral forum for economic disputes between private parties." *Florida Power and Light Company* (St. Lucie Plant, Unit 2), CLI-78-12, 7 NRC 939, 989 (1978). Paralleling Staff's obligation to present a complete picture of the competitive situation to the Licensing Boards that we described in *St. Lucie*, Staff has an obligation to comprehend the complete picture when it advises, or now initially determines, whether or not there have been significant changes.

Whether the change or changes have occurred since the previous antitrust review of the licensees

The Attorney General's only advice letter concerning licensing of the Summer facility was issued on March 31, 1972. That letter recommended that no hearing was necessary on SCEG's application for a construction permit, and none was held.

All of the changes alleged by Central have occurred or were alleged to have occurred on dates subsequent to March 31, 1972. Therefore, those changes on their face meet the criterion that they have occurred since the previous antitrust review of the licensees unless (1) some later antitrust review than the Attorney General's took place and should be considered the benchmark in this matter, or (2) the alleged changes were anticipated by the Attorney General so that their review was in effect already undertaken and included in the earlier advice.

In our order of January 26, 1979 we solicited assistance from the parties in determining whether or not some date other than the Attorney General's past advice letter should be the operative date and whether the Attorney General's advice anticipated the changes in arriving at a no hearing recommendation.

Both Central and Staff agree that the appropriate date from which to analyze significant changes is March 31, 1972, the date of the Attorney General's letter. We concur, having found no subsequent antitrust review that would authorize a subsequent date nor any indication that the Attorney General anticipated the matters of which Central complains.

SCEG and Santee Cooper would have us look to the date of amending the construction permit to include Santee Cooper as a co-licensee. In considering antitrust matters relative to licensing the Enrico Fermi facility, it was determined in 1978 that the addition of a co-owner as a co-licensee was in effect an initial application of the co-owner and as such required

formal antitrust consideration.³⁸ That decision was based on the necessity for an in-depth review at the CP stage of all applicants, lest any applicant escape statutory antitrust review. Implementation of *Fermi* was prospective only. Consequently, Santee Cooper, added as a co-licensee by amendment in 1974, avoided the formal antitrust review process. Applicants should not be permitted to bootstrap that omission into a shield from antitrust scrutiny at the OL stage, as they would do if they prevailed in their claim that the operative "previous [antitrust] review" date is the date of the license amendment admitting Santee Cooper. The anomalous nature of the result urged by Applicants is obvious when one considers that they are in effect arguing that the license amendment date is the operative one because there might have been antitrust review even though none took place. Furthermore, the date urged by applicants would not serve the statutory purpose of providing for consideration of any changes not previously considered in depth by Commission or Department of Justice but not allowing the same ground to be ploughed twice. It would leave the years between the Attorney General's letter in 1972 and the amendment in 1974 unable to be ploughed at all.

Nonetheless, it would be equally inconsistent with the Congressional intent if contemplated changes that had been subject to anticipatory antitrust analysis triggered OL stage antitrust review simply because the actual time of effecting the anticipated changes followed the completion of their antitrust review.

We therefore review the response of the parties to the question whether the Attorney General's advice letter anticipated the changes now alleged by Central. Central complains not of the sale, which was anticipated, but of Santee Cooper's changed competitive role, which was not. Staff agrees with Central that the letter does not contemplate the alleged anticompetitive changes, although Staff believes that some consideration should be given to the "explicit awareness of the Attorney General...of South Carolina's ongoing legislative plan designed to restrict retail competition among private utilities and electric cooperatives enacted in 1969."³⁹

Both SCEG and Santee Cooper also view the Attorney General's consideration of similar prior territorial legislation to be significant, while admitting that it was obvious that the Attorney General could not have had under consideration the 1973 enactments. Santee Cooper notes that the Department of Justice had "actual knowledge" that negotiations between

³⁸*Detroit Edison, et al.* (Enrico Fermi Atomic Power Plant, Unit No. 2), 7 NRC 583, 597-89 (1978), *aff'd* ALAB-475, 7 NRC 752, 755-56 n.7 (1978).

³⁹NRC Staff Response, at 13-14.

SCEG and itself were underway concerning its participation in the Summer facility and also that "it was a matter of public record that SCEG and the Authority were then negotiating as to service areas as well." Cited for that proposition are a Santee Cooper press release of February 3, 1972 and an article in the Columbia, South Carolina newspaper on February 6, 1972. There is no suggestion that the Justice Department was advised or had knowledge of either the release or article at the time of writing the advice letter issued on March 31 of that year.

The point is made that the Department of Justice discussed and accepted anticompetitive aspects of the 1969 amendments similar to the 1973 amendments. Whether the Department of Justice will view the 1973 enactments, their effects and the resultant relationships among the parties substantially as it viewed the 1969 enactments or in any manner that would imply that there had been no significant changes in the competitive picture is a matter that is relevant to a significant changes determination. But any purported similarity between the 1969 and 1973 legislation is not relevant to the standard that alleged changes must have occurred since the previous antitrust review.

We can find no evidence that suggests the Department of Justice contemplated the changes alleged by Central at the time it issued the advice letter.

In light of the foregoing we find that the changes alleged by Central have occurred since the last antitrust review.

Whether the Change or Changes Are Reasonably Attributable to the Applicants

While there were changes alleged by Central that have no obvious relationship to the 1973 enactments of the South Carolina legislature and for which at least one of the Applicants could be held clearly to be answerable,⁴⁰ an issue has arisen of whether for 105c purposes the applicants may be reasonably held responsible for changes resulting from the South Carolina legislation. Resolution of this issue is of utmost importance because it seems to be generally conceded by all parties that the legislation establishing territorial limitations and the activities stemming from that legislation resulted in substantial changes are at the heart of Central's complaints.

⁴⁰Whether we ultimately determine that the allegations of dual rates or refusal to share transmission ownership or to make ongoing transmission arrangements have any significance, there is no suggestion that neither applicant is to be held responsible or answerable for the factual situation that exists.

There appears to be no dispute of fact among the parties that the territorial legislation was in the main⁴¹ presented and actively sought by the applicants.⁴² The question is whether this kind of involvement on the part of applicants is sufficient to satisfy the legislative intent of 105c(2) that second antitrust review should occur only when the changes are reasonably attributable to the applicants. We find that it is.

In enacting Section 105c(2), Congress steered a careful course between the alternatives of antitrust review only at the CP stage and automatic antitrust review at both the CP stage and the OL stage. Given the NRC's mission to assure that use of nuclear power would be consistent with the procompetitive policies underlying the antitrust laws, it would not have been unreasonable to require in all cases a second look at the total competitive picture within the relevant markets at the time of granting an operating license. On the other hand the disadvantages of such a regime were obvious — both in terms of wasted time and resources and in the element of unfairly creating uncertainty in the planning of licensees. The course chosen eschewed both alternatives and resolved the problem by providing for OL antitrust review only when significant changes had occurred in “the activities or proposed activities of the licensees.”

The report of the Joint Committee clarifies the intent by stating as follows:

The term “significant changes” refers to the licensee's activities or proposed activities; the committee considers that it would be unfair to penalize a licensee for significant changes not caused by the licensee or for which the licensee could not reasonably be held responsible or answerable.⁴³

The expectation was that licensees would maintain the situation that existed at the time of the grant of the construction permit.⁴⁴ If they did not, they were to be subject to additional scrutiny at the operating license stage, providing other conditions were met. The Joint Committee considered that

⁴¹An amendment to the legislation as originally submitted was apparently requested by Central, although this fact did not come to light in Central's petition.

⁴²There is dispute whether Santee Cooper freely joined SCEG in seeking the legislation or whether SCEG used its monopoly position to require Santee Cooper to join in the request for territorial limitations in return for an ownership share in the Summer facility. Our decision here does not depend on a resolution of that matter. It is a fact that the South Carolina legislature considered and passed the legislation and the parties are entitled, as we shall develop more fully below, to conform their behavior to it. Proof establishing that one of the parties committed an antitrust violation in preparing to petition for the legislation would not serve to repeal that legislation.

⁴³U.S. Code, Congressional and Administrative News, 91st Cong., 2d Sess., 4981, 5010 (1970).

⁴⁴See the colloquy between AEC General Counsel Joseph F. Hennessey, Chairman Holifield and Representative Hosmer, Hearings before the Joint Committee on Atomic Energy or Prelicensing Antitrust Review and Nuclear Power Plants, 1st Sess., 1969, at 72-73.

fairness dictated where there had been changes, otherwise significant, they should not trigger antitrust review when the changes occurred independent of the action of the license applicant.

The language of the report, "changes...for which the licensee could not reasonably be held responsible or answerable", provides the latitude for a common sense determination of when it is or is not fair to subject particular licensees to a second review. We judge that here Applicants' involvement in securing the changes was sufficient to make it fair to consider how those changes affect the competitive situation. We thus find this criterion is met. This can not be an instance where the licensees are caught off guard by figuring in an anticompetitive situation, if one is found to exist, which has been thrust upon them unknowingly. Santee Cooper and SCEG actively and successfully sought to change the situation that existed at the time of the earlier antitrust review.

We note in passing that the *Noerr-Pennington*⁴⁵ doctrine does not govern our limited causation-type determination here. The *Noerr-Pennington* doctrine stands for the principle that the antitrust laws' prohibitions of combination in restraint of trade do not intend to catch in their net combinations that seek government action even though the action sought be anticompetitive in intent or effect. *Noerr-Pennington* does not address problems of causation; in finding that the changes from the state legislation may reasonably be attributed to applicants we find no antitrust violation.

Our determination that the changes resulting in this instance from state legislation are reasonably attributable to the licensee should not be read as comment on the cause, purpose or independence of the South Carolina legislature in enacting that legislation. Our result is limited to a view that the applicants' independence of the changes legislated by the state was insufficient to excuse them from additional antitrust review on the grounds that the "reasonably attributable" criterion had not been met.

⁴⁵The *Noerr-Pennington* doctrine results from a line of cases, of which the principal case is *Eastern Railroad Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 5 L.Ed.2d 464 (1961), holding combinations to urge legislation that will have the effect of restraining trade are *not* combinations in restraint of trade under the Sherman Act. And accord, *United Mine Workers of America v. Pennington*, 381 U.S. 657, 14 L.Ed. 626 (1965), holding in this regard, a concerted effort to influence public officials is shielded by the Sherman Act regardless of antitrust intent or purpose.

Whether the changes have antitrust implications that would be likely to warrant Commission remedy

This criterion focuses on the meaning of the word “significant”; it fleshes out the statutory provision that only the Commission’s determination that “*significant* changes have occurred” shall initiate antitrust review at the OL stage. As we explained above⁴⁶ our understanding of the meaning of “significant” in the 105c(2) context comprehends the threshold nature of the determination and the nature of the inquiry that such a determination initiates. In brief, it is our view that this criterion requires us to take a sufficiently hard look at the same matters that would be addressed after an affirmative significant changes decision in order to make a preliminary judgment whether there is a genuine likelihood that the outcome of antitrust review, were it to occur, would be a greater than inconsequential alteration or adjustment in furtherance of the policies underlying the antitrust laws. Otherwise stated, we believe it was intended that we not undertake the process without an expectation that it would have greater than *de minimis* results.

Like other threshold tests that require a prediction of outcome, this criterion requires us to take an early look at both the facts and the law. We address two distinct questions (a) whether an antitrust review would be likely to conclude that the situation as changed has negative antitrust implications, and (b) whether the Commission has available remedies.

To review the background:

Central alleges significant changes in the activities and projected activities of the Applicants under the Summer license.⁴⁷ Central discusses the authorization by state law of Santee Cooper’s purchase of a share of Summer and addition as a co-licensee as a major change since the last antitrust review. Yet, it is clear to us that this change is not in itself the subject of Central’s concern. Central, as well as the Department of Justice, was aware of negotiations toward that end, and such a result appeared to be satisfactory to Central when Central perceived itself as strongly aligned with Santee Cooper and saw Santee Cooper as a strong competitive force in the market. The gist of Central’s complaint is Santee Cooper’s subsequent realignment with SCEG and termination of its role as a strong competitor vis-a-vis SCEG in the market. Central objects to territorial limitations on the operations of each of the Applicants that were enacted by the State, and attests to an attempt by Santee Cooper to remove Central by merger or absorption from its role as an active participant in the power marketplace.

⁴⁶See *supra* at 825

⁴⁷In footnote 42, *supra*, we have disposed for the purpose of this determination of Central’s allegation of a Sherman Act section 2 violation by SCEG in allegedly using its monopoly position to coerce Santee Cooper into joining its effort to secure territorial limitations.

Also, as we have noted earlier, Central complains of an inability to make satisfactory arrangements for power transmissions and of an application by Santee Cooper of dual rates for bulk power supply to Central. These complaints are made independently of the realignment complaint, but are consistent with and support that complaint.

Central has made several assertions regarding power exchange services. The gist of the matter is that Central, following its perception of a realignment of competitive interest, proceeded to seek bulk power supply alternatives; however, as Central points out, the key to participation in the bulk power market is access to power exchange services and facilities. Central alleges that it therefore sought ownership interest in transmission from Santee Cooper and power exchange agreements from SCEG. It alleges that Santee Cooper has refused to permit it to share ownership and that SCEG has agreed only to wheel discrete amounts of power between discrete points on a case-to-case basis. While there is disagreement about the implications, the parties do not dispute either Santee Cooper's refusal to share ownership or SCEG's unwillingness to contract other than on a case-to-case basis.

Regarding Central's allegation that "dual rates" have been imposed by Santee Cooper, it appears to cite only one instance to support this allegation — the so-called Pee Dee contract contained in an amendment to Central's and Santee Cooper's for power to be supplied by Santee Cooper. While the contract provision is not in itself in dispute, the interpretation to be put upon it is. Other facts that bear on the issue are that Santee Cooper operates pursuant to a State mandate to provide power at "cost of service;" and Central's requirements contract enables it currently to receive power at a fixed price even though that price may be less than cost.

"State action doctrine"

The facts reveal that state action since the last Attorney General's letter is a significant ingredient of the mix that makes up the competitive situation in South Carolina as it currently exists. And we have found that a determination on both the issues we address in this section — negative antitrust implications and available remedies — involves an understanding of the nature and extent of the role of the "state action doctrine"⁴⁸ in the Commission's performance of its antitrust functions. Therefore, we turn our attention to this subject.

⁴⁸The "state action doctrine" is otherwise known as the *Parker v. Brown* doctrine, *Parker v. Brown*, 317 U.S. 341 (1943), which held immune from Sherman Act prohibitions California's regulatory scheme to control the supply of raisins in order to enhance prices. The process of carving out the limitations of that immunity is a continuing one. In *California Retail Liquor* (FOOTNOTE CONTINUED ON NEXT PAGE)

There can be no doubt that the Commission takes the antitrust laws as it finds them. "The Commission must 'apply principles developed by the Antitrust Division, the Federal Trade Commission, and the Federal Courts, to [the nuclear] industry.' *Houston Lighting and Power Company (South Texas Project, Units 1 and 2)*, *supra*, CLI-77-13, 5 NRC at 1316." *Davis Besse*, *supra*, 10 NRC at 272. Just as it gives full force to the antitrust laws and to the policies underlying those laws in order to assure the maintenance of competition, it must equally credit the exemptions and immunities specifically established by legislation or carved out by the judicial process. Where there is an overall plan of state regulation the state plan is exempt as are the activities of those conforming to that plan. *Parker v. Brown*, *supra*. Conversely the antitrust laws are not displaced where there is no overall plan of economic regulation,⁴⁹ where the state has no discernible legitimate interest,⁵⁰ or where the actions taken are unsupervised actions.⁵¹ When there is immunity for state action and activities of private parties pursuant to state requirement, the antitrust laws are displaced only insofar as necessary to make the state scheme work. *Lafayette v. Louisiana Power and Light*, 435 U.S. 389 (1978). Conduct that occurs beyond the requirements of a regulatory arrangement established by the state continues to be subject to the antitrust laws. *St. Paul Fire and Marine Ins. Company v. Barry*, 438 U.S. 531.

Thus it is clear that the mere existence of state regulation of the electric utility industry, by itself, is not sufficient to displace NRC's statutory antitrust responsibilities. The antitrust laws give way only if there is found to be a "plain repugnancy between the antitrust and regulatory provisions." *United States v. Philadelphia National Bank*, 374 U.S. 321, 351 (1963). Were no antitrust considerations able by law to survive the establishment of a state regulatory scheme, our construction permit stage review would in many states be futile and meaningless. But on the contrary, by statute, we review each CP application to ensure that insofar as possible activities under the license will be consistent with antitrust laws and the policies underlying them. What this means is that the Commission with the aid of the Department of Justice must choose the course of accommodation.

⁴⁹(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

Dealer's Association v. Midcal Aluminum, Inc., U.S. , 48 U.S.L.W. 4238 (March 3, 1980) the Court built upon the *Parker* analysis to deny state action immunity to a California program of resale price maintenance and price posting statutes for the wine business. In that case a state regulatory scheme failed to meet the second of two essential requirements. While (1) it was clearly and affirmatively articulated, the policy was not (2) actively supervised by the state itself.

⁴⁹See, e.g., *St. Paul Fire and Marine Ins. Company v. Barry*, 438 U.S. 531 (1979).

⁵⁰*Cantor v. Detroit Edison Company*, 428 U.S. 579 (1976).

⁵¹*Goldfarb v. Virginia State Bar*, 421 U.S. 773 (1975); *Schwegmann Brothers v. Calvert Corporation*, 341 U.S. 284 (1951).

Respect must be shown for a state's regulatory plan where it exists; however, procompetitive policies must be furthered when they are not in conflict with the state plan.

Although determinations of the extent to which the antitrust laws may be accommodated by state regulation must be made with sensitivity on a case-to-case basis, certain questions will serve as a litmus paper test in many situations. In evaluating whether activities or proposed activities conflict with the antitrust laws, the following tests are relevant. Has the licensee a free choice with respect to the activity in question, in the sense that the state is neutral with regard to the course chosen? Does the chosen course follow so naturally from activities required by the state that to apply an antitrust standard would work an unfairness on the licensee? In deciding whether a proposed procompetitive license modification is repugnant to the state scheme, variations of the preceding question should be asked: Could the licensee properly choose this course of action without conflicting with the state regulatory scheme? Would the modification if required be so unnatural in the regulatory setting as to work an unfairness on the licensee?

With this view of the law and the test for applying it, we return to the issues before us.

- a. Whether an antitrust review would be likely to conclude that the situation as changed has negative antitrust implications

Having determined that changes occurred within the relevant time and were sufficiently casually linked to Applicants to satisfy the causation criteria, we must make a threshold analysis of the competitive situation. In order to predict the outcome of review, we look to the same factors that would be analyzed during a full scale review after a significant changes determination had been affirmatively made.

In this posture, we seek the comment of the Department of Justice whether its threshold analysis of this matter leads it to believe that it would recommend a hearing were it to conduct a statutory OL *Summer* license review. We note that the legislative history reflects the Congressional intent that we consult with the Department of Justice⁵² in reaching our significant changes determination. We think Justice's proper role in the threshold process parallels what its role will be in the review process when a review is held. In the review process the analysis and recommendation of the Attorney General are critical to the decision of whether to hold a hearing and weigh heavily in the Commission's determination of what license conditions may be warranted. We ask the Attorney General, on the basis of our memorandum and order and the record in this matter that we forward

⁵²Report of Joint Committee, *supra*, at 29.

herewith, to provide us with his tentative views on whether a hearing would be required. We request this advice by 60 days from the date of this order.

In turning to Justice for its assistance, the Commission expresses the following views on the merits. It is beyond cavil that South Carolina has adopted a regulatory scheme in the power supply market, and that *Parker v. Brown* doctrine is properly invoked.³³ On the other hand, Applicants seem to possess considerable freedom of choice under the state regulation. They may choose whether to allow Central to participate in the facility itself and such a choice appears to have a neutral effect on the state plan. Similarly, Applicants seem to have considerable freedom in arriving at terms for transmission services.³⁴ Using our test, we find then that were activities in these areas to have anticompetitive implications, they could be properly considered by us and would require a determination as to whether the Commission has available remedies that it could require as license modifications were careful analysis to reveal that procompetitive policies would be aided thereby.

b. Are there available remedies?

As we have indicated earlier in this memorandum, we believe that the Congress did not intend for us to go forward with OL stage antitrust review without the likelihood that it would result in greater than *de minimis* license modifications. Consequently an inquiry must be directed toward resolving the question whether activities with anticompetitive implications that are revealed are susceptible to our remedy. In the case of any significant changes determination such an inquiry is required; however, in most cases it is to be presumed that the Commission will be able to tailor some relief. See, e.g., *Davis Besse, supra*. Where there is a state regulatory plan, *Parker* considerations require us to inquire whether the relief we would provide would be repugnant to the state plan or would be so unnatural under the plan as to work some other unfairness. If it would, it must be considered to be unavailable.

For the present, suffice it to say that the parties' representations that there have been negotiations for arrangements regarding participation in the facility and power transmission facilities are strong indications that

³³An issue was raised by Central whether the state's "authorization" of Santee Cooper's purchase of an interest was sufficient to invoke *Parker v. Brown* immunity in light of authorities holding that state command is essential. Where, as here, a public utility responsive only to direct legislative enactment is authorized to take action by the State legislature, that authorization is tantamount to command. Cf. *Princeton Community Phone Book v. Bate*, 582 F.2d 706 (3d Cir. 1978). However, since no claim appears to be made that the purchase of a share is in itself an anticompetitive act, this determination is not essential to our conclusions.

³⁴Based on the information before us we tentatively conclude that Central's dual rate claim is not meritorious, and that State requirements appear to preclude Santee Cooper's setting rates higher than their actual cost of service, so that no anticompetitive activity may be found here.

there is sufficient flexibility in the overall plan to accommodate at least some significant remedial modifications that the Commission might consider implementing were they determined to be warranted.

State of the Record

In referring these matters, by way of consultation, to the Department of Justice, we are aware that the record is stale. Most particularly because of Staff's and the Applicant's repeated reliance on assertions that good faith negotiation was proceeding and that offers were anticipated, we invite the parties to provide information with regard to any new developments to us and to the Department of Justice.

Furthermore, because we have established the criteria for a significant changes decision in our analysis of the instant matter, we request that the parties and the Attorney General provide us with any comment they might have on those criteria and how we have applied them in this memorandum. Comments should be filed within 30 days from the date of this order. We will consider such comments as well as the Department of Justice predictive comments on the merits before reaching a final decision.

Commissioner Gilinsky abstained from this memorandum and order.
It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 30th day of June 1980.

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. 45-02808-04

ATLANTIC RESEARCH
CORPORATION

Alexandria, Virginia

June 2, 1980

Upon Commission remand (CLI-80-7) of ALAB-542 for further consideration solely on the issue of mitigation of civil penalties imposed by the Director of the Office of Inspection and Enforcement (I&E) against the licensee in the amount of \$8,600, the Appeal Board reduces the penalties to \$2,000.

ATOMIC ENERGY ACT: CIVIL PENALTIES

Management culpability in connection with a serious violation of NRC regulations or license conditions by an employee of a licensee is not a prerequisite to the imposition of civil penalties against the licensee. It is enough that a violation has been established, that civil penalties may positively affect the conduct of the licensee or other similarly situated persons in accord with the policies in the Atomic Energy Act, and that civil penalties are not grossly disproportionate to the gravity of the offense. CLI-80-7, 11 NRC at 413.

ATOMIC ENERGY ACT: CIVIL PENALTIES

Management culpability in connection with a serious violation of NRC regulations or license conditions by an employee of a licensee is not a prerequisite to the imposition of civil penalties against the licensee. The lack of such culpability may, however, be taken into consideration as a mitigating factor.

ATOMIC ENERGY ACT: CIVIL PENALTIES

Under Commission regulations an adjudicatory hearing in a civil penalty proceeding is essentially a trial *de novo*. Subject only to observance of the principle that the penalty assessed by the I&E Director constitutes the upper bound of the penalty which may be imposed after that hearing, the Administrative Law Judge (and the Appeal Board and the Commission on review) may substitute their own judgment for that of the Director. 10 CFR 2.205(d), (e), and (f).

ATOMIC ENERGY ACT: CIVIL PENALTIES

Although not binding upon adjudicators, the schedule of civil penalties set out in the Inspection and Enforcement Manual is entitled to be given some attention and weight by them.

APPEARANCES

Dr. Coleman Raphael, Alexandria, Virginia, for the appellant, Atlantic Research Corporation.

Mr. James Lieberman (with whom **Mr. James P. Murray** was on the brief) for the Nuclear Regulatory Commission staff.

DECISION

This civil penalty proceeding involving the Atlantic Research Corporation (licensee) is before us for a second time. In May 1979, we concluded that the licensee was free of management culpability: on that basis, we overturned the decisions of the Administrative Law Judge¹ which had upheld the imposition by the Director of the Office of Inspection and Enforcement (I&E) of civil penalties against the licensee in the total amount of \$8,600. ALAB-542, 9 NRC 611. Earlier this year, on the NRC staff's appeal, the Commission held, contrary to our own conclusion, that the licensee was liable for civil penalties in the agreed-upon circumstances of the case. CLI-80-7, 11 NRC 413 (1980). It accordingly vacated ALAB-542 and remanded the proceeding to us "for further consideration solely on the issue of mitigation" of the amount of the penalty. *Id.* at 430.

¹ALJ-77-2, 6 NRC 702 (1977); ALJ-78-2, 7 NRC 701 (1978).

At our invitation, both the licensee and the staff filed supplemental memoranda on that issue. The licensee urged that, "in the interest of justice," the civil penalty be mitigated "in its entirety."² The staff, on the other hand, asserted that the \$8,600 assessment reflected the "reasonable application of established [enforcement] policies" and, as such, should not be disturbed.³ These markedly different theses were thereafter explored in greater detail at an oral argument.

We have fully considered the views of the respective parties against the background of the Commission's decision in CLI-80-7 and our understanding of the principles which come into play in determining whether an assessed civil penalty should be mitigated. We find that there is warrant for partial — but not total — mitigation in this instance. More particularly, for the reasons hereinafter stated, we are reducing the total amount of the assessment against the licensee to \$2,000.

I

The civil penalties were assessed by the I&E Director by reason of the undisputed conduct of a radiographer engaged in activities covered by the byproduct material license held by Atlantic Research, his employer. As outlined in the Commission's decision, CLI-80-7, *supra*, 11 NRC at 415-416⁴

An employee-radiographer of the Atlantic Research Corporation, the corporate licensee, was assigned to perform certain radiographic operations for the Licensee at the Licensee's cobalt-60 radiographic facility during the early hours of Sunday, December 12, 1976. The radiographer entered the radiographic facility, without wearing a film badge, pocket chamber, or pocket dosimeter, tested the alarm system, set up the first shot, and then opened the interlocked door because the room was uncomfortably warm. The radiographer was accompanied by another employee, a technician working on the project, who was not a radiographer and who had not been issued a film badge, a pocket chamber, or pocket dosimeter. Because the interlocked door had been propped open, the alarm system horn sounded as designed; the radiographer turned off the alarm system at the control panel because the sound of the horn annoyed him.

The radiographic exposures continued with the alarm system turned off. At the end of the fifth shot, the radiographer inadvertently failed to crank the source into the shielded position. Both individuals then reentered the radiographic cell, replaced the exposed film with a new cassette, set up another shot, and returned to the control room for the sixth and final shot. The total time in the cell with the unshielded source was about 60 seconds. A survey meter was apparently taken

²*Licensee Brief for Mitigation*, dated April 10, 1980, at 4.

³*Staff Views on Mitigation*, dated May 2, 1980, at 8.

⁴As the Commission noted, the summary was drawn from the staff's brief before it. The events are also described in some detail in the first decision of the Administrative Law Judge. See ALJ-77-2, *supra*, 6 NRC at 703-05.

into the cell between radiographic exposures but the radiographer could not recall observing the meter reading.

At the beginning of the sixth shot, the radiographer realized from the source crank position that the Co-60 source had been unshielded during the last entry. He also realized that he and the project technician were not wearing film badges or any other type of personnel monitoring device. The radiographer then notified his supervisor, finished the last exposure, secured the facility and returned to the radiation safety office. The radiographer did not record his name and the date of the radiographic operation tests he conducted in the utilization log. He also did not record the final radiation survey when the source was secured after the last radiographic exposure. Due to the lack of dosimetry during the incident, doses were estimated using T.L.D. (thermoluminescent dosimeter) measurements. These measurements showed the radiographer received $1,250 \pm 15\%$ rem dose to the left thumb and $9.2 \pm 15\%$ rem dose to the whole body (lens of eyes). The project technician received a dose to the whole body (lens of eyes) of $4.4 \pm 15\%$ rem. The extremity dose to the radiographer was later substantiated with the development of erythema to the left thumb and first two fingers, and dry desquamation of the tip of the left thumb.⁵

CLI-80-7 further contains (11 NRC at 416 fn. 4) this summary of seven items of non-compliance which the I&E Director discerned from this episode, and the penalty which he determined appropriate in the instance of each of those items:⁶

(1) Very high exposure of radiation (a radiographer received approximately 1250 rems to portions of one hand and approximately 9.2 rems to the whole body; another non-radiographer employee received a whole body dose of approximately 4.4 rems), a violation, in noncompliance with 10 CFR 20.101(a) (\$2,000 civil penalty); (2) radiographer's failure to make surveys to determine that the source was returned to its shielded position prior to entering the radiographic cell, a violation, in noncompliance with 10 CFR 34.43(b) (\$2,000 civil penalty); (3) radiographer's intentional defeat of the automatic alarm system, a violation, in noncompliance with license condition 16, procedures 6a, item 3 (\$2,000 civil penalty); (4) radiographer's failure to wear and (5) to require the non-radiographer to wear either a film badge or a pocket dosimeter (or pocket chamber), both infractions, in noncompliance with 10 CFR 34.33(a) and license condition 16, procedure 6(d) respectively (\$1,000 each civil penalty); (6) radiographer's failure to maintain the "utilization logs;" and (7) radiographer's failure to make a record of the required surveys, both deficiencies, in noncompliance with 10 CFR 34.27, 10 CFR 34.43(d) and license condition 16, operating procedure 9.1.2(c) respectively (\$300 each civil penalty).

In ALAB-542, we had found no occasion to focus upon either the precise nature of the radiographer's derelictions or the details of the I&E Director's penalty computation. Although recognizing that the "transgressions were

⁵To put the staff's medical terminology into layman's terms, several of the radiographer's fingers turned red and there was peeling of the skin on the tip of his thumb.

⁶See also, ALJ-77-2, *supra*, 6 NRC at 705-06. With respect to an eighth item, no penalty was assessed.

major ones...in the form of excessive radiation exposure (principally to the errant employee himself),”⁷⁹ we held that nonetheless the imposition of any civil penalty against the licensee was foreclosed as a matter of law. This conclusion rested upon “the absence of any assertion by I&E (let alone an adjudicatory finding) either (1) that management malfeasance, misfeasance, or nonfeasance contributed in any way to the license violations; or (2) that the licensee failed to take prompt and corrective action to obviate a repetition of the occurrence.” 9 NRC at 613-14.

The Commission, however, saw the matter otherwise. Its decision plainly teaches that management culpability in connection with a serious violation of NRC regulations or license conditions by an employee is not to be taken as an absolute prerequisite to the imposition of civil penalties against the licensee-employer. As the Commission put it, it is enough that “a violation has been established, that civil penalties may positively affect the conduct of the licensee or other similarly situated persons in accord with the policies in the Atomic Energy Act, and that civil penalties are not grossly disproportionate to the gravity of the offense....” CLI-80-7, 11 NRC at 417.

As we read our present mandate, however, there is nevertheless room for taking into account the management culpability factor in determining whether, and if so to what extent, the assessed civil penalties should be mitigated. At least two considerations support that conclusion.

First, had the Commission thought that the appropriate amount of the penalty is to be determined by reference solely to the gravity of the radiographer’s misconduct, it seems scarcely likely that there would have been a remand for the purpose of considering whether to “mitigate,” *i.e.*, to reduce,⁸⁰ the \$8,600 assessment. This follows not only from the lack of any dispute about the seriousness of the radiographer’s offenses, but also from the last paragraph in CLI-80-7. The Commission there announced that it

⁷⁹ NRC at 619.

⁸⁰ In contemplation of law, the term “mitigation” has the settled meaning of the “[a]lleviation, reduction, abatement or diminution of a penalty or punishment....” *Black’s Law Dictionary* (Fifth Ed. 1979), at 904. See also, to the same effect, *Webster’s Third New International Dictionary*, at 1447. Absent contrary indication, the Commission must be understood to have so employed the term in CLI-80-7. Beyond that, NRC staff counsel explicitly acknowledged the oral argument on remand (App. Tr. 47-48) that an *increase* in the amount of the assessed civil penalties is legally foreclosed by 10 CFR 2.205, taken in conjunction with the I&E Director’s March 28, 1977 Order Imposing Civil Monetary Penalties and the Commission’s April 8, 1977 notice of hearing on that order. In view of the agreement of the parties on that matter, and the Commission’s own apparent recognition that the assessed penalties can now be reduced but not increased, we see no need to belabor the point here. It suffices to note that Section 2.205(f) in terms provides that, if a hearing is held at the licensee’s request, “an order will be issued after the hearing by the presiding officer or the Commission dismissing the proceeding or imposing, mitigating, or remitting the civil penalty.” In context, it seems quite clear that the Section has in mind the civil penalty of the amount imposed by the office director.

was calling upon us to “consider whether the circumstances of this case would justify mitigation of the amount of the penalty...although the \$8,600 civil penalty was not the largest that might have been levied *and could be viewed as small due to the employee’s deliberate disregard for safety systems*” (emphasis supplied).⁹ Given this appraisal, it is reasonable to suppose that a Commission judgment that only the radiographer’s actions were of relevance on the mitigation question would have produced a summary determination that no reduction in the \$8,600 assessment was justified — thus bringing this already lengthy proceeding to an end without the necessity of further briefing, argument and opinions.

Second, and perhaps of yet greater significance, in his concurring opinion Commissioner Hendrie stated:

Where licensee management has taken proper steps to assure that employees observe license conditions and regulations and a violation occurs, I believe that the licensee’s efforts should be recognized in terms of any civil penalty which may be assessed. *I expect that the Appeal Board will do that in this case.*

11 NRC at 427 (emphasis supplied). To be sure, Commissioner Hendrie was writing for himself alone and his vote was not necessary to form a majority for the result which was reached in CLI-80-7.¹⁰ It may be fairly presumed, however, that the Commissioners who subscribed to the majority opinion were aware of his articulated expectation regarding what would be done on the remand and, if in disagreement with him, would have said so equally explicitly. That that opinion does not even hint of such disagreement gives us confidence that, on that question at least, all of the Commissioners were of one mind.

⁹11 NRC at 431.

¹⁰Although, because of the absence of certain Commissioners when the formal vote was recorded at 2-1, in actuality four Commissioners had decided to join in the vacatur of ALAB-542 and the remand to us for further consideration of the mitigation question. See CLI-80-7, 11 NRC at 431 fn. *. Commissioner Kennedy dissented; he would have affirmed our decision.

II

We thus now turn to the question whether — taking all pertinent factors into account (including both the seriousness of the misconduct¹¹ and the want of management culpability¹²) — the interests of justice would be best served by mitigating the \$8,600 civil penalty.

A. In confronting that question, we are obliged at the outset to ascertain the standard to which we should resort. In this connection, as was noted in ALAB-542 (9 NRC at 617), the I&E Director has issued a manual which contains, *inter alia*, the criteria which he uses for determining not merely whether a civil penalty should be imposed for a particular dereliction but, as well, what its amount should be. These criteria will be later discussed in greater detail (see at 617, *infra*); it is enough for present purposes to note that each of the penalties assessed by the Director here appears to be within the monetary range prescribed by the manual — and, indeed, at the lowest point in that range. The staff seized upon that fact in urging, both in its supplemental memorandum (at 6) and at argument (App. Tr. 3-4), that we should look upon the Director's assessment as reflecting that he has, by application of "established policies," already given full recognition to the "mitigating factors;" *i.e.*, to "the lack of direct management involvement, good enforcement history, the lack of repetitive items of noncompliance, the promptness of corrective action."

Although thus maintaining that the Director properly exercised his discretion, the staff does not contend that our review is necessarily governed by an "abuse of discretion" standard. We were told by its counsel at argument that the staff would also have no objection were we, instead, to put ourselves in the place of the Director and, "apply[ing] his policies and procedures," exercise our own judgment as to the appropriate civil penalty

¹¹No one, including the licensee, disputes that it was serious.

¹²We do not read the Commission's decision as overturning our conclusion (based upon the stipulated facts) that there was no such culpability. At one point, the Commission did observe that, after the event, the licensee had "instituted procedures that are designed to obviate a repetition of the incident." 11 NRC at 424. It hastened, however, to "emphasize that we are not using the licensee's subsequent improvements of its procedures to establish culpability but we are taking note of it as further evidence that conduct may be improved in general in response to strong enforcement actions such as that proposed here." *Id.* at fn. 19. At another point (fn. 9) the Commission took issue with the weight which we had attached in ALAB-542 to a statement made by the I&E Director at the mitigation hearing before the Administrative Law Judge. But while determining that that statement "was not meant to completely absolve the management from culpability," the Commission did not suggest that there were disclosures of record which affirmatively indicated the existence of culpability. Our own reexamination of the matter on this remand has disclosed nothing which would lead us independently to alter our prior judgment that, insofar as this record reveals, the fault lay with the radiographer exclusively.

(App. Tr. 4). The staff also acknowledged a third possible option: we might arrive independently at the amount of the penalty by applying our own judgment without regard to the Director's policies (App. Tr. 5).¹³

The choice among these alternatives is not a difficult one in light of our decision last year in *Radiation Technology, Inc.*, ALAB-567, 10 NRC 533. One of the assertions advanced by the licensee in that civil penalty proceeding was that the I&E Director's decision to proceed against it rested upon "off-the-record," *ex-parte* reports made by NRC safety inspectors. Complaining that it had had no opportunity to cross-examine the Director to determine whether he had been improperly influenced by those reports, the licensee insisted that it had been denied due process. This was because the "ultimate fact finder" had been privy to "allegations not on the record." 10 NRC at 536.

By way of response, the staff pointed out that, "[o]nce that Licensee requested a hearing, it became the responsibility and duty of the...Administrative Law Judge to decide the case anew. The Director was no longer the decisionmaker." Upon the receipt of all of the evidence bearing upon the existence of the alleged violations and "any mitigating circumstances," "[t]he Administrative Law Judge then had to arrive at a decision on whether the violations occurred, [and] whether *and in what amount* a civil penalty should be imposed" (emphasis supplied). In making that determination, "the Administrative Law Judge was not bound by the Director's imposition of a \$4,800 penalty, although one purpose of the staff's testimony was to persuade the Administrative Law Judge that a \$4,800 penalty was appropriate under the circumstances."¹⁴

We expressly agreed with the staff's position. Rejecting the licensee's due process claim as resting upon a "misconception," we said:

The Director is not the ultimate fact finder in civil penalty matters. Commission regulations afford one from whom a civil penalty is sought the right to a hearing on the charge against it. 10 CFR 2.205(d) and (e). At that hearing, the Director must prove his allegations by a preponderance of the reliable, probative, and substantial evidence. It is the presiding officer at that hearing, not the Director, who finally determines on the basis of the hearing record whether the charges are sustained and civil penalties warranted. 10 CFR 2.205(f).

10 NRC at 536-37.

¹³Staff counsel observed that, were that option selected, we would be bound by any limitations imposed by the Commission in remanding the case and, additionally, could not increase the amount of the penalty assessed by the Director. See fn. 8, *supra*.

¹⁴Staff's *Brief Opposing Licensee's Exceptions to the Initial Decision in Radiation Technology, Inc.*, dated April 16, 1979, at 75-76. The \$4,800 penalty had been based upon nine asserted derelictions. Because the Administrative Law Judge upheld only seven of the nine charges, the total penalty was reduced by him (without mitigation) to \$3,300. See fn. 19, *infra*.

In short, *Radiation Technology* teaches that — as the staff itself there stressed — the adjudicatory hearing in a civil penalty proceeding is essentially a trial *de novo*. Subject only to observance of the principle that the penalty assessed by the I&E Director constitutes the upper bound of the penalty which may be imposed after that hearing, the Administrative Law Judge (and this Board and the Commission on review) may substitute their own judgment for that of the Director. Stated otherwise, if deemed to be warranted in the totality of circumstances, the adjudicator is entirely free to mitigate or remit the assessed penalty. 10 CFR 2.205(f); see fn. 8, *supra*.

This does not mean that the schedule of civil penalties set out in the Inspection and Enforcement Manual¹⁵ amounts to so much wasted ink. In the interest of achieving general equality of treatment among offending licensees (and of putting those licensees on fair advance notice of the dimensions of the enforcement action which may be instituted against them by I&E), there is much to be said for the adoption of such a schedule and its use by the Director and his subordinates. And, even though it does not have the force of a regulation,¹⁶ should the quantum of the penalty end up in dispute the same considerations militate in favor of the adjudicators according the schedule some attention and weight. But to bear the schedule in mind is not to give it necessarily conclusive effect. As the ultimate decisional authority, with the expressly conferred power to mitigate or remit a penalty assessed by the Director on the basis of the schedule, the adjudicators manifestly must be thought to have the latitude to effect a reduction to a level below the schedule range. Whether that discretion should be exercised (either by the Administrative Law Judge or a reviewing tribunal) will, of course, hinge upon the facts of the specific case.

B. Chapter 0800 of the Inspection and Enforcement Manual is concerned with enforcement actions. It begins by assigning all “items of noncompliance” (*i.e.*, “the failure to comply with a regulatory requirement”) to one of “three categories of severity: violations, infractions, and deficiencies.”¹⁷ The schedule of civil penalties for each category is set out in Table II,¹⁸ following Section 0855.06. As is seen from the Table, different ranges are provided for the various types of licensees, from power reactor operators to medical and academic licensees. For radiographer licensees

¹⁵See at 850 *infra*.

¹⁶The staff so conceded when this proceeding was previously before us. See ALAB-542, *supra*, 9 NRC at 613 fn. 4.

¹⁷Section 0802.03. The categories are listed in descending order of severity. What is included in each is set forth, respectively, in subsections .04, .05 and .06 of Section 0802. The text of those subsections is included in the appendix to this opinion, *infra*, at 856.

¹⁸That table also is reprinted in full in the appendix, *infra* at 859.

with more than ten employees (e.g., the licensee here involved), the specified range is:

Violations	--	\$2000-\$3000
Infractions	--	\$1000-\$2000
Deficiencies	--	\$ 300-\$ 500

As already seen (at 844 *supra*), this licensee was assessed with penalties for a total of three violations, two infractions and two deficiencies. And, in each instance, the assessment was the schedule minimum: \$2000 per violation; \$1000 per infraction, and \$300 per deficiency. Once again, this result is said to have stemmed from the Director's application of the "mitigating factors" such as lack of management culpability.

1. We must dismiss summarily the licensee's argument that the civil penalties should be mitigated in full. In its supplemental memorandum, the licensee placed almost exclusive reliance upon the point emphasized by it throughout the proceeding: *viz.*, that the incident is not attributable to fault on its part. Although that factor struck a responsive chord with us when ALAB-542 was rendered last year, it obviously no longer can carry the day in view of the Commission's intervening decision. True, that decision leaves room for consideration of the management culpability factor in determining whether *some* measure of mitigation is justified. But violence would be plainly done to both the Commission's analysis and our obligation to fulfill its commands were we to conclude anew that the absence of licensee fault precludes the imposition of *any* monetary sanction for the serious transgressions of the radiographer.

For like reasons, we are unable to accept the licensee's alternative suggestion at argument that the civil penalties should be mitigated in their entirety because it has already paid a severe price for those transgressions — in the form of the impressing of a "black mark" on its assertedly otherwise unblemished reputation (App. Tr. 69-72). Presumably, the Commission was aware that, of itself, a finding of a license violation adversely affects a licensee which has a previously clean compliance record. It seems equally implicit in what was said in CLI-80-7, however, that this consideration was not deemed to be of sufficient deterrent value to serve as a total substitute for the imposition of a monetary sanction. At the most, then, it can be looked upon by us simply as one of the myriad factors bearing upon whether there should be some mitigation of the assessed civil penalties.

2. While thus casting aside the proposition that there both can and should be a reaffirmation of the ultimate result reached in ALAB-542 — *i.e.*, no penalties at all — we do find ample cause for substantial mitigation. More particularly, all things taken into account, it seems to us that a penalty in the aggregate amount of \$2,000 will in this instance both (1) achieve the intended objective of focusing the attention of NRC licensees generally upon the importance of scrupulous compliance by their employees with all regulatory requirements; and (2) give deserved recognition not merely to the apparent lack of management culpability but, as well, to the constructive attitude which this licensee has manifested with respect to the fulfillment of its obligations under the Commission's regulations.¹⁹

To be sure, if the radiographer's misconduct is properly viewed (as it was by the I&E Director) as involving seven distinct transgressions for which seven separate penalties should be imposed, the consequence is that we are going below the lower limit of the various penalty ranges set out in the manual schedule. But, once again, the schedule is not binding upon us. (Indeed, if it were, there would be no room for any reduction of the \$8,600 aggregate penalty at all, inasmuch as each of its components represented the minimum provided by the schedule for the particular dereliction involved.) As it appears to us, we would be unfaithful to the discharge of our independent responsibilities were we not to give expression to our judgment respecting the sanction which will best serve the ends of justice. Although that judgment obviously has subjective elements, this is always the situation in the confrontation of questions of penalty mitigation. It should be sufficient that, as we are satisfied is so here, the record provides a rational foundation for the conclusion which we have reached.

There is, however, a different perspective from which the case might be viewed, which in turn would reconcile our mitigation determination with the manual schedule. Common experience suggests that the series of transgressions committed by the radiographer stemmed from the single

¹⁹On the latter score, the licensee's actions — not just its words — are persuasive that it has neither minimized the gravity of what its employee did nor failed to apprehend the need to do all that might be required to obviate a repetition. We might add that this is in sharp contrast to the impression left with us by the licensee in *Radiation Technology*, ALAB-567, *supra* (see particularly 10 NRC at 553), which had received a penalty totaling \$3,300 for seven established derelictions (all of which could be laid directly at the management's doorstep). It is true that no undue radiation exposure had resulted therefrom. This was, however, wholly fortuitous; it is manifest from the description of the derelictions in ALAB-567 (10 NRC at 535) that most of them had very serious potential consequences along that line. In this regard, staff counsel here told us at oral argument that, in assessing civil penalties for "an item of non-compliance" (*i.e.*, a "violation," an "infraction" or a "deficiency"), "[t]he issue is not the amount of the overexposure, it is the potential for an overexposure" (App. Tr. 15-16; see also *id.* at 26). We agree with that view of the matter.

personal problem which was then troubling him²⁰ and in that context might fairly be regarded as a single transaction on his part. True, the licensee is ultimately responsible for all the violations and there is no doubt that, as a matter of law, each can be the subject of a separate penalty. But here the miscreant's employer in no way encouraged or condoned the misconduct and it all occurred in a very brief period before preventive steps could be taken.²¹ As a matter of equity, then, there is at least some reason here to deal with the employer — for mitigation purposes only — as though its errant employee's chain of infractions constituted but a single accident.²² Under this "one violation" view, the Director's own criteria would support a penalty of \$2,000 (see at 617, *supra*).²³

²⁰See the transcript of the June 2, 1977 pre-hearing conference, at 24-25; and the transcript of the January 31, 1978 mitigation hearing, at 93.

²¹The events took place in a two-hour period after midnight on a Sunday. The radiographer was permanently removed from his job that afternoon. June 2, 1977 Tr. at 7; January 31, 1978 Tr. at 51, 61, 103-04.

²²Lest we be misunderstood, we stress again the unusual nature of the facts here; the record depicts a trusted, well-trained and theretofore dependable employee suddenly and briefly departing from prescribed practices. June 2, 1977 Tr. at 6-7; January 31, 1978 Tr. at 103-04. Viewing his conduct as a single course of action does not mean that other types of violations, involving different circumstances, would induce us to take a similar approach to mitigation.

²³There is one other point which is worthy of mention, even though our result does not hinge upon it. As has been seen (at 853 *supra*), a crucial element of the incident in question was the ability of the radiographer to turn off the alarm system with little difficulty. (Indeed, it seems highly unlikely that there would have been any radiation exposure at all had the employee not found it so easy to defeat that system.) In that circumstance, given I&E's presumed interest in avoiding a repetition of this type of occurrence (which interest assertedly is at the root of the civil penalty assessment here), one might have thought that guidance respecting the proper wiring of alarm systems would have been furnished licensees generally. We thus asked staff counsel to inform us at oral argument whether this had been done. May 5, 1980 order (unpublished) at 2. The staff responded by furnishing us with copies of two documents which had dealt with the incident at bar: *Report to Congress on Abnormal Occurrence, October-December 1976* (NUREG-0090-6); *Public Meeting on Radiation Safety for Industrial Radiographers*, (NUREG-0495). The first of these documents apparently was not routinely furnished to all radiography licensees (App. Tr. 31-32). Although the second was so furnished (App. Tr. 33), the discussion in it of this incident (as one of thirteen "case histories") was quite brief and concluded with the simple notation (at 38) that the "incident would have been avoided had the radiographer followed procedures and if management controls had existed to assure he followed procedures." Leaving aside that the second part of the statement is difficult to square with the stipulated facts before us, this scarcely served as advice to licensees that alarm systems should be hard-wired to make disconnection more difficult to achieve. It is, of course, not our function to instruct the I&E Director respecting the guidance which his office should supply directly to licensees by means of bulletins and circulars (or other broadly-disseminated documents such as information notices). We must say, however, that the absence of such guidance with regard to the hard-wiring of alarm systems brings at least into question the importance attached by I&E to preventing a repetition of what transpired in this instance. And this consideration certainly is relevant (albeit not dispositive) on the question of the amount of the civil penalty which would ultimately be assessed in the interest of deterring future occurrences of a similar nature.

The \$8,600 civil penalty assessed by the Director of the Office of Inspection and Enforcement is *reduced* in amount to \$2,000.
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the
Appeal Board

Opinion of Dr. Buck, concurring in part and dissenting in part:

I am in basic agreement with the reasons assigned by my colleagues for mitigating the \$8,600 civil penalty originally assessed against Atlantic Research. But I believe their conclusion that a civil penalty of \$2,000 should be now imposed is arbitrary and does not properly consider the entire circumstances of this case. In my judgment, the assessed monetary penalty should be remitted in its entirety.

Obviously, the Commission's decision (CLI-80-7) teaches that this licensee must bear legal responsibility for the incident and, as a consequence carry the violation on its record. But it does not perforce follow that a civil penalty must or should be imposed.

My colleagues take note of the fact that the transgressions occurred when a long-term, well-trained and trusted employee was called in for a special project late at night when (unknown to his employer) he was confronted with serious personal problems. For this reason, my colleagues conclude that the incident can appropriately be viewed (for penalty mitigation purposes) as one violation and for this one violation they assess a \$2,000 civil penalty. While I agree with the appraisal that the incident can properly be viewed as a single violation, I do not concur in their further judgment that this calls for a civil penalty. That judgment, as I see it, neither gives proper weight to the licensee's attitude and past performance nor attaches adequate significance to the total lack of management involvement in this particular incident.

As my colleagues point out in their extensive fn. 23, at 851, *supra* "a crucial element of the incident in question was the ability of the radio-grapher to turn off the alarm system *with little difficulty*"¹ (emphasis added). However, the licensee's system was fully in compliance with the staff criteria at the time of the incident and still would have been if it had remained unchanged until early 1980 when the staff finally issued a regulation concerned with the matter. See App. Tr. 34. In other cases, moreover, the Director of I&E has remitted the entire monetary penalty even with known management involvement.² One must also compare the present proceeding with the situation in the *Radiation Technology* case discussed by my colleagues (at fn. 19, at 851, *supra*,) where a penalty of \$3,300 was

¹See my remarks on this subject during the oral argument last year when the licensee's appeal was first before us (at Tr. 88-89).

²The example given by staff counsel at oral argument (App. Tr. 24-27) concerned a case where management neglected to obtain the facility key from an employee when he was fired. He later entered the facility by the use of that key and was found intoxicated near a radioactive source. It is unknown as to the radiation he received but the potential for serious overdose is apparent.

imposed for seven derelictions "all of which could be laid directly at the management's doorstep."

In my opinion the only fair and nonarbitrary decision in this proceeding (in view of the record of no management involvement and where the incident was caused by the temporarily disturbed, valuable, and trusted employee) is to remit the monetary penalty in its entirety.

APPENDIX

Excerpts from the Inspection and Enforcement Manual Issued by the NRC Office of Inspection and Enforcement

Section 0802

Definitions

• • • •

.04 Violation

A violation is an item of noncompliance of the type listed below, or an item of noncompliance (1), which has caused, contributed to or aggravated an incident of the type listed below, or (2) which has a substantial potential for causing, contributing to or aggravating such an incident or occurrence; e.g., a situation where the preventive capability or controls were removed or otherwise not employed and created a substantial potential for an incident or occurrence with actual or potential consequences of the type listed below:

- (a) Exposure of an individual in excess of the radiation dose specified in 10 CFR 20.403(b) or exposure of a group of individuals resulting in each individual receiving a radiation dose which exceeds the limits of 10 CFR 20.101 and a total dose for the group exceeding 25 man-rems.
- (b) Radiation levels in unrestricted areas which exceed 50 times the regulatory limits.
- (c) Release of radioactive materials in amounts which exceed specified limits or concentrations of radioactive materials in effluents which exceed 50 times the regulatory limits.
- (d) Fabrication, or construction, or testing or operation of a Seismic Category I system or structure in such a manner that the safety function or integrity is lost.
- (e) Failure to function when required to perform the safety function or loss of integrity of a Seismic Category I system, or structure; or other component, system, or structure with a safety or consequences limiting function.
- (f) Exceeding a safety limit as defined in technical specifications associated with facility licenses.
- (g) Industrial sabotage of utilization or fuel facilities.

- (h) Radiation or contamination levels in excess of limits on packages or loss of confinement of radioactive materials in packages offered for shipment on a common carrier.
- (i) Diversion or theft of plutonium, uranium 233, or uranium enriched in the isotope U-235.
- (j) MUF or LEMUF exceeds any applicable limit by a factor of two.
- (k) All security barriers or controls removed or inoperative and there is unimpeded access to a vital area.
- (l) Other similar items of noncompliance having actual or potential consequence of the same magnitude.

Failure to report the above items as required constitutes a violation of the same importance level.

.05 Infractions

An infraction is an item of noncompliance of the type listed below, or an item of noncompliance (1) which resulted in a reduction of preventive capability below requirements but redundant controls precluded an item of noncompliance of the violation category, or (2) which caused, contributed to or aggravated such an incident or occurrence; e.g., the preventive capability or controls were removed or otherwise not employed and there was substantial potential for an incident or occurrence with actual or potential consequences of the type listed below:

- (a) Exposure of an individual or groups of individuals to radiation in excess of permissible limits but less than the values in 10 CFR 20.403.
- (b) Release of radioactive materials in concentrations or rates which exceed permissible limits but in amounts less than permissible limits.
- (c) Failure to function or loss of integrity of a Seismic Category I system or structure, or other component, system, or structure with safety or consequences limiting function during test; or failure to meet surveillance frequencies.
- (d) Fabrication, or construction, testing or operation of a Seismic Category I system or structure in such a manner that the safety function or integrity is impaired.
- (e) Exceeding limiting conditions for operation (LCO).
- (f) Inadequate management or procedural controls in the QA implementation.
- (g) Safety system settings less conservative than limiting safety system settings.

(h) MUF or LEMUF exceeds any applicable limit by any amount up to a factor of two.

(i) Security degraded or impaired by removal or impairment of a required barrier or control but a redundant system operative.

(j) Exceeding limits or limiting conditions for operation in licenses, technical specifications, guides, codes, or standards which are imposed for the purpose of minimizing adverse environmental impact.

(k) Other similar items or noncompliance having actual or potential consequences of the same magnitude.

Failure to report the above items as required constitutes an item of noncompliance of the same category.

.06 Deficiency

A deficiency is an item of noncompliance in which the threat to the health, safety, or interest of the public or the common defense and security is remote; and no undue expenditure of time or resources to implement corrective action is required; and deficiencies include such items as noncompliance with records, posting, or labeling requirements which are not serious enough to amount to infractions.

Failure to report deficiencies as required constitutes an item of noncompliance of the same category.

TABLE II

SCHEDULE OF CIVIL PENALTIES FOR NRC LICENSEES

For Construction, Startup or Operation of Reactors, Fuel Fuel Facilities or Material Programs	Safeguards and Physical Security	Range of Monetary Penalty Per Item of Noncompliance
1. Power Reactors and Irradiated Fuel Reprocessors	1. Power Reactors and Irradiated Fuel Reprocessors	
Violations Infractions Deficiencies	Violations Infractions Deficiencies	\$4000 - 5000 3000 - 4000 1000 - 2000
2. Test Reactors, Fuel Processors	2. Processing and Fabrication Fuel Facilities (High Enriched >20% U-235)	
Violations Infractions Deficiencies	Violations Infractions Deficiencies	3000 - 4000 2000 - 3000 500 - 1000
3. Research Reactors, Major Distributors, Radiographer Licensees With More Than Ten Employees, Waste Burial Firms, Uranium Mills and Uranium Conversion or Feed Plants	3. Processing and Fabrication Fuel Facilities (Low Enriched <20% U-235)	
Violations Infractions Deficiencies	Violations Infractions Deficiencies	2000 - 3000 1000 - 2000 300 - 500
4. Critical Experiment Facilities, Radiographer, Licensees With No More Than Ten Employees, Other Industrial Licensees, and Persons Without a License	4. Small Scale R & D Facilities (Nonproduction)	
Violations Infractions Deficiencies	Violations Infractions Deficiencies	1000 - 2000 500 - 1000 50 - 500
5. Medical, Academic and Other Licensees	5. Medical, Academic and Other Licensees	
Violations Infractions Deficiencies	Violations Infractions Deficiencies	500 - 1000 300 - 500 50 - 100

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. Lawrence R. Quarles
Michael C. Farrar

In the Matter of

Docket No. 50-358 OL

**THE CINCINNATI GAS AND
ELECTRIC CO. *et al.***

**(Wm. H. Zimmer Nuclear
Power Station)**

June 9, 1980

The Appeal Board dismisses the applicant's premature appeal of the Licensing Board's conditional grant of an untimely intervention petition (LBP-80-14, 11 NRC 570 (1980)), without prejudice to renewal of the appeal upon occurrence of the condition.

**RULES OF PRACTICE: NON-TIMELY INTERVENTION
PETITIONS**

The granting of a late intervention petition turns on a licensing board's evaluation of factors specified in 10 CFR 2.714(a), the first of which is whether there exists good cause for the failure to file on time.

RULES OF PRACTICE: INTERLOCUTORY APPEALS

The Commission's Rules of Practice discourage piecemeal appellate review and generally proscribe appeals from interlocutory orders. 10 CFR 2.730(f). One exception is that the grant of a petition to intervene is appealable immediately on the question whether the petition should have been wholly denied. 10 CFR 2.714a(c).

RULES OF PRACTICE: INTERVENTION

Under 10 CFR 2.714a, an appeal from a Licensing Board order on a intervention petition must await the ultimate grant or denial of that petition.

RULES OF PRACTICE: INTERVENTION

A licensing board order which determines that a petitioner seeking to intervene has demonstrated standing to be heard and good cause for being late, but has not passed on the acceptability of contentions, is not a final disposition of the intervention petition for the purposes of 10 CFR. 2.714a.

APPEARANCES

Messrs. Troy B. Conner, Jr., and Mark J. Wetterhahn, Washington, D.C., for applicants, The Cincinnati Gas and Electric Company *et al.*, appellants.

Mr. Andrew B. Dennison, Batavia, Ohio, for petitioners, Zimmer Area Citizens and Zimmer Area Citizens of Kentucky, appellees.

Mr. Charles A. Barth for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

The Licensing Board ruled on April 22, 1980 that two local citizens' groups, Zimmer Area Citizens and Zimmer Area Citizens of Kentucky ("ZAC-ZACK"), could intervene out of time in this operating license proceeding, subject to their "submission of at least one adequate contention." LBP-80-14, 11 NRC 579. The Board has not yet determined whether any of petitioners' contentions are admissible. On May 8th, the applicants (The Cincinnati Gas and Electric Company and other utilities associated with the Zimmer facility) filed a notice of appeal from the April 22nd ruling. The petitioners and the staff urge that appeal be dismissed as premature because the order it challenges is not one "granting a petition for leave to intervene" from which an interlocutory appeal — otherwise precluded under the Rules of Practice — may be taken. 10 CFR 2.714a(c).

I

This proceeding began some four years ago and intervention petitions were initially due in October 1975.¹ ZAC-ZACK was formed in March 1979 and petitioned to intervene in March 1980. Its principal areas of concern involve emergency planning, evacuation and radiological monitoring.² The granting of a late intervention petition turns on a licensing board's evaluation of factors specified in 10 CFR 2.714(a), the first of which is whether there exists "[g]ood cause, if any, for [the] failure to file on time."³ For purposes of this appeal we may simply note that the petitioners' "good cause" argument, which the staff supported and the Board below accepted, was essentially that prior to very recent changes in Commission policy and criteria on emergency planning, consideration of many of petitioners' concerns and much of the relief they seek would have been foreclosed in these proceedings.⁴ After considering the other factors bearing on whether to allow late intervention,⁵ the Licensing Board concluded that the balance of considerations favored admitting the petitioners to the proceeding.⁶

The petitioners' intervention papers did not set forth the precise contentions they wished to litigate. The Board below recognized that submission of at least one adequate contention was a prerequisite to intervention in this Commission's adjudicatory proceedings.⁷ It therefore gave petitioners 20 days to formulate appropriate contentions and to serve them on the applicants and staff, allowing those parties 20 days more in which to attempt to reach agreement on the acceptability of petitioners' contentions before the Board would itself consider and rule on them. 11 NRC at 578. (As of this writing, petitioners have submitted their proposed contentions but the parties have not agreed on their acceptability;

¹LBP-80-14, 11 NRC 574.

²Ibid.

³10 CFR 2.714(a)(1)(i).

⁴They also cited the availability of other means whereby the petitioner's interest will be protected as justifying their intervention at this time. The point is stressed at length in the opinion below. 11 NRC at 574-575. In view of our disposition of this appeal, there is no occasion for us to discuss its merits.

⁵These are also set out in 10 CFR 2.714(a) and are:

- (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.

⁶11 NRC at 578-579.

⁷*Id.* at 571.

the Board itself has not acted.) The Board concluded its memorandum opinion by ruling:

Subject to its furnishing at least one adequate contention, ZAC-ZACK's petition for leave to intervene is *granted*.

This Order is subject to appeal pursuant to the terms of 10 CFR 2.714a. It will become final for purposes of appeal, however, only following our issuance of a further order accepting or rejecting contentions.⁸

Applicants' appeal followed.

II.

The Commission's Rules of Practice discourage piecemeal appellate review. For the most part, the Rules preclude taking an appeal from an interlocutory order entered during the course of a licensing proceeding. 10 CFR 2.730(f). An exception appears in 10 CFR 2.714a(c), which provides in pertinent part that "[a]n order granting a petition for leave to intervene...is appealable by a party other than the petitioner on the question whether the petition...should have been wholly denied."⁹ The principal issue before us is whether the order in question comes under that provision and is therefore appealable now.

As we mentioned, the Licensing Board conditioned its "intervention" ruling on petitioners' future submission of acceptable contentions and characterized its ruling as "final for purposes of appeal...only following...issuance of a further order accepting or rejecting [those] contentions;"¹⁰ a "further order" that the Board has not yet issued. The applicants, however, construe the Board's ruling as actually granting intervention, thereby making it appealable. They argue that the Board's requirement that petitioners submit acceptable contentions must be disregarded for purposes of section 2.714a(c), asserting that a licensing board may not "set conditions which, if enforced, would have the effect of preventing appeals from being taken." Applicants contend that even if the order is not "technically" final, it is so except in a "formalistic sense;" in either event, they urge us to review it now. We decline to do so.

In *Detroit Edison Company* (Greenwood Energy Center, Units 2 and 3), ALAB-472, 7 NRC 570 (1978), we faced a situation virtually identical to that presented here. *Greenwood*, like the instant case, involved a late petition to intervene in a licensing proceeding. In that case, as in this one, the

⁸*Id.* at 579-580.

⁹Orders denying petitions to intervene are also subject to interlocutory appeal. 10 CFR 2.714a(b).

¹⁰11 NRC at 580.

licensing board has ruled that the petitioner has demonstrated the requisite "interest" (*i.e.*, standing) to intervene and "good cause" for filing late, but the Board had not yet determined the adequacy of petitioner's contentions. There, as here, the applicants invoked section 2.714a(c) as a basis for taking an interlocutory appeal from the Licensing Board's ruling. We held in *Greenwood* that "[i]t is plain from the terms of 10 CFR 2.714a that an appeal thereunder must await the ultimate grant or denial of the intervention petition in question." We therefore dismissed the appeal as premature, albeit without prejudice to its renewal should the licensing board grant intervention after considering petitioner's contentions. 7 NRC at 571-72.

In our judgment, *Greenwood* is on all fours with this case both as to the issue it presents and the result which the law requires.¹¹ Applicants attempt to distinguish that case on the ground that the *Greenwood* board did not admit the petitioner as an intervenor but only indicated that it would not deny the petition just because it was late. But that is precisely purport of the Licensing Board order sought to be appealed in this case.

Applicants' argument boils down to the claim that 10 CFR 2.714 requires licensing boards to rule upon the adequacy of a late petitioner's standing to intervene, excuse for being late, and contentions in a single order, the appealability of which is not affected by the Board's failure to rule on contentions. Applicants misconstrue the Rules. Their position disregards the fact that in 1978 the Commission amended section 2.714 to provide for the bifurcated procedures and delayed rulings on contentions employed by the Licensing Board here. 43 FR 17798, 17799 (April 26, 1978). The Commission recognized that even under the old rule (which had been construed to require that formal contentions accompany the intervention petition),¹² licensing boards regularly passed on the adequacy of contentions separately — albeit under the guise of allowing late "amendments" to them — and that this practice was in fact desirable. As the Commission explained in its "Statement of Considerations" accompanying the rule change (43 FR at 17799):

It has become common practice for parties and petitioners in nuclear power plant licensing proceedings to discuss informally the framing of contentions until just before the special prehearing conference which is held some months or more after expiration of the 30 day period for timely petitions pursuant to 2.751a. During this period the contentions are frequently revised based on the discussions among the parties and petitioners. Often the petitioners and parties will be able to present the presiding atomic safety and licensing board with an agreed upon set of contentions at the special prehearing conference. This practice reduces unnecessary controversy and litigation and should be encouraged. Accordingly, the rules

¹¹The Board below rested its construction of its April 22 order on the *Greenwood* decision. 11 NRC at 580.

¹²See 10 CFR 2.714(b) (1978 ed.).

are amended to permit the filing of contentions until shortly before the special prehearing conference.

In short, the change codified the accepted practice of allowing contentions to be cast into acceptable form *after* the board has passed on petitioner's "interest" in the proceeding. The fact that this case involves a late petition does not change the result we must reach. The rule governing appeals from intervention orders — section 2.714a — was not modified; only the rule governing the way licensing boards review intervention petitions — section 2.714 — was recast. And in doing so, the Commission expressly stated that the change did not disturb the existing "practice of granting intervention based upon adequate interest *and at least one adequate contention.*" 43 FR at 11799 (emphasis added.) Put another way, even though a petitioner seeking to intervene demonstrates standing to be heard and good cause for being late, unless that petitioner also submits an acceptable contention, intervention may still be denied. It follows (as it did in *Greenwood*) that, because the Licensing Board's April 22nd ruling did not even pass on the acceptability of contentions — much less admit any — its ruling cannot be construed as an order "granting a petition to intervene;" hence it is not now appealable.¹³ 10 CFR 2.714a(c).¹⁴

2. Alternatively, applicants suggest that we hear their appeal now even if the ruling below must be viewed, in their phrase, as "technically" not final. We pass the question whether we would have authority to do this, for we reject the idea on its merits. The issue on appeal from an order of this kind would be whether, in allowing new intervenors into the proceeding at this late stage, the Board's action was abusive of its discretion.¹⁵ A number of factors bearing on the resolution of that question can be affected by the contentions that are admitted: for example, whether petitioners' participation will broaden the issues or delay the proceeding, and the extent to which petitioners' interests could be protected by others. See 10 CFR

¹³Applicants' suggestion that the Board's order has the effect of preventing appeals from being taken is mistaken; the appeal must simply abide a final ruling on the intervention petition, the normal practice.

¹⁴It may well be a good idea, as the Board below suggested, that one "seeking intervention after the normal time for submission of contentions should as a general rule include contentions in its petition." 11 NRC at 571 fn. 1 at 3, fn. 1. But section 2.714 does not make this mandatory. We are hesitant to read such a prerequisite into a rule only recently amended to allow an intervenor's showing of "interest" to be treated separately from its "contentions." But we do agree that a licensing board must set a reasonably short schedule for passing on a late intervenor's contentions to avoid unnecessarily delaying the course of the hearing. The Board below appears to have done so here.

¹⁵*Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975); *Florida Power and Light Company* (St. Lucie Plant, Unit 2), ALAB-420, 6 NRC 8, 13 (1977), *affirmed*, CLI-78-12, 7 NRC 939, 946 (1978).

2.714(a)(1). We perceive no prejudice to applicants (and they suggest none) that would flow from awaiting the Licensing Board's ruling on the contentions. It therefore seems the wiser course to abide that event and we will do so.

3. Finally, it does not follow that petitioners would be denied intervention even were we to construe the Licensing Board's order as appealable. Were that the case, applicants' appeal would have to be deemed late.¹⁶ And because it was not accompanied by a motion for leave to file it out of time it would even be subject to dismissal. *See Iowa Electric Light and Power Company* (Duane Arnold Energy Center), ALAB-108, 6 AEC 195 (1973); *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit 1), ALAB-424, 6 NRC 122, 125 (1977). In light of the disposition we make of this matter, there is no need for us to consider that question.

The appeal is *dismissed without prejudice* to its renewal if the Licensing Board admits any of petitioners' contentions.¹⁷

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the
Appeal Board

¹⁶The Licensing Board's order was docketed and served by mail on April 22, 1980. Assuming *arguendo* that the order was subject to interlocutory review, applicants had 15 days to file a notice of appeal. 10 CFR 2.710 and 2.714. That period expired on Wednesday, May 7, 1980. Applicants' appeal was filed May 8th.

¹⁷Our action neither expresses nor implies any position on the merits of the Licensing Board's order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

Docket No. STN-50-485

**ROCHESTER GAS AND
ELECTRIC CORPORATION,**
et al.

**(Sterling Power Project,
Nuclear Unit No. 1)**

June 17, 1980

At the applicants' request, the Appeal Board terminates the proceeding and vacates, on the ground of mootness, the Licensing Board's initial decision authorizing the issuance of a construction permit for the Sterling Power Project, Nuclear Unit 1 (LBP-77-53, 6 NRC 350 (1977)). The Appeal Board also instructs the Director of Nuclear Reactor Regulation to revoke the outstanding construction permit.

CONSTRUCTION PERMIT PROCEEDINGS: TERMINATION

Where an applicant abandons its construction of a nuclear facility and requests that construction permit proceedings be terminated prior to resolution of issues raised on appeal from the initial decision authorizing construction, fundamental fairness dictates that termination of the proceeding be coupled with a vacation of the initial decision on the ground of mootness. *United States v. Munsingwear*, 340 U.S. 36, 39-41 (1950).

APPEARANCES

Mr. Eugene B. Thomas, Jr., Washington, D.C., for the applicants, Rochester Gas and Electric Corporation, *et al.*

Mr. Edwin J. Reils for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

In 1977, the Licensing Board rendered an initial decision authorizing the issuance of a construction permit for the Sterling Power Project, Nuclear Unit No. 1. LBP-77-53, 6 NRC 350. The following year, we affirmed that decision on all but two issues: the need for the power to be generated by the facility and the environmental impact of radon releases arising from the mining and milling of uranium. Jurisdiction over those two issues was retained. ALAB-502, 8 NRC 383 (1978), *affirmed*, CLI-80-23, 11 NRC 731 (May 29, 1980).

Under New York law, the Sterling facility was required to obtain a certificate of environmental compatibility and public need from that State's Board on Electric Generation Siting and the Environment (Siting Board). In January 1978, the Siting Board granted such a certificate. Several months later, however, the Board announced its intention to reexamine the matter. On February 11 of this year, it issued an opinion vacating the certificate, denying the application and closing the proceeding.

In the wake of this development, the applicants have initiated steps looking to the "termination of contracts with those vendors supplying Sterling project services and plant components". Although "[n]o formal announcement of project cancellation is planned", the applicants take this measure as "effectively recogniz[ing] project discontinuance for all practical purposes". Accordingly, we are asked by them to "terminate all proceedings in this docket".¹

This relief is plainly warranted. There is certainly no reason to continue to pursue the remaining issues raised by the intervenor's² appeal from the initial decision in circumstances where those issues have been effectively mooted by the applicants' decision (seemingly compelled by the Siting Board action) to abandon the Sterling project.

But as the NRC staff correctly points out in its response to the applicants' termination request,³ there remains the question as to the status, once the proceeding has been terminated, of the construction permit which was issued by the Director of Nuclear Reactor Regulation on the strength of the initial decision. Although the applicants have sidestepped that question, its answer is dictated by considerations of fundamental fairness. Had the intervenor's appeal been prosecuted to a successful conclusion, the possible consequence would have been not merely the reversal of the initial decision but, as well, the revocation of the construction permit. Surely, the applicants cannot improve their position — *i.e.*, insure the retention of the

¹Letter, dated May 28, 1980, from Eugene B. Thomas, Jr., to the Secretary to the Appeal Panel.

²Ecology Action of Oswego.

³Letter, dated June 6, 1980, from Edwin J. Reis to the members of this Board.

permit — by having us terminate the proceeding and thus bring a halt to the appeal.

The Supreme Court has illuminated the path which should be followed in the circumstances which confront us here. Specifically, the appropriate course is to couple the grant of the applicants' request with a vacation of the initial decision on the ground of mootness. *United States v. Munsingwear*, 340 U.S. 36, 39-41 (1950). See also *Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2)*, ALAB-455, 7 NRC 41, 55 (1978), *remanded on other grounds, sub nom. State of Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). The effect of this action will be to remove the authority underlying the issuance of the construction permit. This will, in turn, call upon the Director of Nuclear Reactor Regulation to perform the ministerial duty of revoking the permit — *i.e.*, the same duty that he would have had to discharge in the event that our appellate review of the merits of the initial decision had led us to conclude that the Licensing Board erroneously had authorized permit issuance.

We need add only that the applicants cannot be heard to complain of this result. Apart from the factor of equity noted above, they scarcely have any further need for the permit in light of their abandonment of the Sterling project because of the action of the State Siting Board. Indeed, although we perceive no occasion to take the additional step of directing a dismissal of the permit application, it is reasonable to suppose that the applicants will give thought to the withdrawal of that application.⁴

LBP-77-53, 6 NRC 350 (1977), is *vacated* on the ground of mootness; this construction permit proceeding is *terminated*; and the Director of Nuclear Reactor Regulation is instructed to *revoke* the outstanding construction permit by reason of the vacating of LBP-77-53.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the
Appeal Board

⁴In this connection, we are not here confronted with the question, recently considered by a licensing board in a different proceeding, of the extent of the authority of such a board to order an involuntary dismissal of a construction permit application on the ground that the applicant has clearly (but without saying so) abandoned its purpose to build the facility in question. See *Puerto Rico Electric Power Authority (North Coast Nuclear Plant, Unit 1)*, LBP-80-15, 11 NRC 765, 767 (May 29, 1980). In an unpublished order entered on June 4, 1980, we called upon the *North Coast* parties to brief that question.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

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

In the Matter of

Docket No. STN 50-488
50-489
50-490

DUKE POWER COMPANY
(Perkins Nuclear Station, Units
1, 2 and 3)

June 20, 1980

The Appeal Board extends until its further order the time for filing exceptions to the Licensing Board's partial initial decision on the issue of alternate sites for the Perkins facility (LBP-80-9, 11 NRC 310 (1980)), to await the Licensing Board's decision on two other matters which may have a bearing on the parties' need for (or the content of) exceptions.

RULES OF PRACTICE: APPELLATE PROCEDURE

A partial initial decision upholding the applicant's selection of a site for its nuclear facility is subject to immediate appeal notwithstanding the fact that it does not authorize the issuance of a construction permit or pave the way for the issuance of a limited work authorization. *Houston Lighting and Power Company*. (Allens Creek Nuclear Generating Station, Units 1 and 2), ALAB-301, 2 NRC 853, 854 (1975).

APPEAL BOARDS: EFFECTIVENESS OF DECISIONS

Decisions and orders of an appeal board are immediately effective. Absent an appeal board's or the Commission's issuance of a stay, a licensing board is both entitled and duty-bound to carry out appeal board directives with suitable dispatch.

APPEARANCES

Mr. William G. Pfefferkorn , Winston-Salem, North Carolina, for the intervenors, Mary Apperson Davis *et al.*

Mr. J. Michael McGarry, III , Washington, D.C., for the applicant, Duke Power Company. Mr. Charles A. Barth for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

A. 1. On February 22, 1980, the Licensing Board rendered a partial initial decision in this construction permit proceeding involving the proposed Perkins nuclear facility. LBP-80-9, 11 NRC 310. That decision addressed specifically the question whether there was an alternate site for the location of the facility which was "obviously superior" to the site chosen by the applicant. On the basis of its consideration of the evidence before it, the licensing board expressly answered this question in the negative. *Id.* at 336. This ultimate conclusion rested upon, *inter alia*, the fruits of a comparison made by the board between the Perkins site (situated on the Yadkin River) and an alternate site on Lake Norman in the Catawba River Basin.

Even though the partial initial decision did not authorize the issuance of a construction permit (or pave the way for the issuance of a limited work authorization),¹ it was nonetheless subject to immediate appeal. *Houston Lighting and Power Company*. (Allens Creek Nuclear Generating Station, Units 1 and 2), ALAB-301, 2 NRC 853, 854 (1975). We decided, however, to toll on our own initiative the running of the period prescribed by 10 CFR 2.762(a) for the filing of exceptions to the decision. Order (unpublished) of March 4, 1980. Our reason for doing so was the then pendency before the Commission of a petition for review of *Rochester Gas and Electric Corporation*. (Sterling Power Project, Nuclear Unit No. 1), ALAB-502, 8 NRC 383 (1978). A principal issue raised by that petition was whether, in *Sterling*, we had properly interpreted the "obviously superior" standard previously laid down by the Commission for employment in the undertaking of alternate site analyses.² We thought that the Commission's resolution

¹This was because of the other issues which still remain for Licensing Board resolution. See LBP-80-9, *supra*, 11 NRC at 336.

²See *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 526-30 (1977), *affirmed sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978).

of that issue might have a bearing upon the correctness of the partial initial decision here, which (as just noted) dealt specifically with the question whether there is any alternate site "obviously superior" to that proposed for the Perkins facility.

On May 29, 1980, the Commission handed down its ruling in *Sterling*. CLI-80-23, 11 NRC 731. The following day, we issued an order (unpublished) in which we took recognition of that fact and directed that fact and directed that any exceptions to the partial initial decision in the case at bar be filed by June 23, 1980.

2. On April 15, 1980 — almost two months after the partial initial decision had been rendered and some six weeks before the Commission acted in *Sterling* — David Springer filed a petition with the Licensing Board in which he sought for a second time³ leave to intervene in this proceeding (as well as certain allied relief). On May 5, the NRC staff responded to that petition, urging its denial on the merits. It filed that response with us rather than the Licensing Board. Its justification was that the petition reflected that Mr. Springer, who assertedly owns property on the Yadkin River in the vicinity of the Perkins site, wishes to reopen the alternate site issue resolved in favor of the applicant in the partial initial decision.⁴ According to the staff, the petition having been filed more than ten days after that decision had been rendered, the Licensing Board no longer had jurisdiction to consider it.

Without pausing to consider whether the staff was right in its belief that, in the circumstances, this Board alone could now pass on the merits of the Springer petition, we held that the response should have been filed with Licensing Board. ALAB-591, 11 NRC 741 (May 7, 1980). That conclusion was founded upon the settled principle that "[e]very tribunal — whether judicial or administrative — possesses the inherent right (indeed, the duty) to determine in the first instance the bounds of its own jurisdiction". *Id.* at 742-743. Accordingly, we referred the response to the Board below for its consideration *ab initio* of the staff's jurisdictional assertions — recording our assumption that, once the applicant's response to the Springer petition was also in hand, the Board would "take such action on the petition as appears to it appropriate". *Id.* at 742-743.

³Mr. Springer's previous (and also untimely) intervention petition was denied by the Licensing Board. We affirmed that denial. ALAB-431, 6 NRC 460 (1977).

⁴More particularly, Mr. Springer appears to desire to press the Lake Norman alternative which the Licensing Board had found not to be obviously superior. See p. 871, *supra*.

On June 11, while the Licensing Board still had the petition under advisement, the already admitted intervenors (who participated in the hearings below)⁵ moved before us for an extension until at least August 25, 1980 of the time within which to file their exceptions to the February partial initial decision. Their motion represented that they had filed a motion to reconsider that decision or to reopen the record on the strength of the Springer petition⁶ and asserted that "these matters should be resolved" before exceptions must be filed.

On June 17, the Licensing Board entered an order (unpublished) in which it determined that it had jurisdiction to consider the Springer petition. It announced, however, that it nonetheless would "not proceed to rule on the merits of the petition until the Appeal Board has ruled on the question of jurisdiction".

B. As is evident from the foregoing discussion of the tangled procedural web in which this case has become enmeshed, there are two interrelated matters requiring our prompt attention. The first concerns the Licensing Board's election not to act on the merits of the Springer petition until after we had either ratified or overturned its conclusion that it has the jurisdiction to do so. The second is the intervenors' request that the time for the filing of their exceptions to the February 22 partial initial decision be extended to abide the event of the disposition of both the Springer petition and their own motion for reconsideration or to reopen which was based thereon.⁷ We examine these matters *seriatim*.

1. It is apparent that the Licensing Board misapprehended our instructions to it in ALAB-591. It was our intent, of course, that the Board first come to grips with the question posed by the staff pertaining to its jurisdiction to entertain the Springer petition on its merits. But we did not contemplate that, were the Board to resolve the question adversely to the staff's position, it would then decline to proceed further pending work from us as to whether that resolution was correct. Where a tribunal finds in favor of its jurisdiction to act upon a particular request for relief presented to it, it normally then goes ahead and rules upon the merits of the request without awaiting appellate confirmation that such jurisdiction in fact exists. In this instance, it was certainly not our purpose to require the board below to depart from that normal practice.

⁵Mary Apperson Davis *et al.*

⁶We have ascertained that that motion had been filed with the Licensing Board on June 6, 1980.

⁷Both the applicant and the staff oppose the request.

In any event, we have decided that little useful purpose would be served by our intrusion into the jurisdictional dispute. Although we think the Licensing Board's analysis on the point to be questionable,⁸ we are now persuaded that there are substantial practical reasons why that Board — and not we — should undertake to decide (at least in the first instance) whether the Springer petition (and the intervenors' motion to reconsider or reopen) are meritorious. That Board is, of course, much more familiar than we are with the record already developed on the alternate site issue. It therefore is in a better position to pass initial judgment on whether, in the totality of circumstances, there is sufficient warrant to grant, in whole or in part, the relief which has been sought of it by Mr. Springer and the intervenors.

This being so, the best course is simply to put aside the jurisdictional question and to call upon the Licensing Board to decide the matters which have been put before it as soon as feasible.⁹ In this connection, the Board below is not to await the expiration of the period allowed for Commission review of this order (see 10 CFR 2.786) before undertaking to discharge that assignment. Decisions and orders of this Board are immediately effective. Absent the issuance of a stay of our directives by either the Commission or this Board, a licensing board is both entitled and duty-bound to carry out those directives with suitable dispatch.¹⁰

2. In the circumstances, we find reasonable the intervenors' request that the time for the filing of exceptions to the February partial initial decision be extended. As they correctly observe, the need for (or the content of) exceptions on their part might well be influenced by the action taken below

⁸Among other things, the Board directed its principal attention to whether it had lost jurisdiction over the entire construction permit proceeding (which it clearly has not). The real question, however, would appear to be whether, by reason of its disposition of the alternate site issue in the February 22 partial initial decision, the Board is now no longer empowered to entertain a new intervention petition which seeks to reopen that very issue. Apart from a reference to what transpired in another licensing proceeding years ago, that question was not treated in June 17 order.

⁹Even if the Licensing Board incorrectly resolved the jurisdictional question (which we need not and do not decide), there is no question that we have the requisite authority (in the exercise of our conceded jurisdiction) to remand the cause to that Board with instructions to take that step.

In this regard, there is no substance to the staff's argument to us that the intervenors' June 6 motion must be deemed untimely because not filed within 10 days of the rendition of the partial initial decision. The ten day limitation contained in 10 CFR 2.771(a) — upon which the staff relies — is in terms applicable solely to final Commission decisions (*i.e.*, those decisions rendered upon ultimate appellate review of initial decisions (see 10 CFR 2.770)).

¹⁰It should go without saying that, once it has ruled on the Springer petition and the intervenors' motion, the Board below will be free to take any further action with regard to the alternate site issue as may appear to it to be warranted by its ruling.

on the Springer petition and their motion to reconsider or reopen the record.¹¹

Because of the present uncertainty as to when that action will be forthcoming, however, it seems desirable to refrain from now establishing another specific date for the filing of exceptions. Instead, we shall merely suspend the current deadline. At the appropriate future time, a further order will be entered which will fix the new deadline.¹²

The time for the filing of exceptions to the February 22, 1980 partial initial decision, LBP-80-9, 11 NRC 310, is hereby *extended* to await (1) Licensing Board action on the Springer petition and the intervenors' June 6, 1980 motion; and (2) further order of this Board.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the
Appeal Board

¹¹In opposing the extension, both the applicant and the staff assert in substance that the Springer petition and the intervenors' motion below are not meritorious. Accordingly, we are told, neither pleading can serve to justify not moving forward with the appellate review of the partial initial decision at this time. As just seen, however, the Licensing Board — rather than this Board — will be undertaking the initial consideration of the merits of the petition and motion. In acting on the extension request, it would be obviously improper for us to attempt to forecast what result will be reached following that consideration.

¹²We offer no assurance respecting the amount of time which that order will provide for the filing of exceptions; this likely will depend upon the disposition made by the Licensing Board of the petition and motion before it. The intervenors' counsel should, of course, already be fully familiar with the February 22 partial initial decision and have reached at least tentative conclusions respecting what portions of the decision might be the subject of exceptions (in the event that the Board below leaves it undisturbed). Our future order will also take into account the manifest desirability of achieving an early ultimate resolution of the alternate site issue. Indeed, that consideration is what has prompted the request that the Licensing Board rule expeditiously.

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)**

June 24, 1980

Acting on intervenors' motion, the Appeal Board orders the record reopened to consider seismic data developed from a major earthquake occurring some three weeks after the Licensing Board's decision (LBP-79-26, 10 NRC 453 (1979)) approving the seismic design for the facility.

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

A board's discretion to reopen a record to consider new evidence turns on whether: (1) the motion is timely, (2) it addresses significant safety or environmental issues, and (3) a different result might have been reached had the newly proffered material been considered initially. *Kansas Gas and Electric Company* (Wolf Creek Station, Unit 1) ALAB-462, 7 NRC 320, 338 (1978).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

A motion to reopen an administrative record may rest on evidence that came into existence after the hearing closed. *Vermont Yankee Nuclear Power Company*. (Vermont Yankee Station), ALAB-124, 6 AEC 358, 364-65.

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

Evidence of a continuing staff effort to improve reactor safety does not perforce warrant reopening a record. For that result, there must be some indication in the new evidence that the decision on the existing record would permit the use of unsafe equipment or create some other situation, similarly fraught with danger to the public, that merits immediate attention.

TECHNICAL ISSUES DISCUSSED:

Seismic design criteria; environmental qualification of electrical equipment.

APPEARANCES

Mr. David S. Fleischaker, Washington, D.C. (Mr. John R. Phillips, Los Angeles, California, with him on the brief) for Joint Intervenors, San Luis Obispo Mothers for Peace *et al.*, appellants.

Mr. Herbert H. Brown, Washington, D.C. (Mr. J. Anthony Kline, Sacramento, California, with him on the brief) for the Governor of California, *amicus curae*.

Mr. Bruce Norton, Phoenix, Arizona (Messrs. Malcom H. Furbush and Phillip A. Crane, Jr., San Francisco, California, and Arthur C. Gehr, Phoenix Arizona, with him on the brief) for the applicant, Pacific Gas and Electric Company, appellee.

Mr. James R. Tourtellotte (Messrs. L. Dow Davis, IV, and Edward G. Ketchen with him on the briefs) for the Nuclear Regulatory Commission staff.

DECISION

I.

1. The Licensing Board concluded in its September 27, 1979 partial initial decision that the Diablo Canyon plant will be able to withstand safely any earthquake that can reasonably be anticipated in its vicinity.

LBP-79-26, 10 NRC 453.¹ Joint Intervenors.² supported by *amicus curiae*,³ appealed that determination. After the appeal was briefed but before it was argued, they moved to reopen the record on three grounds:⁴ *First*, that new data obtained from a major earthquake in California's Imperial Valley which occurred on October 15, 1979 — about three weeks after the decision below was rendered — cast a shadow on the adequacy of the Licensing Board's seismic analysis, making it problematical whether the Diablo Canyon design criteria meet Commission requirements; *second*, that "new seismic reflection data," gathered by a University of California graduate student, invalidate both the Licensing Board's findings about the nature of the linkage between the Hosgri and San Simeon faults and its conclusion that a 7.5 magnitude is a "very conservative" value for the Safe Shutdown Earthquake;⁵ and, *third*, that the staff has changed position about the effect of aging on the ability of the facility's safety-related equipment to function properly and now believes that approval of the applicant's current "environmental qualification program" (pertaining to this subject) is not warranted.

¹The decision also approved the physical security plan for the facility. We dealt with the separate appeal from that determination in ALAB-580, 11 NRC 227 (1980).

²Comprised of San Luis Obispo Mothers for Peace; Scenic Shoreline Preservation Conference, Inc.; Ecology Action Club; Sandra A. Silver; Gordon Silver; John J. Forster; and Elizabeth Apfelberg.

³Although not a party in the proceeding below, we allowed the Governor of California to participate on appeal as *amicus* in support of Joint Intervenors' exception number 45, challenging the Board's treatment of "seismic focusing." ALAB-583, 11 NRC 447 (March 12, 1980).

⁴The motion was filed on March 28, 1980. At the oral argument on the main appeal in San Luis Obispo, California, on April 3, 1980, we set a date for responses to the motion and indicated that we would decide it on the papers. The applicant's response was accordingly filed on April 24, 1980, and the staff's on May 5th.

⁵The term is defined in 10 CFR Part 100, App. A, III(c) as "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. It is that earthquake which produces the maximum vibratory ground motion for which certain structures, systems, and components are designed to remain functional. These structures, systems, and components are those necessary to assure:

- (1) The integrity of the reactor coolant pressure boundary.
- (2) The capability to shut down the reactor and maintain it in a safe shutdown condition, or
- (3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the guideline exposures of this part."

2. We have discretion to reopen a record in order to consider new evidence. Whether to do so turns on the appraisal of several factors: (1) Is the motion timely? (2) Does it address significant safety (or environmental) issues? (3) Might a different result have been reached had the newly proffered material been considered initially?⁶

We have considered the motion to reopen in the light of those standards as well as in the context of the decision below and the record upon which it rests. In our judgment, the Imperial Valley earthquake data may well shed significant additional light upon the correctness of key seismic findings made by the Licensing Board. If so, we should take that new information into account in reviewing the decision approving the plant's seismic design. The matter has obvious safety implications and intervenors' motion was made with reasonable dispatch after the information became available. We accordingly grant the motion to reopen on this issue to the extent specified in part II of this opinion. However, as explained in parts III and IV, we find no cause to reopen the record on either the Hosgri-San Simeon linkage or the environmental qualification program questions.

3. The new seismic data may affect our evaluation of the entire seismic reanalysis. We are, therefore, holding our decision on the remainder of the appeal in abeyance until we have examined those data more closely and have fully evaluated their significance.

⁶*Kansas Gas and Electric Company* (Wolf Creek Station, Unit 1), ALAB-462, 7 NRC 320, 338 (1978). Relying on decisions under Rule 60 of the Federal Rules of Civil Procedure and *ICC v. Jersey City*, 322 U.S. 503 (1944), applicant argues that an additional requirement for reopening a record is that "the newly discovered evidence which the proponent of the motion seeks to have considered must have been in existence at the time of trial." Applicant's Brief in Response to Motion to Reopen, dated April 24, 1980, at 2, fn. 2. The Federal Rules, however, apply only in district court litigation and do not govern agency practice. *Rule 1, FR Civ. P.* Unlike district courts, administrative agencies frequently have continuing responsibilities over matters under their supervision. The settled law on reopening administrative records is contrary to the applicant's position. Thus, in *ICC v. Jersey City*, the Supreme Court upheld an ICC refusal to reopen a record not because the consideration of post-trial evidence was proscribed, but because whether to reopen for that purpose was a matter entrusted to the agency's discretion. 322 U.S. at 514, 519, 524; *accord, United States v. ICC*, 396 U.S. 491, 521 (1970); *Bowman Transportation v. Arkansas-Best Freight System*, 419 U.S. 281, 294-96 (1974).

Given the NRC's oversight responsibilities (see *Power Reactor Corporation v. Electricians*, 367 U.S. 396 (1961)), it would be strange indeed if this Commission could not consider the most recent information bearing on safety in deciding whether to license operation of a nuclear power plant. Not surprisingly, agency decisions recognize that a motion to reopen a record may rest on evidence that "came into existence after the hearing closed." *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Station), ALAB-124, 6 AEC 358, 364-65, *on remand*, LBP-73-18, 6 AEC 488 *affirmed in part and reversed in part*, ALAB-138, 6 AEC 520, 523 (1973).

1. A brief recapitulation of the circumstances surrounding the design of the Diablo Canyon nuclear power plant will place our decision to reopen in perspective. We observed when this case came before us for another purpose last year (ALAB-519, 9 NRC 42, 45) that:

[a]ll nuclear power plants must be designed and built to protect the public from the hazards of radioactive releases should the plant be subjected to movements in the earth's crust. And such considerations were taken into account when the Diablo Canyon facility was initially proposed for its Pacific coast site. At that time the Nacimiento fault was taken to be the nearest major active fault, some 18 to 20 miles northeast of the plant. The facility was designed, engineered, and constructed to withstand earthquake damage on this basis. But, years after construction was approved and well underway, that assumption was discovered to be ill-founded.

Subsequent offshore explorations for petroleum have revealed that, at its closest point, the "Hosgri fault" lies only a few miles off the site of the Diablo Canyon facility. That proximity raised the likelihood that an earthquake in the vicinity of San Luis Obispo might be "considerably more severe" than initially anticipated. In light of this intervening development, the plant's design was extensively reanalyzed by the applicant, the staff, and the [Advisory Committee on Reactor Safeguards]. Their consensus was [that] the Diablo Canyon facility as constructed, with some design modifications, would withstand safely the more severe earthquake shocks now reasonably anticipatable. [Footnotes omitted.]

Although it joined in that conclusion, the ARCS expressed reservations about the seismic reevaluation of the facility. The Committee noted, for example, "that, for want of better data, certain calculations were necessarily accepted 'largely on [expert] judgment and experience rather than on extensive observations or analyses,' judgments not previously applied in approving power plant design," and "that the design bases and criteria utilized in the seismic reevaluation of the Diablo Canyon station for the postulated Hosgri event are in certain cases less conservative than those that would be used for an original design." *Ibid.*

These matters were explored in the hearings below. The Licensing Board concluded that the plant was adequately designed to protect the public from harm in the event of an earthquake. Its conclusion rests, among other things, on (1) the "design response spectrum" utilized in the design reanalysis by staff witness Dr. Nathan M. Newmark;⁷ (2) the assumption

⁷10 NRC at 492-506.

that the magnitude of vertical acceleration experienced in a major earthquake would be two-thirds of the horizontal acceleration;⁸ and (3) use of the "tau effect"⁹ to justify a reduction in magnitude of higher frequency motion in large structures.¹⁰

On October 15, 1979 — after the decision below was rendered — California's Imperial Valley experienced an earthquake ("IV-79") with a magnitude of 6.4 to 6.9 on the Richter Scale.¹¹ This approached in size the 7.5 magnitude "Design Basis" (or Safe Shutdown) earthquake on the Hosgri Fault that, in accordance with Commission requirements, all parties agree the Diablo Canyon facility's safety systems must be designed to survive in functioning condition.¹² Because of the Imperial Valley's known high seismicity (a result of the Imperial Fault, which bisects the region), numerous strong motion instruments (seismographs) had been put in place there before the earthquake occurred. The response of that instrumentation to IV-79 provided seismologists with what has been described as "the best near-field data set available to date."¹³ Intervenors argue that data obtained from this major seismic event have rendered the Licensing Board findings questionable and that the record should be reopened to take the new seismic information into consideration.

2. We have studied the intervenors' motion and the applicant's and staff's responses to it. Doing so has left us of the opinion that the IV-79 data do raise factual issues bearing on the safety of the plant and their resolution might lead us to a different result than the one the Licensing Board reached.

⁸See 10 NRC at 506-507; see also fn. 17, *supra* and accompanying text.

⁹"tau" was explained by the Licensing Board "as a simplification of a very complex wave motion-structure action problem. The tau effect is ascribed to the fact that all points on the foundation of a building do not respond in phase. As a result, the motion of the foundation is reduced which, in turn, leads to a reduction in the motion of the building.... The larger the foundation and the shorter the traveling wave length, the more effective is the so-called tau reduction." 10 NRC at 494 (citation omitted).

¹⁰10 NRC at 494-96.

¹¹The magnitude of this earthquake is variously described in the record: 6.9 (Staff Brief); 6.4 (USGS Circular 795); 6.7 (Rojan and Ragsdale paper); and 6.6 or greater (Intervenors' Motion).

¹²See fn. 5, *supra*. The terms "Design Basis Earthquake" and "Safe Shutdown Earthquake" are interchangeable. 10 CFR Part 100, Appendix A, III(c) fn. 1 (on 546 of the 1980 ed.).

¹³Board Notification BN-79-43, December 17, 1979 (from R.E. Jackson memorandum of December 12, 1979, at 1).

For example, the design response spectrum for Diablo Canyon was determined primarily from the record of the February 9, 1971 earthquake at Pacoima Dam. That record includes a peak horizontal acceleration of 1.2g which, upon reduction to a response spectrum, yields an "effective" or high frequency anchor point acceleration of 0.75g.¹⁴ Comparable figures for the smaller IV-79 event are a peak of 0.81g and a 0.36 mean acceleration.¹⁵ Yet some of the horizontal response spectra generated from the Imperial Valley motion records exceed the Diablo Canyon spectrum values.

In the case of vertical motion, the near-field IV-79 vertical peak accelerations and the vertical response spectra for frequencies greater than 5 cycles per second (cps) are generally equivalent to comparable values for horizontal motion.¹⁶ In the Diablo Canyon seismic reanalysis, however, vertical motion values are apparently taken to be two-thirds of comparable horizontal values.¹⁷ We further note that some of the vertical response spectra also exceed the Diablo Canyon design spectrum values.

Finally, we are told by the applicant and the staff not to be concerned that apparently no tau effect was exhibited at the Imperial County Services Building (which was heavily damaged as a result of the earthquake). They say this fact may be discounted because that building is *built on piles, in soil*, whereas the Diablo Canyon site is rock.¹⁸ In the proceeding below, Dr. Newmark (the staff's seismic expert witness) used the motion records of the Hollywood Storage Building — approximately the same size as the Imperial County Services Building — to demonstrate the existence and nature of the tau effect. But the Hollywood building is also *built on piles, in soil*.

Thus a number of apparently significant inconsistencies exist between the Imperial Valley data and the information presented during the *Diablo Canyon* seismic hearing. This, together with the fact that the Imperial Valley records provide the best existing set of near-field strong motion data, make it appropriate — indeed prudent — to reopen the record to receive the new data in order to test the conclusions that flow from them against those made by the Board below as justifying approval of the Diablo facility's seismic design.

¹⁴See Diablo Canyon Safety Evaluation Report (SER), Supplement 5, Appendix C, at C-4 and C-6.

¹⁵Measured at a distance of 5.8 km from the Imperial Fault, which is equal to the Diablo Canyon facility's distance from the Hosgri Fault, Blume Affidavit, ¶6, Table-1, and Figure 1 (Attached to Applicant's Response to Motion to Reopen).

¹⁶See Blume Affidavit, Table 1 (Attached to Applicant's Response to Motion to Reopen); Rothman-Kuo Affidavit, Figures (Attached to Staff Response to Motion to Reopen).

¹⁷Blume Testimony, fol. Tr. 6099 at 41, Figures 10 and 11; SER Supplement No. 7, at 3-18.

¹⁸Applicant's Brief at 17-18; Staff Brief at 13 *ff*.

3. As we mentioned, the Imperial Valley Earthquake occurred on October 15, 1979. Intervenor's expert witness, Dr. Brune, thereafter completed his review "in late February when he received the necessary data." (Motion, at 9.) The motion to reopen was not filed, however, until March 28, 1980, before the appeal was argued but after it was briefed. The staff and applicant contend that the motion to reopen was untimely. We do not think so. But even were we to agree, "a matter may be of such gravity that the motion to reopen should be granted notwithstanding that it might have been presented earlier."¹⁹ In our judgment, that is the case here²⁰

4. The Licensing Board had no opportunity to peruse the Imperial Valley seismic data, which we have now given close (if preliminary) examination. This leaves us the more familiar with those aspects of the record challenged by the motion to reopen. In these circumstances, and in the interest of expedition — for the plant is rapidly approaching completion and fairness entitles the applicant to learn as promptly as possible whether any reanalysis or redesign may be required — we will conduct the reopened evidentiary hearing ourselves. In an effort to frame the issues for that hearing, we have prepared and set out in an Appendix to this decision specific questions generally related to the 1979 Imperial Valley earthquake data. We believe these encompass the intervenor's concerns and include matters this Board wishes to consider. The parties should address them with written direct testimony by appropriately qualified witnesses. (Unless it is already in the record, a statement of each witness' qualifications should accompany his or her testimony.) All testimony is to be *filed with this Board* and served no later than *45 days from the date of this decision*.²¹

III.

Joint Intervenor's second ground for reopening concerns the maximum credible earthquake that the Hosgri Fault is capable of causing. The Licensing Board determined it to be one of 7.5 magnitude, which the Board characterized as a "very conservative value for the safe shutdown

¹⁹*Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 804 (1979), quoting *Vermont Yankee, supra*, ALAB-138, 6 AEC 520, 523 (1973).

²⁰For the reasons explained in fn. 6, above, applicant's contention that a motion to reopen must rest on evidence in existence at the time of trial — which would rule out any use of the IV-79 data — is not well taken.

²¹Submission of testimony on matters other than answers to our questions is permissible, *provided that it is confined to topics directly relevant to the reopened issues*.

earthquake.” 10 NRC at 468 and 485. Intervenors’ motion rests on investigations conducted in 1979 by Mr. R. B. Leslie, a graduate student and a candidate for a master’s degree in Earth Sciences (geology) at the University of California at Santa Cruz. Mr. Leslie collected high-resolution seismic reflection data in shallow, near-shore areas proximate to the San Simeon and Hosgri fault zones. These led him to conclude that the offshore extension of the San Simeon fault zone “is 2 to 8 km wide and composed of numerous anastomosing [*i.e.*, intercommunicating] fault strands,” and that it “can be followed approximately 10 km southeastward from San Simeon Bay where it joins a strand of the Hosgri fault zone.” Leslie Affidavit, at 5 (attached to Motion to Reopen).

Joint Intervenors argue in essence that the Board’s conclusion on earthquake magnitude rests on its assumption that the Hosgri Fault is not connected to any other, and that Mr. Leslie’s affidavit invalidates that assumption. They add that the U.S. Geological Survey’s evaluation of the Hosgri Fault agrees with the idea that earthquakes greater than magnitude 7.5 could occur there. To support this proposition, intervenors cite passages from a 1976 USGS report.

Intervenors misstate the Geological Survey’s position. The report on which they rely is in the record.²² When the relevant excerpts (reproduced in the margin below²³) are read in context, there is no question that the Survey’s testimony mirrors the Licensing Board’s finding — *viz.*, that the Hosgri Fault has not been shown capable of causing earthquakes greater than 7.5M. And, contrary to intervenors’ assertions, the Geological Survey’s expert testimony before the Board was that, even were the Hosgri Fault interconnected in the manner the Leslie affidavit now avers to be the case, the entire system is of a kind unlikely to experience earthquakes above a 7.5 magnitude.²⁴ Mr. Leslie’s affidavit does not suggest (much less state) that

²²Supplement No. 4 to the staff’s Safety Evaluation Report (SER) on the Diablo Canyon Facility, page C-1; intervenors rely on pages C-10 through C-14.

²³“The suggestion that the Hosgri-San Simeon-San Gregorio faults comprise a system capable of a magnitude 8 earthquake is a legitimate and serious question, which has been considered since discovery of the Hosgri fault zone by Hoskins and Griffiths (1971). It is our current judgment, however, based upon the data in the FSAR, data in the literature, some work in progress within the USGS, present concepts of earthquake source areas along the west coast of the U.S., and the arguments given above that such faults have not been demonstrated to be capable of generating magnitude 8+ earthquakes. In essence the Hosgri, San Simeon, and San Gregorio faults, even if parts of a common zone of deformation, have the dominant characteristics of subsidiary faults within the San Andreas system. Such subsidiary faults have no record of or estimate of earthquakes larger than magnitude 7.5 on them.” SER Supp. No. 4 at C-14.

²⁴See fn. 23, *supra*.

the USGS erred in reaching that conclusion. For that matter, Joint Intervenor themselves endorsed this USGS position in the proposed findings they submitted to the Licensing Board.²⁵ Intervenor offer no support for their new view aside from the Leslie affidavit. In our judgment, the proffered evidence is not of such a character that, had it been introduced below initially, a different result might have obtained. There is no occasion to reopen the record to consider it now.

IV.

Joint Intervenor's third argument for reopening makes the assertion that approval of the applicant's "environmental qualification program"²⁶ was unwarranted. They allege that new information reveals that the program did not identify all the safety-related equipment involved at the Diablo Canyon facility and failed to take into account the effect of "aging" on that equipment's ability to function properly.

The "new information" consists of two staff communications to the applicant. The first, a letter dated November 2 1979, sought additional material for an ongoing staff review of standards applicable to certain instrumentation and electrical equipment. The passage relied upon appeared in an enclosure with that letter and is reproduced in the margin below.²⁷ Intervenor construe the passage as specific staff recognition "that the listing of equipment in the [applicant's] Diablo Canyon [Final Safety Analysis Report] was insufficient....."²⁸ They argue that because of this, the record must be reopened to consider the equipment not listed.

²⁵Joint Intervenor's Proposed Findings of Fact and Conclusions of Law, 45, 46 and 63 (filed March 25, 1979).

²⁶This "program" is a short-hand reference to the ability of safety-related equipment to withstand steam, heat, irradiation, humidity, and other adverse environmental conditions both in normal operation and in the event of an accident or other malfunction. General guidelines in this area appear in Appendices A and B to 10 CFR Part 50; specific requirements are set forth in various Regulatory Guides and industrial standards described in section 3.11 of the staff's Standard Review Plan, NUREG-75/087.

²⁷The FSAR Tables that identify the operational requirements of equipment which must function during and subsequent to the design basis accidents are general and are not sufficiently complete for purposes of documenting equipment qualification parameters. Therefore, provide a table listing of all Class IE safety-related data for each as noted in the attachment. This table should include all equipment located both inside and outside of containment, including balance-of-plant and nuclear steam system supplied equipment."

²⁸Affidavit of R.B. Hubbard, at 7 (attached to Joint Intervenor's Motion to Reopen).

The staff responds that intervenors have drawn a mistaken inference from the paragraph they cite. The letter accompanying the enclosure was apparently intended to convey that all the staff wanted from this applicant was operating data for safety-related equipment which it had previously reported would be used at Diablo Canyon. While the covering letter may have been ambiguous, the staff represents unequivocally that the applicant did identify everything it should have and indicates where that information can be located in the record.²⁹ Intervenors mention no additional items of equipment that the applicant should have but did not identify; they rely simply upon the passage from the enclosure that accompanied the staff's letter. Accordingly, their point is not well taken.

The other post-hearing staff communication that intervenors call our attention to is a February 25, 1980 notice to "All Construction Permit and Operating License Applicants."³⁰ The notice apprised the addressees of a staff proposal for new generic standards (including ones pertaining to aging) on environmental qualifications of certain safety-related electrical equipment; transmitted the proposal to the addressees for review and comment; and informed them of the staff's "interim position" pending final adoption of the proposal. If the staff proposal is adopted in its present form, it may require items of electrical equipment at Diablo Canyon to be "backfitted" to meet the new standards.

Joint Intervenors assert that these new standards represent a significant departure from the position the staff espoused before the Licensing Board, and that the record must therefore be reopened to consider the change. We do not agree. The staff itself informed the Board of the pending proposals, which are based on work going back many years, and the Board took the prospect of their future adoption into consideration in its decision.³¹

²⁹Affidavit of Thomas G. Dunning, at 2 (attached to the Staff Response to Intervenors' Motion to Reopen); Diablo Canyon FSAR Tables 3.11-1, 3.11-1A and 2.11-2 and Tr. 8766.69.

³⁰NUREG-0588; 45 FR 3124 (January 16, 1980).

³¹The Board stated that (10 NRC at 506-07):

Testimony as to the seismic qualification of the Class I electric equipment was presented by NRC staff witness Faust Rosa. (Testimony following Tr. 8748). He also testified concerning aging, noting there previously had been no such requirement but that did not make nuclear plants unsafe because there are other things going on continuously that would reveal the effects of age, such as seismic testing and normal maintenance. (Tr. 8785, 8786). The Staff, nevertheless, is conducting research programs and a systematic evaluation of older operating reactors to better determine the significance of aging in qualification testing. This subject will be reassessed by the Staff before natural aging could have any significant effect on the seismic qualification of equipment installed at Diablo Canyon. (Rosa Testimony at 6-7). It was also pointed out that there is nothing unique about most of the equipment in a nuclear power plant and that a wealth of
(FOOTNOTE CONTINUED ON NEXT PAGE)

A continuing staff effort to improve reactor safety standards is neither novel nor unexpected. The fact that a new proposal is in the wind does not performe warrant reopening a record. For that result, there must be indication in the "new evidence" that the decision on the existing record would permit the use of unsafe equipment or create some other situation similarly fraught with danger to the public that merits immediate attention. Intervenors do not suggest this to be the case here and the Board specifically stated that it was not. 10 NRC at 506. Moreover, in the event the new standards are adopted, they provide for their application to existing reactors.³² In the circumstances, we find no cause in Joint Intervenors' submissions that warrant reopening the record on this subject.

The motion to reopen the record is *granted* to the extent provided in Part II, above; the parties are *directed to file written testimony with this Board within 45 days* on the questions appended to this decision.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the
Appeal Board

³¹(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

experience exists with this equipment in facilities around the world which have been in existence the past ten, twenty or more years (Tr. 8790).

The Staff review of the seismic design of the Diablo Canyon plant was the most extensive ever undertaken by the Staff of the NRC. (Knight Testimony at 54). The Applicant's review was also extraordinarily thorough.

The Board finds that the Applicant has demonstrated through appropriate analysis and tests that Category I structure[s], systems, and components will perform as required during the seismic load of the safe shutdown earthquake.

The Board finds that the Category I structures, systems, and components will be adequate to assure (a) the integrity of the reactor coolant pressure boundary, and (b) the capability to shut down the reactor and maintain it in a safe condition.

³²See 45 FR at 3121.

APPENDIX

1. The October 15, 1979, Imperial Valley Earthquake (IV-79, ML=6.4-6.9) provided an extensive set of strong motion records in the near field of a rather severe earthquake.³³ The parties should compare the horizontal peak acceleration values recorded for various instrument positions with earlier predictions and compilations of such motion, e.g., those contained in the Final Safety Analysis Report (FSAR) on the Diablo Canyon Nuclear Power Plant, Amendment 50, Appendix D LL 11B, Figures 2, 3 and 4; and United States Geological Survey (USGS) Circular 795, Figures 4, 24, 47, and 48. Those comparisons should (if possible) address whether there is magnitude independence or a saturation effect for ground motion intensity in the near field of earthquakes.³⁴

2. Response spectra have been developed from the near-field (1 to 11 km) ground motion records produced by IV-79. The records contain horizontal peak acceleration values in the range of 0.81g to about 0.2g. The applicant calculated a mean peak acceleration of 0.36g for IV-79 at the 5.8 km site-to-fault distance that characterizes the Diablo Canyon site (Applicant's Brief). Despite the fact that the IV-79 peak acceleration values are generally lower than the 1.15g peak acceleration or 0.75g zero-period acceleration used as the design basis for the Diablo Canyon plant (resulting from a postulated 7.5M event on the Hosgri fault), there are instances (although only those from the El Centro Arrays are significant) for which the IV-79 horizontal responses exceed the Newmark Design Response Spectrum for Diablo Canyon. (See staff brief at 9; Brune affidavit, Attachments A and B.) In view of this, the parties should discuss whether the Newmark Spectrum is an appropriate and sufficiently conservative representation of the 7.5M event at Hosgri.³⁵

³³Preliminary Summary of the U.S. Geological Survey Strong-Motion Records from the October 15, 1979 Imperial Valley Earthquake by R.L. Porcella and R.B. Mathiesen (October 1979), included in Board Notification, December 17, 1979.

³⁴See, for instance, Tr. 8597; 10, 105; 5889-90.

³⁵In other words, if the various IV-79 near-field response spectra were used to generate a smoothed, average response spectrum for zero-period acceleration appropriate to that event (in accordance with techniques explained in Blume's testimony fol. Tr. 6099 at page 6 and pages 39 and 40), and if this spectrum were scaled to a 0.75g zero-period acceleration, would the resulting response spectrum be bounded by the Newmark Spectrum for Diablo Canyon?

3. We are told that IV-79 data are not relevant to the Diablo Canyon seismic analysis because that plant is a "rock" site, whereas the Imperial Valley data were obtained on soil sites. (Rothman - Kuo Affidavit at 3; Blume Affidavit, Para. 8.) What is the significance of this difference in view of the conclusion of the authors of USGS Circular 795 (based on an analysis of data provided in that document) that, for comparable earthquake magnitude and distance, there are no significant differences between peak horizontal accelerations measured on soil or rock? (USGS Circular 795 at pages 1, 17, and 26.) This question should be considered in light of statements by applicant's witness Blume to the effect that acceleration, rather than velocity or displacement, is the critical parameter in the design of Diablo Canyon (Blume Affidavit, Para. 9; Testimony fol. Tr. 6099, at 33).

4. The magnitudes of vertical and horizontal acceleration values measured at IV-79 are generally comparable. (Mean values calculated at a distance of 5.8 km from the fault are virtually identical.)³⁶ The response spectra developed for vertical motion within 11 km of the Imperial Fault during IV-79 appear to show generally equivalent values of vertical and horizontal response for periods less than about 0.2 seconds (*i.e.*, frequencies in excess of 5 cps).³⁷ Finally, in some instances the higher frequency portions of the IV-79 response spectra for vertical motion exceed comparable portions of the Diablo Canyon Design Response Spectrum.³⁸

Observations made of the IV-79 data and response spectra appear to be consistent with the criteria set forth in NRC Regulatory Guide 1.60. These require that vertical accelerations in the higher frequency range be equal to horizontal accelerations. As the guide states:

It should be noted that the vertical Design Response Spectra are 2/3 those of the horizontal Design Response Spectra for Frequencies less than 0.25; for frequencies higher than 3.5 they are the same, while the ratio varies between 2/3 and 1 for frequencies between 0.25 and 3.5.³⁹

³⁶Blume Affidavit, Table 1, Figures 1 and 2.

³⁷Rothman — Kuo Affidavit, Figures.

³⁸*Ibid.*

³⁹We note that elsewhere in the Regulatory Guide frequencies are presented with accompanying units of cycles per second (cps), and assume that these units are inadvertently omitted in the portion we have quoted.

The references to vertical motion made in the Diablo Canyon record, however, indicate that a 2/3 ratio between vertical and horizontal motion was apparently utilized at all frequencies.⁴⁰ The parties should address this apparent inconsistency and explain it, if possible. Should there be substantive and relevant analyses suggesting that vertical motion records do not reflect the true vertical motion, these should be provided.⁴¹

5. Peak horizontal acceleration values measured at the base of the Imperial Valley Services Building during IV-79 exceed those measured in the free field 103 meters away from the building. The motion records are described as showing similar amplitudes but greater low frequency motion in the building than in the free field.⁴² No response spectra for the two recording locations have been provided. The acceleration data, however, may be taken to indicate that no reduction in building motion due to the tau effect was realized in this instance.

Based on these observations, intervenors question the validity of the tau concept as well as its use to reduce the higher frequency portions of the Diablo Canyon Design Spectrum. The staff and the applicant answer that, because the Imperial County Services Building was supported on piles in a deep soil structure, these observations are irrelevant to the use of a tau effect in the seismic reanalysis of Diablo Canyon, which is built on a rock site.⁴³ Staff witness Newmark, however, used recorded earthquake motions at the Hollywood Storage Building to demonstrate the use of a tau effect analysis.⁴⁴ The Hollywood Storage Building itself is built on piles in soil. Thus, the "built-on-piles" rationale appears insufficient to explain why no tau effect was evident at the Imperial Valley Services Building.

One feature distinguishing the two buildings that no party commented upon is that the Hollywood Storage Building has a basement and the Services Building does not. Intervenors' witness, Dr. Luco, used this act to explain in part why he believes the Hollywood building should have a large tau value.⁴⁵ Rojahn and Ragsdale's discussion implies that to some extent ground level instrumental responses within the Imperial Valley Services

⁴⁰SER Supplement 7, at 3-18; Knight Testimony, at 13, fol. Tr. 8697, Ghio Test., at 1, fol. Tr. 6993, Blume Testimony, at 41, fol. Tr. 6099.

⁴¹See, for example, Newmark Testimony, fol. Tr. 8552, Reference B at 4, 5; Tr. 9349.

⁴²See "A Preliminary Report on Strong-Motion Records from the Imperial County Services Building" by Christopher Rojahn, U.S. Geological Survey and J.D. Ragsdale, California Division of Mines and Geology (undated but issued early January 1980), at 7 and 8.

⁴³Blume Affidavit, Para. 10; Rothman — Kuo Affidavit, at 7.

⁴⁴SER Supplement 5, Appendix C.

⁴⁵Tr. 8949.

Building may have been influenced by the response (and failure) of the building itself.⁴⁶

In any event, given the apparent similarities between the structural foundations of the two buildings, the explanations provided thus far for a seeming lack of a tau effect at the Imperial Valley Services building are inadequate. The parties should provide additional information on this point and relate their analyses to both geologic and structural conditions prevailing at the Diablo Canyon site.

6. Throughout the Licensing board hearings, parties stressed the role of soil-structure interactions as a mechanism that would reduce the magnitude of structure motion relative to ground motion (e.g. , Tr. 8878; 8947-46). Staff and applicant's arguments (in response to intervenors' suggestion of the apparent lack of tau effect during IV-79) point to soil structure interactions as the reason for building motion exceeding that of the ground (Blume Affidavit, Para. 10; Rothman - Kuo Affidavit, at 7). (a) Describe and explain the circumstances in which soil-structure interactions produce enhanced or reduced structural response. (b) Discuss the relevance and applicability for such interactions to the seismic response assumed for Diablo Canyon.

7. Intervenors (Blume Affidavit, at 5) and the applicant (Frazier Affidavit, Para. 3) have suggested that the strong motion data obtained from stations along the direction of the Imperial Fault evidence the "focusing" of earthquake motion. Yet, when the acceleration data of two such stations, El Centro Array Numbers 6 and 7, are plotted as a function of distance from the fault (e.g. , Blume Affidavit, Figures 1 and 2), the horizontal acceleration values fall well below the regression line mean for the 1 km distance. The vertical acceleration values are also lower than the mean on such a plot.

To the extent possible, the parties should analyze the seismic records for the IV-79 earthquake as they pertain to the focusing phenomenon and relate the results of such analyses to the likelihood that, in the event of an earthquake anywhere along the Hosgri Fault, focusing might result in amplified seismic motion at Diablo Canyon.

8. We have received preliminary reports of the effect of IV-79 on the El Centro Steam Power Station. (Board Notification December 17, 1979, Levin and Martore Observations; Rothman - Kuo Affidavit, at 12). In many respects, the structures and systems of that facility resemble those of

⁴⁶Rojahn and Ragsdale, at 7 and 8. That report also reflects information regarding the Services Building assymmetric structure (at 2 and 3) which may explain why it was susceptible to damage (see Newmark Testimony fol. Tr. 8552, Attachment B, at 14 and 15).

the Diablo Canyon plant. Their response to a severe, well instrumented seismic event can be analyzed to help confirm or refute analytical techniques and assumptions used in the Diablo Canyon seismic analysis. The parties should prepare and submit such an analysis.

9. In addition to answering our questions about information from the Imperial Valley earthquake, we would like the parties to address Paragraph E on page 6 of the McMullen affidavit (included with the Staff Response to Joint Intervenors' Motion to Reopen). That paragraph states that, "in its geologic and seismologic review of the Point Conception LNG site, the USGS reported that 'Existing evidence favors association of the 4 Nov., 1927 (M 7.3) Lompoc earthquake with an east dipping reverse fault such as the Offshore Lompoc or similar reverse fault 10 km to the south that offsets the seafloor.'" Does this USGS statement reflect either evidence not presented in the *Diablo Canyon* hearing or a change in the USGS position based on evidence already in the record? In any event, discuss that statement's implications for this case.

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-SP

**METROPOLITAN EDISON
COMPANY**
**(Three Mile Island Nuclear
Station, Unit No. 1)**

June 12, 1980

Upon consideration of the licensee's motion for sanctions based on an intervenor's failure to comply with a board order compelling discovery, the licensing board declines to dismiss the intervenor as a party but dismisses many of intervenor's contentions. In so doing, the licensing board selected remedial rather than punitive sanctions.

RULES OF PRACTICE: DISCOVERY

A licensee's motion for sanctions against an intervenor for failure to comply with discovery requests poses a three-part consideration: due process for licensee; due process for intervenor; and, an overriding consideration of the public interest in a complete evidentiary record.

**MEMORANDUM AND ORDER ON LICENSEE'S MOTION FOR
SANCTIONS AGAINST ENVIRONMENTAL COALITION ON NU-
CLEAR POWER**

Summary of Order

On May 9, 1980 the licensee, Metropolitan Edison Company, filed Licensee's Motion For Sanctions Against Environmental Coalition on Nuclear Power (ECNP). The motion is based upon ECNP's failure to comply with discovery requests and with the board's order compelling discovery. Licensee seeks the dismissal of ECNP as a party. The board

declines to dismiss ECNP as a party, but it dismisses most of ECNP's contentions.

Background

On September 4, 1979 the Environmental Coalition on Nuclear Power, (ECNP) filed its petition for leave to intervene, on behalf of named persons who, under intervention standards, reside relatively close to the TMI facility. We ruled on September 21, 1979 (Memorandum, at 10) that ECNP met the intervention standing requirements of 10 CFR 2.714. ECNP filed a list of contentions on October 5, 1979 which it supplemented by an additional list on October 22, 1979.

In the First Special Prehearing Conference Order of December 18, 1979 (at 37-46) the board found that many of ECNP's contentions are suitable for litigation. ECNP was admitted as an intervenor. On January 7, 1980 ECNP filed its contentions on emergency planning several of which we accepted in the Fourth Prehearing Conference Order of February 29, 1980 (at 8-10). In all, twenty-six ECNP contentions, including separate subcontentions, were accepted. In addition ECNP was permitted to adopt six contentions of other intervenors in place of rejected contentions.¹ First Special Prehearing Conference Order, December 18, 1979, at 41-43. A ruling on ECNP psychological stress contention was deferred. *Id.* at 41. ECNP was directed to redraft its Contention 5 to separate argument from bases (*Id.* at 41) but did not comply with this directive. On January 18, 1980 the licensee served interrogatories upon ECNP pursuant to 10 CFR 2.740(b) but ECNP did not respond, object, nor seek a protective order. Licensee filed a motion to compel discovery of ECNP on March 24, 1980.² ECNP answered the motion to compel on April 3, 1980.

In its answer ECNP requested that it be relieved of all responsibility to respond to discovery. ECNP cited, as grounds for this position, that it was too busy in other NRC proceedings to comply with filing deadlines in this proceeding, that licensee's law firm is using discovery requests to harass ECNP, and that ECNP has been totally denied discovery by licensee and the NRC staff. ECNP stated also that the "motion is unfair, burdensome." But it did not state which interrogatories it believes to be unduly burdensome nor did it discuss any other merits of the interrogatories.

ECNP made the additional argument that:

¹UCS Contentions 10, 12, 13, 14, and TMIA Contentions 1 and 2.

²This motion was timely. The time within which ECNP was required to respond to licensee's interrogatories was extended by board order to March 7, 1980.

The ECNP Intervenor has conveyed to this Board all of this information [burden, harassment, ECNP denied discovery of licensee and staff] in the past. Yet no relief has been forthcoming. Quite to the contrary, this Board has contributed significantly to the denial of the right of full participation of ECNP in this proceeding. (See ECNP filing of January 24, 1980.)

So that ECNP's answer to the motion to compel may be viewed in full context, we review its earlier complaints to the board. In its filing of January 24, 1980³ ECNP stated that (unspecified) other parties in the proceeding are thwarting its lawful participation in order to preclude an adequate ventilation of important health and safety issues. at 3. Specifically, ECNP stated that it was denied discovery by licensee and the staff and it has no financial resources nor person-power to spend time in the discovery room at TMI 100 miles from its (State College, Pennsylvania) headquarters. It stated that it cannot buy documents and has been denied access to the transcripts in the proceeding. at 3, 4.

ECNP continued this theme during the prehearing conference of February 13, 1980, complaining that it was being forced out of the proceeding because of its problems in this and in other proceedings. Tr. 1650-65, 1646-49, 1673-77.⁴

By memorandum and order of April 11, 1980 the board, on its own, narrowed the scope of some of licensee's interrogatories⁵ and ordered ECNP to respond. We observed that licensee's interrogatories would produce information which "would be useful, perhaps necessary, to licensee for it to prepare thoroughly to meet the charges embodied in ECNP's contentions." *Id.* at 2. We also commented that "[I]f ECNP is affirmatively to offer evidence on these contentions, or it is to participate in effective cross-examination, the information generally sought by the series of interrogatories should be known to the ECNP's representatives." *Id.*

In our order compelling discovery we stated also that we saw no pattern of harassment of ECNP by licensee's counsel, and that the interrogatories "fall well within the permissible limits of the Commission's discovery rules." As to ECNP's complaint that it is too busy with other NRC proceedings to comply with discovery requests, we noted that, other than to seek total relief from all discovery requests (Answer, at 2) or an unspecified "liberal" extension of time for discovery (Tr. 1560-65) ECNP has made no request for relief. Answer, and, e.g. 1649. We also ruled that we were without

³ECNP Intervenor's Answer to the Board's Memorandum and Order of January 9, 1980 dated January 24, 1980 (with corrections dated January 25, 1980).

⁴Tr. 1674, lines 14, 17, and 21 are to be corrected in each line to change "Mr. Adler:" to 'Dr. Kepford:".

⁵We narrowed the interrogatories, not because they were broader than permitted by discovery rules. We perceived that the objectives of licensee's discovery requests could be accomplished by narrowed interrogatories while reducing the burden upon ECNP. at 3-4. See n. 7 *infra*. Licensee accepted the narrowing.

authority to delay the instant proceeding to accommodate ECNP's participation in other proceedings. Memorandum and Order, at 5:

ECNP ignored the board's order directing it to respond to licensee's interrogatories. Licensee served Licensee's Motion for Sanctions Against Environmental Coalition on Nuclear Power on May 9, 1980, requesting that ECNP be dismissed as a party to this proceeding.

At the prehearing conference of May 13, 1980 ECNP requested, and was granted an opportunity to argue orally against licensee's motion for sanctions. Tr. 1937-50.

ECNP's answer to the motion for sanctions,⁶ due May 27, 1980, was served June 2 without leave for late filing or explanation for its tardiness. The NRC staff, in response to the board's telephoned inquiry, stated that the staff had discussed ECNP's allegation orally at the prehearing conference of May 13, (Tr. 1944-47), that ECNP's written answer raised no new material issues, and that the staff will not file a written answer to licensee's motion.

Discussion

The motion to dismiss ECNP as a party raised troublesome and difficult considerations. The relief sought is the most severe possible against an intervenor in NRC proceedings. The relief we grant is also severe. We allow ECNP to remain in the proceeding with only a few surviving contentions. We have reduced its participation to a relatively low level.

The contentions submitted by ECNP raise many important and complex issues bearing upon the public health and safety. The licensee's interrogatories were designed to permit it to learn ECNP's positions on the various contentions and to prepare to meet the issues in the hearing. We so ruled in ordering ECNP to respond. We have again examined the interrogatories in considering the motion pending before us. We remain convinced that, as we have narrowed the interrogatories,⁷ the information requested was reasonably sought by the licensee to address the serious allegations embodied in ECNP's contentions. Learning the position of an adversary in litigation is a traditional and important aspect of discovery. It is also an important element in developing a full evidentiary record.

⁶ECNP Intervenor's Answer to a Board Question, dated June 3, but served June 2, 1980.

⁷Instead of requiring ECNP to report every fact, person or document bearing upon a particular contention, ECNP was permitted to limit the response to identifying only the information upon which its contentions were then based. April 11, 1980 Memorandum and Order, at 3-4

Although ECNP has, without specification, referred to the discovery demands upon it as "burdensome" it has not requested that the interrogatories be further narrowed. At the May 13 prehearing conference ECNP reported that, by oversight, it omitted a "one sentence" request for a protective order in its response to the motion to compel (Tr. 1949), but ECNP has not specified the nature of the protective order. It could not, because of its "one-sentence" length, have been a well-supported request to narrow or to eliminate particular interrogatories. We have had no help whatever from ECNP as to how particular interrogatories could have been further narrowed or eliminated to ease its claimed burden. The information requested by licensee in the interrogatories, as narrowed by the board, was no more than the information needed by ECNP if it is to offer affirmative evidence on the respective contentions or if it is effectively to cross-examine or otherwise confront licensee's evidence on ECNP's contentions.⁸ Burdensome discovery requests are not necessarily inappropriate. In this case we do not see any burden at all beyond that which would normally be required in carefully preparing a party's own case for litigation.

Licensee's motion for sanctions poses a three-part consideration: due process for licensee, due process for ECNP, with an overriding consideration of the public interest in a complete evidentiary record.

Licensee, of course, has valuable property interests dependent upon the outcome of this proceeding. It has the right to know the nature of the charges as to which its interests will be adjudicated. Even if there were no fault on the part of ECNP in failing to disclose information on its contentions, we could not hold licensee to a high standard of proof in defending against ECNP's allegations. This is true both as a matter of due process and as a practical matter. With ECNP's failure to provide *any information whatsoever* in response to reasonable interrogatories, the board would not know how to force licensee to defend itself even if we were inclined to do so.

ECNP's right to due process is predicated upon a scheme of intervention which recognizes the right of intervenors to have their private financial, property and other personal interests considered. 10 CFR 2.714(d). If ECNP's default can be laid to harrassment, as it alleges, or to denial of information, or to other unfair circumstances, it would be the board's responsibility to abate the unfairness where we can. For this reason we have inquired fully into each of ECNP's allegations of unfairness even though their relevance to the motion for sanctions may not be obvious.

⁸ECNP's representative has since stated that it intends to rely solely upon cross-examination in support of its contentions. Tr. 1895-97, 1917-18, 1939, 1942.

ECNP's Allegations

Has ECNP been harrassed in this proceeding? ECNP makes this allegation in its answer to the motion to compel discovery, and in the January 24, 1979 filing. See also Tr. 1759-60, 1941-42. In its June 3 answer to the motion for sanctions,⁹ ECNP expands upon its "harrassment" charges. ECNP makes the sweeping charge that counsel for licensee, whose law firm is also counsel for the applicant in the *Susquehanna* proceeding,¹⁰ this board, the NRC staff here and in *Susquehanna*, and the licensing board in *Susquehanna* have all jointly or separately deprived ECNP of its rights by imposing excessive procedural demands. This board has not intended to act in a manner harrassing ECNP or to work a hardship upon its representatives. The procedural demands upon ECNP have been minimal considering the large number of issues ECNP seeks to litigate. We have tried to be alert to opportunities to reduce intervenors' burdens. We have no information indicating a concerted or separate plan of harrassment by others. As we have stated above, if the allegation of harrassment is meant to refer to licensee's interrogatories, we have examined and reexamined them and we believe that they are reasonable. ECNP has not supported the charge of harrassment.

Has ECNP been denied information needed to respond to discovery? This allegation is a very important part of ECNP's defense. When ECNP complains that the licensee and the staff have refused to respond to discovery, it is referring to *informal* requests for information. ECNP has not served formal discovery requests or, for that matter, informal requests. When ECNP complained to the board that its informal requests for information were being ignored, the board cautioned ECNP's representative that it was then time to make formal discovery requests and that the board would not enforce informal requests. Tr. 1673-77.

Throughout the proceeding there has been a clear and continuous understanding among all parties that discovery would proceed under the discovery rules. Our First Special Prehearing Conference Order (at 66) of December 18, 1979 stated expressly, "Formal discovery pursuant to 10 CFR 2.740-2.742 is now authorized." All other intervenors have requested

⁹Because of the seriousness of ECNP's accusations, a copy of its June 3 answer is attached to this order.

¹⁰*Pennsylvania Power & Light Company and Allegheny Electric Cooperative, Inc.* (Susquehanna Steam Electric Station, Units 1 and 2), Docket Nos. 50-387, 50-388. ECNP, in its response to the motion to compel discovery, requested this board to consider the allegation set forth in ECNP's Request to NRC Commissioners For Expedited Consideration of Actions of An Atomic Safety and Licensing Board and Other Matters, March 14, 1980 in the *Susquehanna* proceeding. The request is now pending before the Appeal Board. The matter is beyond our knowledge and our jurisdiction.

discovery and have responded under the discovery rules. The board has issued many rulings on discovery disputes under 10 CFR 2.740 and all discovery filings have been served upon ECNP. We do not believe that any reasonable doubt existed in the minds of ECNP's representative that it had access to formal discovery. Any possible belief that ECNP could rely upon informal information requests was timely removed at the February 13, 1980 prehearing conference. Tr. 1673-77. Yet, in all its filings and arguments complaining of the denial of "discovery" ECNP has not once alluded to the NRC compulsory discovery regulations.

It is by no means undisputed that ECNP was denied access to requested information even without formal discovery demands. Both the staff and the licensee maintain open discovery rooms near TMI.¹¹

ECNP, however, complains that it has been unable to use the discovery rooms because its headquarters are located and its representatives reside 100 miles away in State College, Pennsylvania. However, in its petition to intervene, ECNP stated that its members live, work, farm, travel and have businesses in the area affected by the proceeding. at 3. The petition specifies the names of several ECNP members who live relatively close in communities such as York, Middletown, Mechanicsburg, Millersville and others. Petition, at 5, n. 3; 6; 7, n. 7; 8. Yet none of these persons, according to ECNP, have the time nor the background to use the discovery rooms near the facility. Tr. 1560-64. Moreover, Mr. George L. Boomsma, of Peach Bottom, Pennsylvania is ECNP's co-director (petition, at 5, n. 3). He resides within 50 miles of TMI, but ECNP does not explain why his assistance is not available.

The NRC staff has made public dockets of this proceeding, including the transcripts, available on microfiche to the representatives of ECNP in a library at State College. Tr. 1562, 1945. Dr. Chauncey Kepford, ECNP's "legal" representative, states that, because of a vision impairment, he cannot use the microfiche for more than 10 minutes. Therefore he does not know whether the documents he states that he has informally requested are at State College. Tr. 1945-46. Dr. Judith Johnsrud, an ECNP co-director, also resides in State College but ECNP reports that she, as is the case with Dr. Kepford, cannot withstand the glare microfiche. ECNP's June 3, answer, n. at 4. ECNP has not mentioned whether the same problem besets Dr. William Lochstet, ECNP's Secretary, who also lives in State College. Intervention petition, at 5, n. 3.

ECNP has made a single request for one document from the licensee —

¹¹The August 9, 1979 Order and Notice of Hearing, at 11, provided for a public document room in Harrisburg and elsewhere. It provided that an adequate response to discovery would be to provide sufficient information to locate the requested document or information.

Appendix 2A of the FSAR. This request was made in November 1979, apparently orally, and is not remembered by counsel for licensee. It has never been repeated. ECNP's June 3 answer, at 2, Tr. 1943, 1949-50. In the meantime the document has been on file in the licensee's discovery room. Tr. 1943. Until its June 3 answer, ECNP had never identified the document to the board, nor had it requested our assistance in obtaining it.

As to ECNP's informal requests to the staff, the staff reports that, in addition to providing information in the public document discovery rooms, it has in fact voluntarily responded directly to ECNP's informal information requests. Tr. 1676. It was the discussion over whether the staff's mailed response was ever received by ECNP which led the board to warn ECNP to pursue timely compulsory discovery. Tr. 1676-77.

In its June 3 answer, ECNP again charges the staff with failing to honor ECNP's informal requests (at 2), and seems to be seeking an order which would prohibit "the continued withholding of properly requested information from the Staff..." (at 5). Yet ECNP has never specified to the board the information it needs from the staff, no how it has been impeded in responding to discovery because of the asserted lack of cooperation from the staff, nor why it has failed to avail itself of the right to discover relevant information under 10 CFR 2.740.

Our discussion of whether ECNP representatives can conveniently use the document depositories near TMI or whether microfiche at State College is a useful source of information, is digressive. Neither the staff nor the licensee is required to place hard copies of all requested materials into the hands of ECNP's representatives at State College.¹² However, we have inquired carefully into ECNP's complaints of being denied information in order to determine whether a *pro se* intervenor, perhaps unskilled in NRC adjudicative procedures, has been deceived and unfairly led to believe that its unstructured approach to discovery is sufficient.

ECNP concedes that it is not an inexperienced intervenor. In addition to the *Susquehanna* proceeding, itself involving discovery disputes, ECNP has intervened in licensing proceedings for TMI-1 and 2, Fulton Units 1 and 2, Limerick Units 1 and 2, Newbold Island Units 1 and 2, and generic proceeding in GESMO, Table S-3, and ECCS. Answer to Motion to Compel Discovery, at 2. ECNP knows how to use NRC discovery processes. We find no basis to conclude that ECNP has been led to rely upon informal information requests. ECNP has not been denied discovery of relevant information needed to prepare its defense and to respond to

¹²We do, however, commend the staff for voluntarily mailing documents to ECNP and establishing a record depository at State College. Similarly licensee's discovery reading room, open to parties without formal demand, has been helpful in making information available.

discovery demands.

ECNP goes on to argue that because of its commitments in other NRC proceedings and because of the board's failure to secure intervenor funding for it, ECNP was unfairly deprived of the ability to respond to discovery and to otherwise meet the procedural demands of this case. ECNP's June 3 answer.

As to ECNP's complaint that its commitments in other NRC proceedings have prevented it from participating fully in this case, (e.g., *Id.* Tr. 1564, 1646-48, 1845-46, 1939), the board recognizes that, in fact, ECNP representatives have been participating in the other proceedings. Normal courtesy to litigants in an adjudicatory proceeding would have been extended to ECNP, or to any party, if a particular unavoidable conflict prevented ECNP from meeting one or more deadlines. ECNP made no request for an extension of time to respond to discovery. Indeed, when ECNP's representative made this general complaint about "being simply squeezed out of this proceeding" (Tr. 1646-49) the board tried, but could not, determine from ECNP what relief it wanted short of suspending the entire TMI-1 proceeding. Tr. 1646-49.

With respect to ECNP's claim that it could not respond to interrogatories because of a lack of intervenor funding, (e.g., 1942), it has raised a defense which we are without authority to accept even if true. But ECNP's stated position on its ability to respond to discovery is incomplete. Some of the interrogatories, for example those asking whether ECNP intends to adopt other contentions, can be answered simply "yes" or "no" without intervenor funding. E.g., 1(f) 1., 19-15. Other interrogatories simply requested ECNP's definition of terms used in its own contentions. E.g., 3-2, 3-6 b. Again, no funds are required to respond. Many of the interrogatories ask no more than an explanation of what is meant by particular contentions. To respond would not require research, nor the expenditure of funds.

When ECNP argued its position on licensee's motion for sanctions, the board inquired as to whether ECNP could have answered any of the interrogatories. Tr. 1947. ECNP's representative replied that, while he cannot remember exactly, ECNP probably could not have responded. Tr. 1949. ECNP's June 3 Answer makes its position clear. It could not have answered because of other commitments. The record suggests also that ECNP does not have all the information requested by licensee's interrogatories. Tr. 1946-49.

On the other hand, there is also a strong indication that ECNP has simply decided that, in view of the perceived unfair denial of information

from licensee and staff, it is not required to comply with the board's order to respond to licensee's interrogatories:

CHAIRMAN SMITH: And then finally, you might address in your written answer what your intentions are as to responding to discovery.

DR. KEPFORD: I can do that right now. If we get no information and are not allowed information, I see no point whatsoever in responding to interrogatories. We answered the staff's interrogatories in good faith hoping the staff would make good on its promises for information, and the staff didn't.

I asked Mr. Trowbridge [licensee's counsel] last November for a document; it was turned down. Sensing that we were going to get no information from the suspended licensee, I don't really understand why we are required to make their case when they refuse to make ours. I simply do not understand.

CHAIRMAN SMITH: So is this your response to that question?

DR. KEPFORD: I guess in part, yes.

Tr. 1949-50.

The foregoing dialogue suggested to the board that ECNP does not intend to comply with the board's order compelling discovery. This impression was fortified by ECNP's June 3 answer (at 4) where, it seems to condition its participation in this proceeding upon three demands:

"...ECNP should be made whole by (a) the receipt of *all* requested documents, (b) the granting of time to develop interrogatories, and (c) the granting of time to review and analyze the information and interrogatories."

As is the case with the requested staff documents, ECNP still has not specified the time it would require to develop interrogatories and to review the received information. It requests instead that we set aside our schedule (at 5).¹³ How long the suspension would last is unclear, but it appears that the delay would be substantial because ECNP reports that it "...is no closer to being ready for trial now in either the TMI-1 Restart Proceeding or Susquehanna 1 and 2 than it was nine months ago." *Id.* at 4.

Whether ECNP has willfully refuses to comply with the board's order compelling discovery, or whether it simply lacks the information needed to prepare its case, the result is nearly the same. If it has willfully disobeyed our lawful order, it is not entitled to participate on the respective issues. If, on the other hand, ECNP is ignorant of the grounds for its own contentions, and is no closer preparation for trial than it was nine months ago, it is unlikely that ECNP can make a contribution to the evidentiary record. In either event licensee is entitled to relief. The relief we grant,

¹³The Commission's August 9, 1979 Order and Notice of Hearing (at 10) requires the board to publish a schedule as early as possible and to attempt to meet it.

dismissing certain contentions, may also afford a measure of relief to ECNP by reducing the litigation burden about which it complains.

Remedy

The licensee has submitted legal authority relating to the relief it seeks, which authority subsumes the relief we grant. Motion, at 3-4. The controlling regulation is 10 CFR 2.707, which, in pertinent part, provides:

On failure of a party...to comply with any discovery order entered by the presiding officer pursuant to 2.740...the presiding officer may make such orders in regard to the failure as are just, including among others, the following:

(a) Without further notice, find the facts as to the matters regarding which the order was made in accordance with the claim of the party obtaining the order, and enter such order as may be appropriate; or

(b) Proceed without further notice to take proof on the issues specified.

In Northern States Power Company, (Tyrone Energy Park, Unit 1) 5 NRC 1298 (1977) the licensing board dismissed intervenors who failed to comply with board orders to respond to discovery. Another licensing board in *Offshore Power Systems* (Floating Nuclear Plants), 2 NRC 813 (1975), dismissed a *pro se* intervenor for failing to respond to discovery requests. An intervenor was dismissed by a licensing board under 2.707 for failure to comply with a direct order of the board in *Public Service Electric and Gas Company* (Atlantic Nuclear Generating Station, Units 1 and 2), 2 NRC 702 (1975).

In selecting the remedy ordered below, the board considered two other alternatives. The first, dismissing ECNP as a party as urged by licensee, had some appeal.

ECNP has ignored an important board order when it could have complied at least with portions of it. Moreover, ECNP still has not committed itself to complying with the board's orders on discovery. ECNP has raised serious questions about its ability and readiness to participate in the proceeding at all. However, after reviewing the entire record of the dispute, the board accepted the standard of adopting the least severe sanctions consistent with due process for licensee and a reliable evidentiary record. We have, therefore, limited the sanction to dismissing certain contentions. The board does not rely upon *National Hockey League v. Metropolitan Hockey Club, Inc.*, 427 U.S. 639, 643 (1976) or similar cases cited by licensee. Motion n.3. No aspect of our order is punitive. It is not for a deterrent effect upon others. The sanctions we order are remedial and

are the least we can impose to regulate the course of the proceeding in accordance with the law and the circumstances of this proceeding.

The other alternative we considered was to deny the motion and to allow ECNP's contentions to go to hearing despite the default. The question of due process aside, we could see no value in this approach. As we noted above (at 898, *supra*) we would not know how to force licensee to defend itself against ECNP's allegations if licensee is not informed concerning their specifics. If licensee were to prepare its direct testimony and other evidence to meet ECNP's unclarified charges, it would have to postulate the grounds for them. It would be naive to expect licensee to postulate the particulars of ECNP's contentions, then present a losing case against them. We do not believe that the evidentiary record would be enhanced by a show of the licensee defending against strawman contentions cast into litigable form by licensee itself.

Contentions of other parties raise issues similar to the issues raised by the dismissed ECNP contentions. Motion for sanctions, at 5, n. 5. Our action will not result in an incomplete evidentiary record.

We have dismissed those ECNP contentions which were the subject of licensee's interrogatories, except for two which are retained. As to the contentions not the subject of interrogatories, licensee has not demonstrated that it has been frustrated in the preparation of its defense. Therefore those contentions survive, as does ECNP as a party.

Two contentions which we retain were the subject of licensee's interrogatories, but the issues raised are not adequately covered by the contentions of other parties. We have revised and retained them in the interest of a complete evidentiary record.

Ruling

ECNP is in default of the board's order in the Memorandum and Order on Licensee's Motion to Compel Discovery of ECNP, April 11, 1980.

Licensee has not served interrogatories on ECNP contentions 1(a), 1(e), the sub-contentions in the No. 2 series (emergency planning), 4(b) and 4(c). As to these contentions, licensee has not been injured. They may remain as issues in the proceeding. This ruling, however, is without prejudice to the right of the licensee to make later motions for specificity or to seek other relief consistent with this order.

ECNP contention 6 is a psychological stress contention which was deferred. No interrogatory was served on this contention, nor was one possible. ECNP contention 6 remains deferred.

The board disagrees with licensee that the subject matter of ECNP contention 1(c) is adequately covered by UCS contention 9, or that ECNP contention 1(d) is adequately covered by Sholly contention 5. Motion for sanctions, at 5, n. 5. Therefore, as a matter of board discretion and to assure an adequate evidentiary record, we retain contentions 1(c) and 1(d). Licensee should address in contention 1(c) the topic of the adequacy of Class 1E control room instrumentation following a feedwater transient and small break LOCA. In contention 1(d) the licensee should address the ranges of instrumentation in connection with contention 1(c). This specification will permit the licensee to address the contention adequately.

ECNP is not permitted to adopt UCS contentions 10, 12, 13, and 14, nor may it adopt previous TMIA contentions 1 and 2 which have now been withdrawn.

ECNP contention 17 was an emergency planning contention. It was deferred pending the filing of ECNP emergency planning contentions dated January 7, 1980. The subject matter was included in those contentions. The board should have noted *pro forma* the dismissal of ECNP contention 17 in its February 28 Fourth Special Prehearing Conference Order. We did not, but we do so now.

All other ECNP contentions are dismissed.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Walter H. Jordan

Linda W. Little

Ivan W. Smith, Chairman

Bethesda, Maryland
June 12, 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman
Dr. Oscar H. Paris
Glenn O. Bright

In the Matter of

Docket No. 50-387 OL
50-388 OL

**PENNSYLVANIA POWER AND
LIGHT COMPANY and
ALLEGHENY ELECTRIC
COOPERATIVE,
INCORPORATED**

**(Susquehanna Steam Electric
Station, Units 1 and 2)**

June 24, 1980

Ruling on several motions filed by an intervenor, the Licensing Board, *inter alia*: (1) reconfirms its earlier subdivision of the proceeding into environmental and health and safety segments; and (2) vacates, with one exception, its previous Memorandum and Order ruling on intervenor's Class 9 accident contention (LBP-79-29, 10 NRC 586 (1979)) in the wake of a new policy statement issued by the Commission on nuclear power plant accident considerations under NEPA (45 *Fed. Reg.* 40101, June 13, 1980).

**LICENSING BOARD: DISCRETION IN MANAGING
PROCEEDINGS**

A Licensing Board may conduct separate hearings on environmental and radiological health and safety issues. Absent persuasive reasons against such segmentation, contentions raising environmental questions need not be heard at the health and safety stage of a proceeding notwithstanding the fact that they may involve public health and safety considerations.

NRC: ENVIRONMENTAL RESPONSIBILITIES

Although an applicant, through its Environmental Report, may provide some of the information utilized in the Draft Environmental Statement (DES), the DES is the responsibility of, and is prepared by, the NRC staff. 10 CFR 51.22.

LICENSING BOARD: DELEGATED AUTHORITY

A Licensing Board's authority of issue directions to the NRC staff regarding the performance of its independent responsibilities to prepare a Draft Environmental Statement is limited. A board may, however, rule on the adequacy of the Final Environmental Statement (or portions thereof) once it is introduced into evidence, and modify it if necessary 10 CFR 51.52 and 51.53.

RULES OF PRACTICE: DISCOVERY

If a party has insufficient information to answer interrogatories, a statement to that effect fulfills its obligation to respond. If, however, the party subsequently obtains additional information — from whatever source — it must supplement its earlier response to include such newly acquired information. See 10 CFR 2.740(c).

MEMORANDUM AND ORDER RULING ON VARIOUS CAND MOTIONS

By filings dated April 29 and 30, 1980, Citizens Against Nuclear Dangers (CAND), an intervenor in this operating license proceeding, submitted responses to the Staff's and Applicants' interrogatories, respectively. Those filings also included several motions. We will deal here with these motions.

1. First, CAND asks that the hearing on certain of its contentions be transferred from the environmental portion of this proceeding to the radiological health and safety sessions. It specifies Contention 2 (health effects of low-level radiation and other discharges from the facility—at least insofar as discharges of chlorine are concerned), Contention 16 (effects of cooling tower discharge), and Contention 17 (transmission lines). CAND claims that there are "public health and safety" issues involved in each of these contentions and that they accordingly should be heard with the other safety issues. The Applicants and Staff each oppose this motion.

CAND's motion reflects a misunderstanding of the reasons for our subdividing this proceeding into environmental and health-and-safety segments. Our basic reason for dividing the proceeding into distinct parts was one of convenience to both the parties and the Board. The numerous complex contentions at issue in this proceeding demand that there be some division into manageable segments for purposes of discovery, hearing, and post-hearing procedures. In responding to discovery requests, CAND itself has benefited from such segmentation. See our Memorandum and Order on Discovery Motions (II), LBP-79-31, 10 NRC 597 (October 30, 1979).

The choice of environmental and health and safety designations for the two segments of the proceeding was premised on the statutory underpinnings of the contentions at issue and the rulings we must make, as well as the differing Staff documents involved with such issues. Thus, the environmental hearings include issues arising from the Commission's obligations under the National Environmental Policy Act (NEPA), whereas the health and safety hearings for the most part include issues arising from the requirements of the Atomic Energy Act. With respect to the environmental issues, the Staff prepares a Final Environmental Impact Statement (FES), whereas with respect to radiological health and safety issues the Staff prepares a Safety Evaluation Report (SER).

This is not to say that some environmental issues do not involve public health and safety considerations. We will assume for the present that each of the issues which CAND wishes to transfer to the health and safety hearings does so. But to the extent they raise health and safety issues, the contentions nevertheless do not raise the type of radiological health and safety issues cognizable under the Atomic Energy Act. *Cf. State of New Hampshire v. Atomic Energy Commission*, 406 F. 2d 170 (1st Cir. 1969). Thus, Contentions 2, 16, and 17 raise no question as to whether the Commission's safety requirements will be satisfied but rather pose inquiries with respect only to certain alleged health and other effects of radioactive releases or of UHV transmission lines. These issues bear upon the cost-benefit balance for the facility and hence are encompassed by governing NEPA requirements. They are also dealt with by the Staff in the FES, not in the SER.

For both legal and practical reasons, therefore, CAND's contentions 2, 16, and 17 are logically grouped with the environmental contentions. Although we have flexibility in our allocation of various issues to particular hearing sessions, and could hear an issue at any time after publication of the Staff's document treating that issue, we have been presented with no persuasive reason why our earlier segmentation should be modified. Consequently, CAND's motion is *denied*.

2. CAND further asks us to direct one of the Applicants (Allegheny Electric Cooperative) to submit as a draft supplement to the Draft Environmental Statement (DES) in this proceeding a "mini" impact statement prepared by the Rural Electrification Administration (REA), covering a portion of the UHV transmission lines for this facility. CAND characterizes the preparation of the "mini" statement as "piecemealing". The Applicants and Staff each oppose this request.

At the outset, we must correct CAND's impression that the DES is prepared by the Applicants. Although the Applicants (through their Environmental Report) may provide some of the information utilized in the DES, the DES is the responsibility of, and is prepared by, the NRC Staff. 10 CFR 51.22. Moreover, our authority to issue directions to the NRC Staff regarding the performance of its independent responsibilities to prepare the DES is at best limited. *Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 201-208 (1978); cf. *Carolina Power and Light Company*. (Shearon Harris Nuclear Power Plant, Units 1-4), CLI-80-12, 11 NRC 514 (April 17, 1980). It is within our province, of course, to rule on the adequacy of an FES (or portions thereof) once it is introduced into evidence, and to modify it if necessary 10 CFR 51.52 and 51.53.

In any event, we see no indication of the "piecemealing" raised by CAND. According to Applicants, the "mini" statement to which CAND refers is an FES issued by the REA in September 1977, concerning a portion of the transmission lines being considered in this proceeding. The REA statement would give rise to "piecemealing" only if the NRC Staff were trying to avoid assessing all of the transmission-line impacts through reliance on the REA statement. However, that does not appear to be the case. For the Staff seems to have attempted to assess all of the transmission-line impacts emanating from the construction and operation of this facility, including but not limited to those previously reviewed by REA. See DES, Appendix B; see also FES-CP. The adequacy of this assessment is, of course, open to review in this proceeding.

For these reasons, CAND's request that we order the DES to be supplemented must be, and hereby is, *denied*.

3. CAND also asks us to order the Applicants to supplement the DES with respect to the impacts of serious accidents. In taking this action, we are asked to modify our previous Memorandum and Order Concerning Class 9 Accident Contention, LBP-79-29, 10 NRC 586 (October 19, 1979). The Applicants and Staff oppose this motion, although for different reasons. For the reasons which follow, we find that modification of LBP-79-29 is warranted.

To begin with, and as we previously pointed out, the Staff (not the Applicants) has the responsibility for preparing the DES, and our authority with respect to such preparation is strictly limited. As the Staff points out, the particular relief sought by CAND is therefore not appropriate. Moreover, as the Applicants observe, the discrete reasons assigned by CAND for modifying our October 19, 1979 Memorandum and Order, which permitted consideration of serious accidents to the maximum extent then permitted by NRC rules, are not legally adequate to warrant such modification. CAND relied on a March 20, 1980 letter to NRC from the Council on Environmental Quality and certain reported statements by the Chairman of the Commission which indicated that policy changes regarding the treatment of serious accidents should be or were being considered. The Applicants correctly point out that formal action by the Commission would be necessary for us to expand our consideration of serious accidents beyond that permitted by our earlier ruling, which was based on then-existing Commission policy and precedent.

On the other hand, the Staff advised us that formal action by the Commission regarding the consideration of serious accidents had indeed been taken, in that the Commission had approved a "Statement of Interim Policy on Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969". The Staff stated that, as a result, the FES for this facility will include an assessment of the environmental risks attributable to accident sequences that can result in inadequate cooling of reactor fuel and melting of the reactor core. That policy statement became effective upon publication. 45 *Fed. Reg.* 40101 (June 13, 1980). (The Staff supplied a copy to the Board and parties.) Our preliminary examination of it indicates that it, at a minimum, has withdrawn the legal basis on which LBP-79-29 was predicated, and permits consideration in licensing proceedings such as this one of a far broader spectrum of accidents than was formerly the case. For these reasons, although the specific relief requested by CAND is not appropriate, CAND is correct in its view that our October 19, 1979 order should be modified. Therefore, except insofar as LBP-79-29 accepted for litigation Contention 19, our order in that opinion is hereby *vacated*.

In our Special Prehearing Conference Order of March 6, 1979, we provided that discovery requests on new information appearing in the FES could be filed within 10 days after service of the FES, and that responses to discovery on new information in the FES must be filed within 15 days of service of the request. LBP-79-6, 9 NRC 291, 327. To the extent that the Staff's discussion of serious accidents in the FES constitutes such new information, the foregoing schedule would of course apply. Within 30 days after service of the FES, or within 15 days of service of responses to

discovery on new information in the FES, whichever is later, any party may file additional contentions based on new information in the FES (including serious accidents, to the extent indicated by the Commission's new policy statement). Responses to any new contentions must be filed in the time frame provided by 10 CFR 2.730(c) for responses to motions. (We expect that any new contentions on this subject which are found admissible will be heard in the environmental segment of this proceeding.)

4. CAND has also moved us

to issue a clarifying memorandum that states, unequivocally, and in considerable detail, *how the NRC regulations will be interpreted by this Licensing Board* concerning all types of evidence, testimony and discovery statements at the public hearings. Example: Precisely what will be considered admissible and what will be inadmissible? [Emphasis in original.]

This motion in effect requests an advisory opinion on matters which cannot be adequately ruled upon in the absence of specific underlying facts. We decline to offer such an advisory opinion and *deny* this motion of CAND.

5. Finally, CAND seeks an extension of time to respond to certain of the Staff's interrogatories. CAND explains that it was not able to answer the questions because it had not been supplied with certain documentation it had requested from the Applicants, the Staff, and the Commonwealth of Pennsylvania. CAND explains that it intends to develop information "from other sources" to respond to these interrogatories.

CAND does not need an extension of time. Its answer that it did not have the information at that time to answer the interrogatories fulfilled its obligations to respond to the Staff's inquiries. When and if CAND obtains additional information—from whatever source—it must supplement its earlier response to include such newly acquired information. See 10 CFR 2.740(c).

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Charles Bechhoefer, Chairman

Dated at Bethesda, Maryland
this 24th day of June 1980.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-271

VERMONT YANKEE NUCLEAR
POWER CORPORATION
(Vermont Yankee Nuclear
Power Station)

June 11, 1980

The Director of Nuclear Reactor Regulation denies under 10 CFR 2.206 a request that the Commission revoke the operating license for the Vermont Yankee Nuclear Power Station.

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

Where the Commission has instituted proceedings to generically consider an issue, the Director of NRR will not institute proceedings in response to a petition under 10 CFR 2.206 to consider the same issue at a particular facility.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a letter dated April 29, 1980, Sandra Freed Thomas of Greenfield, Massachusetts, requested the Director of Nuclear Reactor Regulation to revoke the operating license for the Vermont Yankee Nuclear Power Station and to hold public hearings on the decommissioning of the facility. Ms. Thomas believes that the nation "can decrease, over a period of years, our dependence on nuclear power, in favor of safe, renewable energy...." Ms. Thomas cites the "failure to have *safe* disposal of waste" as a particular basis for her requested action. The staff has treated Ms. Thomas' letter pursuant to 10 CFR 2.206 of the Commission's regulations.

Although the Commission does not have responsibility for the selection of energy alternatives as part of the nation's energy strategy, the Commission is responsible for assuring that there is reasonable protection of public health and safety in the use of nuclear energy and materials.

Accordingly, the Commission has responsibilities with regard to storage and disposal of nuclear waste. The Commission is currently conducting a generic proceeding on the waste disposal issue. See Notice of Proposed Rulemaking, "Storage and Disposal of Nuclear Waste," 44 FR 61, 373 (October 25, 1979). The purpose of this proceeding is

"to assess generically the degree of assurance now available that radioactive waste can be safely disposed of, to determine when such disposal or off-site storage will be available, and to determine whether radioactive wastes can be safely stored on-site past the expiration of existing facility licenses until off-site disposal or storage is available." *Id.* at 61,373.

Suspension or revocation of the Vermont Yankee license pending the outcome of the proceeding on waste disposal is not mandated by law. *Cf. State of Minnesota v. NRC*, 602 F.2d 412, 418 (D.C. Cir. 1979), in which the court did not vacate or stay the Vermont Yankee spent fuel pool expansion amendments pending the Commission's consideration on remand of the waste disposal issue. The Commission stated its policy that during the waste disposal proceeding "the issues being considered in the rulemaking should not be addressed in individual licensing proceedings" and affirmed that

"the court in the *State of Minnesota* case by remanding...to the Commission but not vacating or revoking the facility licenses involved, has supported the Commission's conclusion that licensing practices need not be altered during this [waste disposal] proceeding." 44 FR at 61373

In view of the Commission's determination not to alter licensing practices, or indeed operation of reactor facilities, during the conduct of the generic proceeding on the waste disposal issue, I do not find it appropriate to institute proceedings to consider suspension or revocation of the Vermont Yankee license on the basis of the waste disposal issue. No other health or safety issue is raised in Ms. Thomas' letter which would provide a basis for taking such action. Accordingly, Ms. Thomas' request to revoke the Vermont Yankee licensee is denied.

A copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 CFR 2.206(c). Copies will also be filed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and the local public document room at the Brooks Memorial Library, 224 Main Street, Brattleboro, Vermont 05301. This decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-3200L

METROPOLITAN EDISON
COMPANY(Three Mile Island Nuclear
Station, Unit 2)

June 13, 1980

The Director of Nuclear Reactor Regulation denies under 10 CFR 2.206 a request that the Commission prepare an environmental impact statement on the proposed decontamination of the Three Mile Island Unit 2 reactor building atmosphere.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In a petition dated August 9, 1979, the Anti-Nuclear Group Representing York (ANGRY) of York, Pennsylvania, requested that the Commission issue an environmental impact statement prior to issuing any authorization to vent radioactive gases from the containment building of the Three Mile Island Nuclear Station Unit 2. ANGRY was informed by letters from the Director of Nuclear Reactor Regulation dated September 6, 1979, and from the Secretary of the Commission dated October 12, 1979, that ANGRY's petition would be considered under 10 CFR 2.206 of the Commission's regulations. A notice was published in the *Federal Register*, 44 Fed. Reg. 53593 (1979), that ANGRY's petition was being treated pursuant to 10 CFR 2.206.

The Office of Nuclear Reactor Regulation issued a draft report in March 1980 entitled "Environmental Assessment for Decontamination of Three Mile Island Unit 2 Reactor Building Atmosphere" (NUREG-0662). ANGRY was provided a copy of the Staff's environmental assessment. The assessment discussed five alternative methods for decontaminating the reactor building atmosphere and recommended that the building atmosphere be decontaminated by purging the environment through the

building's hydrogen control system. Based on the Staff's estimate of doses to the public from releases during the decontamination by purging and on the Staff's estimate of occupational dose, the Staff concluded that this action did not constitute a significant environmental impact and that the environmental impacts for each of the alternative methods would be less than those considered in the TMI-2 Final Environmental Statement (1972) (reissued as NUREG-0552, April 1979). Accordingly, the Staff did not propose to prepare an environmental impact statement on the action to decontaminate the reactor building atmosphere.

Two addenda were issued to the Staff's assessment. Addendum 1 referenced studies that have been undertaken on the issue of psychological stress. Addendum 2 considered a variation in the recommended purging method for decontamination of the reactor building atmosphere. The variation would involve more rapid purging and would be permitted only under meteorological conditions favorable to atmospheric dispersion. Addendum 2 recommended that the reactor building atmosphere be decontaminated by more rapid purging using the reactor building purge system in conjunction with the building's hydrogen control system. The Staff again found that the more rapid purging would not result in a significant environmental impact and, accordingly, the Staff did not propose to prepare a separate environmental impact statement on this action.

Public comment was invited through May 16, 1980, on the assessment and the two addenda in notices published in the *Federal Register*. See 45 Fed. Reg. 20265, 21760, and 30760 (1980). At the close of the comment period, approximately 800 responses had been received from various federal, state and local agencies and officials, nongovernmental organizations and other individuals. The Staff has issued a final report entitled "Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere" (NUREG-0662, Vol. 1, May 1980), which discusses the Staff's assessment of alternative decontamination methods and of various public comments submitted on the draft assessment. Upon review of these various comments and further Staff analyses of alternatives, the Staff again recommended that controlled purging of the reactor building atmosphere be authorized. The Staff reaffirmed its earlier assessment that this action would not have any significant adverse impact on public health and safety and that neither containment purging nor the other alternatives discussed in the assessment would result in any significant environmental impact. The Staff does not intend, therefore, to prepare an environmental impact statement on the purging operation.

The Staff's conclusion and commendation were discussed at Commission meetings on June 5 and 10, 1980. At the June 10th. meeting, the Commission approved the purging operation and determined that preparation of an environmental impact statement was not necessary. An appropriate authorization to purge the reactor building atmosphere and negative declaration have been issued by action separate from this decision under 10 CFR 2.206. Copies are attached to this decision.

In view of the determination not to prepare an environmental impact statement on the purging operation, ANGRY's petition is *denied*. ANGRY also requested that the Commission give 12 hours notice of its intent to authorize release of radioactive materials in the event that it authorized purging of the containment atmosphere. Since purging may not take place until 10 days after the authorization to purge is issued, this aspect of ANGRY's petition is granted.

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 become the final action of the Commission twenty (20) days after issuance, unless the Commission elects to review this decision on its own motion within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 13th day of June, 1980.

Attachment:

As Stated

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matters of

Docket No. 50-528 CP
50-529 CP
50-530 CP

ARIZONA PUBLIC SERVICE
COMPANY

(Palo Verde Nuclear
Generating Station, Units 1,
2, and 3)

PACIFIC GAS AND ELECTRIC
COMPANY

(Diablo Canyon Nuclear Power
Plant, Units 1 and 2)

Docket No. 50-275 CP
50-323 CP

SACRAMENTO MUNICIPAL
UTILITY DISTRICT

(Rancho Seco Nuclear
Generating Station, Unit 1)

Docket No. 50-312 OL

June 19, 1980

The Director of Nuclear Reactor Regulation denies a request under 10 CFR 2.206 that the Commission prepare supplemental environmental impact statements to consider the impact of "Class 9" accidents at three power reactor sites.

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 some "special circumstances."

RULES OF PRACTICE: SHOW CAUSE PROCEEDING

Where an issue is pending before one of the Commission's adjudicatory panels, the Staff will not take action under 10 CFR 2.206 to institute another proceeding to consider the same issue.

NRC: ENVIRONMENTAL RESPONSIBILITIES

The Commission is empowered to revise its past policies in an evolutionary process as it gains experience in the application of the laws which it is charged to administer. A change in policy to allow broader consideration of accidents in future NEPA reviews does not invalidate the findings in past reviews, particularly in view of judicial approval of the Commission's past practices.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated October 24, 1979, W. Andrew Baldwin on behalf of the Friends of the Earth (FOE), San Francisco, California, requested that the Director of Nuclear Reactor Regulation take action pursuant to 10 CFR 2.206 to require preparation of supplemental environmental impact statements on Class 9 accidents at the Diablo Canyon, Palo Verde, and Rancho Seco nuclear plants. Notice of receipt of the FOE's petition was published in the *Federal Register*, 44 FR 70241 (December 6, 1979). Counsel for the Sacramento Municipal Utility District (SMUD), the licensee of the Rancho Seco Nuclear Generating Station, submitted on December 21, 1979, a response opposing the FOE's petition. Arizona Public Service Company responded to the petition on February 27, 1980.

The petition requests relief with respect to power reactors under various stages of construction or operation licensed to three primary licensees at three different sites. The Arizona Public Services Company holds construction permits authorizing construction of the Palo Verde Nuclear Generating Station, Units 1, 2, and 3, located at the Winterburg site in Arizona. The Pacific Gas and Electric Company is constructing the Diablo Canyon

Nuclear Power Plant, Units 1 and 2, at its site in California, and has applied for operating licenses for those two units. The Sacramento Municipal Utility District is authorized by the Commission to operate the Rancho Seco Nuclear Generating Station, Unit 1, also located in California.

The FOE asks that the Commission prepare supplemental environmental impact statements on each of these facilities for the following reasons:

1. The environmental impact statements summarily discuss consideration of Class 9 accidents, based on early estimates of reactor accidents probabilities and on the Reactor Safety Study, WASH-1400, which has since been repudiated by the Commission; and
2. The accident at Three Mile Island, which the NRC concedes constituted a Class 9 accident, emphasized the need to evaluate the possible impact of a serious (Class 9) accident and to prepare to meet the possible consequences.

For the reasons stated in this decision, the FOE's petition is denied.

I. COMMISSION POLICY ON ACCIDENT CONSIDERATIONS

The term "Class 9 accident" was employed in a Commission rulemaking which had been proposed in December 1971: "Consideration of Accidents in Implementation of the National Environmental Policy Act of 1969," 36 FR 22851 (1971). The proposed rulemaking would have added an Annex to Appendix D of 10 CFR Part 50 to set forth the manner in which various categories of accidents should be taken into account in the environmental review for a nuclear power plant. Since the FOE's petition was filed, the Commission has withdrawn the proposed Annex and has provided in its place new interim guidance for the treatment of accident risk considerations in NEPA reviews. See "Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969," 45 FR 40101 (June 13, 1980). This decision has been made in light of the Commission's new interim policy. It is useful, however, to briefly review the now withdrawn Annex and other events leading to the Commission's new interim policy.

In the proposed Annex, the Commission divided a theoretical spectrum of accidents into classes ranging in severity from "trivial" (Class 1) to "very serious" (Class 9). Each class of accidents, except Classes 1 and 9, was required to be analyzed in environmental reports and statements. According to the Annex, Class 1 accidents need not be considered because of their trivial consequences. Accidents within Classes 2 through 8 which were "found to have significant adverse environmental effects shall be evaluated as to probability, or frequency of occurrence, to permit estimates to be made of environmental risk or cost arising from accidents of the given

class." 36 FR 22852 (1971). With regard to "Class 9" accidents, the proposed Annex stated:

"The occurrences in Class 9 involve sequences of postulated successive failure more severe than those postulated for the design basis for protective systems and engineered safety features. Their consequences could be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defense in depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low." 36 FR 22862 (1971).

Accordingly, the Annex did not require discussion of Class 9 accidents in environmental reports and statements.

Although the Annex was never formally adopted by the Commission, the Commission noted upon publication that the Annex would be useful as "interim guidance" until the Commission took further action on the Annex. 36 FR 22851 (1971). Upon promulgation of 10 CFR Part 51 in 1974, the Commission stated that the adoption of Part 51 did not affect the proposed Annex, which was "still under consideration by the Commission." 39 FR 26279 (1974). The staff consistently applied the proposed Annex from 1971 to 1979 as not requiring the consideration of Class 9 accidents in its environmental statements. Reliance on the Annex has been upheld by decisions of the Commission's adjudicatory panels and by federal courts.¹

In September 1979, the Commission announced in *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257 (1979), that it intended to complete the rulemaking begun by the Annex and to re-examine the Commission's policy regarding accident considerations.² The Commission requested additionally that the staff:

"1. Provide us with its recommendations on how the interim guidance of the Annex might be modified, on an interim basis and until the rule making on this subject is completed, to reflect development since 1971 and to accord more fully with current staff policy in this area; and

¹See cases cited in *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 259 nn. 5 and 6 (1979) and ALAB-489, 8 NRC 194, 210 n. 52 (1978).

²In *Offshore Power Systems*, the Commission determined that consideration of a Class 9 accident in the environmental review for floating nuclear power plants was appropriate. 10 NRC at 260-61. The Commission did not use the proceeding to resolve the generic issue of consideration of Class 9 accidents at land-based reactors, but noted that "[s]uch a generic action is more properly and effectively done through rulemaking proceedings in which all interested persons may participate." *Id.* at 262. See also *Public Service Company of Oklahoma* (Black Fox Station, Units 1 and 2), CLI-80-8, Docket Nos. 50-556 and 50-557, at 434 - 4/35 (March 21, 1980).

2. In the interim, pending completion of the rule making on this subject, bring to our attention, any individual cases in which it believes the environmental consequences of Class 9 accidents should be considered." 10 NRC 262-63. See also *Public Service Company of Oklahoma, supra* note 2, at 3-4.

In response to the Commission's first request, the staff sent to the Commission recommendations on accident considerations under NEPA in SECY-80-131, dated March 11, 1980. On May 16, 1980, the Commission issued a statement of interim policy in which it withdrew the proposed Annex and suspended the rulemaking that began in 1971 with the publication of the proposed Annex. "Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969," 45 FR 40101 (June 13, 1980). The Commission also provided guidance on accident considerations in on-going NEPA reviews in licensing proceedings where a Final Environmental Statement has not yet been issued. Under the Commission's new guidance, environmental impact statements for on-going and future NEPA reviews will give consideration to a broader spectrum of accidents including severe accidents that may have been designated "Class 9" under the Annex. For the consideration of environmental risks, or impacts, attributable to accidents at a facility, the Commission gave the following 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." 45 FR at 40103.

With respect to plants for which Final Environmental Statements have been issued, the Commission stated in its new interim policy that:

"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.³

³Commissioners 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. 45 Fed. Reg. at 40103.

"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 which may compensate further for adverse site features may be more easily incorporated in plants when construction has not yet progressed very far.

The staff has reviewed information concerning the Diablo Canyon, Palo Verde and Rancho Seco plants to determine whether "special circumstances" exist which would warrant "opening, reopening, or expanding any previous or on-going proceeding" concerning these facilities.

II. STAFF'S REVIEW FOR SPECIAL CIRCUMSTANCES

As the Commission noted in its new statement of interim policy, the staff has identified 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.³

³See 45 FR 40102 (June 13, 1980); *Public Service Electric and Gas Company* (Salem Nuclear Generating Station, Unit 2), DD-80-17, Docket No. 50-311. "Director's Denial of Request under 10 CFR 2.206," at 33 n. 21 (April 16, 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 exposure likely to the population from the liquid pathway for a floating nuclear plant is significantly greater than for a land-based plant.

In view of the Commission's intention in *Offshore Power Systems*, *supra* note 1, that the staff bring to the Commission's attention individual cases in which the staff believes environmental consequences of Class 9 accidents should be considered, the staff reviewed

(FOOTNOTE CONTINUED ON NEXT PAGE)

In *Public Service Company of Oklahoma* the Commission noted in addition to these three criteria that proximity of a plant to a "man-made or natural hazard" might also represent "the type of *exceptional* case that *might* warrant additional consideration." The results of the staff's review for "special circumstances" follow.

Diablo Canyon

As described in Section 4 of the Safety Evaluation Report⁴ and Section 1.3 of the Final Safety Analysis Report⁵ the Nuclear Steam Supply System for each unit of the Diablo Canyon plant is a Westinghouse pressurized water reactor using a four-loop coolant system. The reactor design is basically similar to that of several other Westinghouse reactor designs (Trojan, Zion 1 and 2, and D.C. Cook plants). The Diablo Canyon plant is, therefore, a typical light water reactor facility and the design is not novel.

The Diablo Canyon plant is located in a remote, undeveloped and relatively uninhabited region of San Luis Obispo County. Within 10 miles of the plant, the 1970 resident population density was about 20 person per square mile. Within radii of 20 and 30 miles, the densities were 55 and 40 residents per square mile, respectively. The population densities were projected to approximately double by the year 2000. Thus remaining well within the guidelines of Regulatory Guide 4.7 and 10 CFR Part 100. Therefore, population distribution near the plant is not an unusual circumstance warranting reopening or expanding proceedings on Diablo Canyon.

The Diablo Canyon plant also does not represent a "combination of a unique design and a unique siting mode." The Diablo Canyon site is located adjacent to the Pacific Ocean, which is the only surface water body which could be affected by liquid releases from a Class 9 accident.⁶ Ground water near the site is limited to the streambed of Diablo Canyon Creek, an intermittent stream which empties into the ocean. The sandstone bedrock underlying station foundation is, at most, partially saturated (i.e., no water

³(FOOTNOTE CONTINUED FROM PREVIOUS PAGE)

these categories of special circumstances for purposes of responding to two other petitions under 10 CFR 2.206 which requested consideration of Class 9 accidents. *Public Service Electric and Gas Company, supra*, and *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), DD-80-6, Docket Nos. 50-443 and 50-444, "Director's Decision under 10 CFR 2.206" (February 11, 1980).

⁴Safety Evaluation Report for Diablo Canyon Station, Units 1 and 2 (October 1977).

⁵Final Safety Analysis Report for the Diablo Canyon Station, Units 1 and 2.

⁶The staff uses the term "Class 9 accident" in the ensuing discussion only for the purposes of evaluating, as provided in the Commission's new interim policy, whether "special circumstances" that would warrant reopening or expanding proceedings exist for plans which were reviewed under the now withdrawn Annex.

table) for a considerable vertical distance. Its low permeability, combined with the lack of a near surface water table, would preclude lateral movement of contaminated water from the station toward the ocean at more than an extremely slow rate. As a minimum, many years would be available to interdict any such flow. Therefore, there are no unusual hydrogeologic features of the site which would warrant consideration of the environmental consequences of a Class 9 accident.

The staff analyzed the site characteristics and other nearby features to assure the potential for impairment of safety-related portions of station facilities due to natural or man-made hazards occurring nearby. The Safety Evaluation Report states the staff conclusion that there are no industrial, transportation, or military facilities in the area of the site which have potential to adversely affect plant safety systems. The staff review specifically ensures that station design is adequate to accommodate other natural characteristics of the site environs. The staff review has not identified any unusual circumstances with respect to external hazards that would warrant reopening or expanding proceedings on Diablo Canyon.

Briefly stated, none of the "special circumstances" which would warrant reopening or expanding proceedings is present for the Diablo Canyon plant. An additional factor would weigh in favor of not considering special regulatory action under 10 CFR 2.206. Following the occurrence of the Three Mile Island accident, the Joint Intervenors filed on May 9, 1979, a motion with the Atomic Safety and Licensing Board currently sitting in the case to reopen the record for further consideration of "Class 9" accidents at Diablo Canyon. On May 24, the NRC staff proposed that the Board defer implications for Diablo Canyon. On May 24, the NRC staff proposed that the Board defer ruling on the motion pending completion of the staff report on TMI and its specific implications for Diablo Canyon. On June 5, the Board agreed to defer its ruling. The staff report has not been completed and consequently the Board has not yet ruled on the motion to reopen the record for further consideration of "Class 9" accidents. In view of the pendency of the proceedings before the Licensing Board, the staff believes that it would be inappropriate to institute another proceeding at the FOE's request.⁷

Palo Verde

The Palo Verde Nuclear Generating Station, currently under construction, will have three Combustion Engineering, Inc. "system 80" type pressurized water reactors to provide steam for the turbogenerator system.

⁷ This view is consistent with the Commission's decision in *Consolidated Edison Co.* (Indian Point Station, Units 1-3), CLI-75-8, 2 NRC 173, 177 (1975). The staff also notes the Commission has ordered that no new operating licenses may be issued except after action of the Commission itself. "Interim Statement of Policy and Procedure," 44 *Fed. Reg.* 58559 (October 10, 1979).

Heat will be transferred from each reactor core to steam generators by circulating pressurized water in two closed loops containing two pumps in each loop. The reactors are described in detail in the Safety Evaluation Report for this station (NUREG 75-098, issued on October 10, 1975) and in the Preliminary Safety Analysis Report. Reactors of similar design were used in the Perkins and Cherokee plants. The Palo Verde reactors may, therefore, be considered typical light water reactors not of a novel design.

The desert area in the immediate vicinity of the Palo Verde site is very sparsely inhabited. The 1970 population densities within radii of 10, 20, and 30 miles were 6, 7, and 7 residents per square mile, respectively. The corresponding projected densities in the year 2000 were 18, 23, 21 residents per square mile, respectively. These population densities are well within the guidelines of Regulatory Guide 4.7 and 10 CFR Part 100. Therefore, population distribution near the plant is not a "special circumstance."

The Palo Verde plant is located in an arid region which had been irrigated before 1975. Return flows from this irrigation percolated through the upper granular soils and perched on top of thick zone of relatively impermeable material. This perch water mound is slowly spreading laterally and downward. If this water were contaminated by severe accident, it would migrate slowly downward through the aquitard to the regional aquifer about 200 feet below the surface. The staff estimated that it would take about 5000 years for the contaminated liquid to reach water wells 2 miles south of the station. Due to this slow rate of groundwater movement, there would be less than average difficulty in interdicting any radioactivity releases from a Class 9 accident by the groundwater pathway, should such action be necessary. In view of the above considerations, there is not, in the case of the Palo Verde Station, a "combination of unique design and unique siting mode."

The staff analyzed the site characteristics and other nearby features to assess the potential for impairment of safety-related portions of station facilities due to natural or man-made hazards. The Safety Evaluation Report states the staff's conclusion that there were no off-site hazards which required special consideration in the design of the proposed Palo Verde facilities, except the military aircraft training flights operating out of Luke Air Force Base. The staff has analyzed the existing Air Force program for such flights, the Air Force arrangements for notification of the applicant of changes in flight routes or training programs at Luke Air Force Base as they may relate to the Palo Verde station, the probability of aircraft impacts on the station facilities, and experience from other sites. Supplement No. 1 to the Safety Evaluation Report states the staff conclusion that existing arrangements are acceptable. The staff review has not identified any unusual circumstances with respect to external hazards that would warrant

special considerations of Class 9 accidents. These matters would be given further consideration by the staff in the event that there is a significant change in circumstances. The aircraft impact issue and other safety considerations will be examined again during operating license review.

In sum, then, there are no unusual circumstances which would warrant reopening the construction permit proceeding for Palo Verde. The staff notes, however, that the final environmental statement for the Palo Verde operating licenses will be subject to the more extensive accident analysis prescribed by the Commission's new interim policy.

Rancho Seco

The Rancho Seco Nuclear Generating Station consists of a single Babcock and Wilcox pressurized water reactor with a net electrical power capacity of 913 Mw. Heated pressurized water is circulated from the reactor to two steam generators which provide steam to drive a Westinghouse turbine generator. The reactor design is generally similar to that of other Babcock and Wilcox reactors such as are used at the Davis-Besse, Arkansas 1, Indian Point 1, Oconee 1-3, Crystal River 3, and Three Mile Island plants.

Following the March 28, 1979, accident at Three Mile Island, Unit 2, the NRC has placed a number of special requirements on all operating reactors, particularly Babcock and Wilcox reactors, to minimize the probability of an accident of the Three Mile Island type. Pursuant to its Order of May 7, 1979, 44 FR 27779, the Commission imposed requirements on the Rancho Seco facility which involve changes in reactor design, in operator training and in operating procedures. A hearing, to which FOE was a party (FOE has since withdrawn) is currently being conducted on the Order. In addition, the Rancho Seco facility is subject to an Order, 45 FR 2447 (January 11, 1980), imposing the short-term "Lessons Learned" requirements described in NUREG-0578. The Rancho Seco plant is currently undergoing staff review to assure that its design and operation satisfy these requirements. (The Diablo Canyon and Palo Verde units will also have to meet similar requirements and undergo staff review.) When the required changes in reactor design, operator training and operating procedures have been carried out and approved, the staff believes that there will be reasonable assurance that the Rancho Seco facility can be safely operated. In view of these required changes and general similarity of Babcock and Wilcox design to that of other pressurized water reactors, the Rancho Seco design is not considered novel, but rather typical for a land-based pressurized water reactor.

The Rancho Seco vicinity is sparsely populated with 1970 population densities of 19 residents per square mile within a radius of 10 miles and 95 residents per square mile within 20 miles. However, the cities of Sacramento and Stockton, about 25 miles away, raise the 1970 population density to about 320 residents per square mile within a radius of 30 miles. In 1972, the Sacramento County Planning Commission estimated a population increase rate of 5.2% per year, as reported in the FES. At this high rate of increase, the population in the year 2000 would quadruple that in 1970, exceeding the population density guidelines for a 30-mile radius in Regulatory Guide 4.7. However, the FES also reports that the California Department of Finance predicted growth rates of 1.3% per year and 1.8% per year for Sacramento and San Joaquin Counties, the most populous counties near Rancho Seco. These growth rates resulted in population densities well within the guidelines for the year 2000. In reviewing the FOE's petition, the staff investigated population growth data from the Sacramento County Planning Commission for the years 1975 and 1979 for the populous counties around Rancho Seco. These factual data through the year 1979 indicate that a more realistic growth rate estimate is less than 3% per year. On this basis, the projected population in the year 2000 within 30 miles will remain within the guidelines of Regulatory Guide 4.7 and 10 CFR Part 100. Consequently, population distribution would not warrant re-opening proceedings on the Rancho Seco facility.

The Rancho Seco Station is located on gently rolling terrain about 25 miles southeast of Sacramento. Water bodies in the vicinity are small streams which are normally dry except during periods of high rainfall. The intermittent flow characteristics of these streams indicate that they are not fed by groundwater. Liquid releases from a Class 9 accident would migrate slowly downward and southwestward into the groundwater. Using conservative assumptions, the staff estimates that it would take tens of years for contaminated groundwater to migrate to the nearest well which is located at the site boundary. Due to this slow rate of groundwater movement, the staff concludes that there are no unusual features or special circumstances with regard to the groundwater contamination interdiction characteristics of this site that would distinguish it from other land-based light water reactor sites to the extent that, under the present Commission policy, warrants reopening environmental proceedings on Rancho Seco. The Rancho Seco Station does not represent a "combination of unique design and unique siting mode."

The staff analyzed the site characteristics and other nearby features to assess the potential for impairment of safety-related portions of the station facilities due to natural or man-made hazards. The Safety Evaluation Report states the staff conclusion that the nature and remoteness of

industrial, transportation and military facilities in the region of the site preclude their posing a hazard to the safety features of the station. The staff also concluded that the station design is acceptable in relation to the geologic, seismic, and foundation conditions of the site. The staff review has not, therefore, identified any unusual circumstances with respect to external hazards. The staff would conduct further assessments and actions in the event of significant changes in these circumstances.

In summary, there are no special or unusual circumstances surrounding the Rancho Seco Station which would warrant re-opening environmental proceedings on the facility.

The staff has proposed a further detailed NRC study of the hydrologic features of all reactor sites, according to the task action plans described in Draft NUREG-0660. The liquid pathway interdiction study is designated Task Action III.D.2. The brief discussions given above, based on currently available data, indicate that there is small likelihood of any hydrologic problems at Diablo Canyon, Palo Verde and Rancho Seco. In the event that significant possible impacts are identified in the more thorough study, methods of interdiction and mitigation will be specified. A number of mitigation methods are available, including pumping and construction of slurry walls.

III. OTHER CONSIDERATION GIVEN TO SEVERE ACCIDENTS

The FOE emphasizes in its petition the need "to prepare to meet the possible consequences" of a serious accident at reactor sites. The staff believes that the Commission is taking positive measures to prevent severe accidents and to mitigate their consequences. The Commission noted a number of these measures in its new statement of interim policy on accident considerations. Among these measures taken or under consideration by the Commission and the staff are:

A proposed rule issued for public comment, 44 FR 75167 (December 19, 1979), which would significantly revise requirements in 10 CFR Part 50 for emergency planning at nuclear power plants.

Recommendations of the Siting Policy Task Force (*see* NUREG-0625, August, 1979) with respect to possible changes in the reactor siting policy and criteria set forth in 10 CFR Part 100. One goal of the recommendations is to consider in siting the risk associated with accidents beyond the design basis (*i.e.*, Class 9) by establishing population density and distribution criteria.

Proposed "Action Plans" (*see* Draft NUREG-0660, December 1979) for implementing recommendations made by bodies that have investigated the Three Mile Island accident. Among other matters these plans incorporate recommendations for rulemaking related to degraded core cooling and core melt accidents.

Imposition of additional requirements on operating reactors, e.g., the short-term "lessons-learned" recommendations. See "TMI-2 Lessons Learned Task Force Status Report and Short-term Recommendations," NUREG-0578 (1979), and Orders published in 45 FR 2427-2455 (January 11, 1980).

As the Commission stated in its new interim policy, "It is the Commission's policy and intent to devote NRC's major resources to matters which the Commission believes will make existing and future nuclear power plants safer, and to prevent a recurrence of the kind of accident that occurred at Three Mile Island." 45 FR at 40104.

IV. CONCLUSION

The staff has concluded that no "special circumstances" exist which would warrant reopening environmental proceedings for the Diablo Canyon, Palo Verde, and Rancho Seco nuclear plants. In the staff's view, the "special circumstances" standard under the Commission's new interim policy is appropriate for judging whether past NEPA reviews should be reopened. An administrative agency is empowered to revise its policies in an evolutionary process as it gains experience in the application of the laws which the agency is charged to administer. See *NLRB v. J. Weingarten, Inc.*, 420 U.S. 251, 265-67 (1975); cf. *Vermont Yankee Nuclear Power Corporation v. Natural Resources Defense Council*, 435 U.S. 519 (1978). Thus, a change in policy to allow broader consideration of accidents in future NEPA reviews does not invalidate the findings in past reviews under the Annex, particularly in light of judicial approval of the Commission's past practice. See note 1 *supra*. By establishing a "special circumstances" standard for reopening completed environmental reviews, the Commission has recognized that it may be appropriate to supplement a past environmental review under certain circumstances in view of the transformation in policy which the Commission is undertaking. The staff does not believe, however, that such "special circumstances" are present in the three instant cases. In all events, NEPA does not require an agency to reopen the environmental record unless new information or circumstances would clearly mandate a change in result. *Greene County Planning Board v. FPC*, 559 F.2d 1227, 1233 (2d Cir. 1976), *cert. denied*, 434 U.S. 1086 (1978).

With respect to the Commission's "repudiation" of WASH-1400 as a basis for FOE's request that supplemental environmental statements be issued, the staff notes that WASH-1400 published in draft form in 1974 did not form the bases for the 1971 Annex's conclusion that the probability of occurrence of Class 9 accidents was too low to warrant their site-specific consideration under NEPA. See 45 FR at 40102; *Pennsylvania Power and Light Company* (Susquehanna Steam Electric Station, Units 1 and 2), LBP 79-29, 10 NRC 586, 589 (1979). The Commission's policy statement on

WASH-1400 in light of the critique of the study by the Risk Assessment Review Group does not provide, therefore, a basis for reopening the environmental record for the three plants at issue.

Finally, the staff again notes that the Commission has taken several actions by rulemaking and by order to assure that adequate measures are taken to prevent serious accidents, like the one at Three Mile Island, and to mitigate the consequences of serious accidents. In view of the foregoing, the petition of the FOE is denied.

A copy of this decision will also 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 (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 19th day of June 1980

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-280 OL
50-281 OL
50-338 OL
50-339 OL

VIRGINIA ELECTRIC AND
POWER COMPANY
(Surry Power Station, Units 1
and 2; North Anna Station,
Units 1 and 2)

June 20, 1980

The Director of Nuclear Reactor Regulation denies a petition under 10 CFR 2.206 of the Commission's regulations which requested, *inter alia*, that the North Anna and Surry Stations be shut down pending resolution of steam generator and turbine problems.

TECHNICAL ISSUES DISCUSSED:

Tube support plate corrosion; resin discharge into steam generators; tube denting; secondary water chemistry; demineralizer systems; turbine disc cracking; missile hazard.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

In letters dated February 18, February 22, February 28, April 25 and May 25, 1980, Mrs. June Allen, on behalf of the North Anna Environmental coalition (NAEC), requested the Nuclear Regulatory Commission (NRC) take the following actions with regard to the Surry and North Anna Power Stations:

1. Shut down North Anna #1 for turbine inspection, installation of steam generator inspection port, and installation of redesigned valves in the nonfunctioning Powdex demineralizer, proscribing restart pending adequate spill-proof test results and resolution of the noise problem in steam generators A and B.

2. Continue licensing moratorium on North Anna #2, requiring the same inspection and repairs as those for North Anna #1. (NAEC would also request that the licensing moratorium be continued for Sequoyah since this reactor also has a Westinghouse turbine.)

3. Keep Surry #1 closed, pending its steam generator replacement, as unsafe to operate with its multiple related problems; plugged steam generator tubes in excess of 25%, cracked turbine, and questionable seismic resistance.

4. Maintain Surry #2 shutdown pending repair of cracked turbines, redesign and repair of Powdex demineralizer, installation of seismic reinforcements, and stringent testing of new steam generator and condenser tubing.

These letters have been referred to the Director, Office of Nuclear Reactor Regulation for treatment collectively as a petition under 10 CFR 2.206. For the reasons set forth in this decision, the requests are denied.

As bases for her requests, Mrs. Allen expressed certain concerns and posed questions regarding the Surry and North Anna Stations. These concerns, and the NRC responses are as follows:

Concern:

VEPCO's severe problems with Westinghouse steam generators at Surry were to be avoided at North Anna by the presence of fresh water, by the absence of chloride, and by the use of the Powdex demineralizer or polisher. Yet according to VEPCO's 12-10-79 report, the spills of the resins into the steam generators at North Anna actually created Surry-like corrosion conditions and the beginning of similar corrosion and cracking in 35% of the tubes.

Response:

The licensee's report dated December 10, 1979 entitled, "North Anna Power Station Unit 1, First Refueling Steam Generator Inspection Report," stated that tube support plate corrosion observed at North Anna 1 appeared to be similar to early stages of the denting phenomena affecting other plants, especially those with salt water cooling. This corrosion process has been attributed to secondary water chemistry in other plants with the

primary causal agent being chlorides. However, the licensee concluded this could not be the Case at North Anna 1.

Therefore, the licensee and Westinghouse personnel made a review of the North Anna 1 plant chemistry to determine what causative agent might have induced the tube support plate corrosion. As stated in the licensee's report, it was observed that a major discharge of resins from the Powdex polisher into the steam generators occurring in February 1979 produced acid sulphates which may have led to plate corrosion and subsequent denting.

The licensee went on to say that "Although the effects of sulphates on SG chemistry were not well understood at the time, it appears the Powdex polisher resins may have contributed or/are responsible for tube support plate corrosion seen at North Anna 1."

The problems affecting pressurized water reactor steam generators result from complex interactions involving steam generator chemistry, materials, and thermal hydraulic behavior. We do not know all of the complex interactions of steam generator chemistry which can lead to aggressive chemicals concentrating and depositing on tube support plates. A great amount of research and testing is now underway to identify these complex interactions.

Tube denting occurs when carbon steel tube support plates experience corrosion (chemical deposition) at the locations where the tubes pass through the plates. The corrosion product occupies a greater volume than the original support plate material and squeezes down on the tube thereby deforming it. If corrosion continues, gross deformation and eventual cracking of the support plate and tubes result.

We had not anticipated the occurrence of denting at North Anna 1, even at its earliest stages, based on experience in other plants using secondary all-volatile treatment and freshwater condenser cooling. However, it was so identified in the licensee's December 10, 1979 report and it was our responsibility to evaluate the licensee's report to determine if the North Anna 1 steam generators could continue to operate without impairing the health and safety of the public.

Our safety evaluation report for the licensee's December 10, 1979 report was sent to the licensee in a letter dated February 4, 1980. In our report we stated that the licensee had acted in an appropriate manner to identify the cause of early corrosion on the tube support plates and had provided a satisfactory explanation. We further stated that the licensee had implemented conservative maintenance (all row 1 tubes in the steam generators were plugged) and corrective actions implemented commensurate with the findings of the steam generator inservice inspection at North Anna 1.

Finally, we stated that continued operation of the North Anna 1 steam generators would not endanger the health and safety of the public.

Since then we have continued our review of the licensee's corrective actions regarding tube integrity, tube support plate corrosion, and changes in steam generator chemistry. Our review has been based on long term operation of the North Anna 1 steam generators. On April 8, 1980 we sent a letter to the licensee requesting additional information regarding the licensee's corrective actions with respect to: (1) hideout return of acid sulphates due to previous contamination from polisher resins, (2) oxygen control, and (3) the licensee's corrective boric acid treatment at the North Anna 1 steam generators in January 1980. The licensee has stated its response will be provided for our review in June 1980.

Secondary water chemistry and its effect on steam generator tube integrity is a high priority concern of the NRC. Due to the complexity of the corrosion problem involved and the state-of-the-art as it exists today, we have imposed a license condition for operating plants that requires the implementation of a secondary water chemistry monitoring and control program.

The required program developed by the licensee with input from reactor vendors and other consultants accounts for site and plant-specific factors that affect chemistry conditions in the steam generators and allows for the continuous feedback of new knowledge gained from operating experience.

This licensing condition was made part of the North Anna 1 operating license by Amendment issued on December 28, 1979 and was a condition to the operating license issued for North Anna 2 on April 11, 1980.

In 1978, the NRC undertook a review of generic safety issues to determine those issues with potentially significant public safety implications which should qualify as "Unresolved Safety Issues" for reporting to the United States Congress. The NRC review included the development of proposals by the NRC staff which were reviewed and approved by the NRC Commissioners.

This review described in a report, NUREG-0510, entitled "Identification of Unresolved Safety Issues Relating to Nuclear Power Plants - A Report to Congress" dated January 1979 identified Task Action Plan A-3, Pressurized Water Reactor Steam Generator Tube Integrity, as a high priority action item requiring resolution.

Task Action Plan A-3 provided a description of the problem; the staff's approaches to its resolution; a general discussion of the bases upon which continued plant licensing or operation can proceed pending completion of the task; the technical organizations involved in the task and estimates of the manpower required; a description of the interactions with other NRC offices, the Advisory Committee on Reactor Safeguards and outside

organizations; estimates of funding required for contractor supplied technical assistance; prospective dates for completing the task; and a description of potential problems that could alter the planned approach or schedule.

In addition, the reorganization of the Office of Nuclear Reactor Regulation, which took place on April 28, 1980, has created a new branch defined as the Chemical Engineering Branch whose duties now include the review of water chemistry and the evaluation of water chemistry management.

Also, licensees with pressurized water reactor steam generators have established a joint steam generator owners group utilizing the expertise of the Electric Power Research Institute to conduct high priority research and testing in these matters.

Finally, the Powdex demineralizer system at North Anna 1 was incorporated into the design of the facility prior to the occurrence of the Surry steam generator problems.

Concern:

One NRC engineer likens the corrosion to a "malignant tumor," all of whose cells must be removed if North Anna's steam generators are to regain health. Nevertheless, the NRC has permitted the installation of a steam generator inspection port to be put off until 1981, after the second re-fueling at North Anna #1.

Response:

In the licensee's report dated December 10, 1979, the licensee committed at our request to installing inspection ports in the North Anna 1 steam generators during the second refueling outage. And, in our letter of January 21, 1980, we requested the licensee to install these ports in the steam generators at North Anna 2 prior to start of operations. As specifically stated in our letter, the installation of these inspection ports was to facilitate monitoring the progression of tube denting and tube support plate degradation and to facilitate the removal of tube sections for laboratory examinations.

Inspection ports installed in steam generators will not in themselves inhibit the corrosion process responsible for steam generator tube denting and cracking. Maintaining a steam generator's "health" as you state in your letter involves several actions. They are: (1) adequate secondary water chemistry monitoring and control, (2) periodic steam generator surveillance inspections, (3) corrective actions once steam generator corrosion and tube denting is identified, and (4) continuing research in the corrosion phenomena involved.

Both North Anna 1 and 2 will have the ports installed at the next regularly scheduled steam generator inservice inspection specified in the Technical Specifications for each unit, which is the first occasion that these ports would be used to perform their intended function as described above.

Concern:

According to NRC Atlanta, the damaging resin spills at North Anna were caused by a semi-automatic system malfunction with Powdex valve insufficiencies requiring redesign. Thus North Anna #1 is currently operating without demineralization.

Response:

The Powdex demineralizer system at North Anna 1 is presently bypassed while the licensee completes an engineering evaluation for possible design changes to the Powdex system.

However, the licensee is presently maintaining Westinghouse specified steam generator chemistry specifications without the use of the Powdex demineralizer system.

Also, the licensee, on the recommendations of Westinghouse, has installed hydrogen measurement apparatus (Kent-Cambridge Mark IV Hydrogen Analyzers) in the secondary water system.

The hydrogen analyzers will enable the licensee to monitor dissolved hydrogen continuously and thereby determine any corrosion rates in the steam generators.

Concern:

Ironically, such a Powdex demineralizer has just been installed in Surry #2, down for over a year for steam generator replacement (a difficulty some NRC engineers thought demineralizers might have prevented). It must now follow that the same redesign is required at Surry #2 to prevent a restart and subsequent resin spill which could begin Surry's \$133 million steam generator repair troubles anew.

Response:

The demineralizer system being installed at Surry is a different type of system than the systems presently installed at North Anna. The North Anna demineralizer system is a Powdex system and the Surry system is a Deep Bed Demineralizer. There is a basic difference in these two systems. The Powdex system utilizes a powder flock to precoat a series of filter elements contained within each demineralizer vessel whereas the Deep Bed system utilizes resin beads on top of an internal piping network in each vessel. There are two protecting mechanisms at Surry which mitigate a resin

dump such as occurred at North Anna in that the slots and holes in the Surry Deep Bed Demineralizer internal piping network are significantly smaller than the resin bead diameter which prevents most of the resin from escaping. Also, each Surry Deep Bed Demineralizer vessel is equipped with wire screen to prevent the escape of the resin beads into the effluent.

Concern:

As noted earlier, resin spill effects upon the secondary chemistry can cause corrosion and cracking not only in the steam generators, but also in the turbines. Since the turbine building at North Anna is settling abnormally, the risk to turbine integrity is enhanced; periodic shimming has already been necessary.

Response:

The relationship between turbine disc cracking and steam/secondary water chemistry has not yet been verified. Therefore, it cannot be stated at this time whether the resin spills at North Anna 1 could cause and/or contribute to postulated turbine disc cracking in the North Anna 1 turbine.

As part of the industry related study regarding the generic turbine disc cracking problem, the Electrical Power Research Institute is presently evaluating the effect of secondary water chemistry on turbine disc integrity.

By letter dated February 25, 1980, the NRC requested information from licensees with operating Westinghouse turbines regarding plant specific operating history of secondary water chemistry and the possible effects on turbine disc cracking. We are presently evaluating the licensees' responses.

With respect to North Anna 1, the licensee has indicated that for 331 days of operation, the measured pH, cation conductivity, and sodium concentrations indicate steam carryover (i.e. impurities) to the turbine at less than 0.25 percent. Therefore, the NRC staff believes that steam chemistry at North Anna 1 is a very unlikely factor regarding turbine disc integrity. However, until all the studies are complete, we cannot make any specific conclusions regarding North Anna 1 and the question of turbine disc cracking and effects of secondary water chemistry.

The question of turbine integrity (i.e., missile risk) at North Anna 1 and 2 has been an issue before the Appeal Board. On April 7, 1980, the Appeal Board issued a Memorandum and Order (ALAB-589) in the North Anna 1 and 2 proceeding regarding the issue of risk to the facility from turbine missiles. The Appeal Board had heard testimony from the NRC and the licensee last June regarding the probabilities associated with turbine missile risks, as well as the factors of conservatism built into these probabilities. More recently, the NRC staff and the licensee submitted affidavits describing the recent phenomena of cracking in Westinghouse steam turbines. The investigation of this matter is ongoing and will not likely be

completed until next fall. On the basis of the information supplied thus far, the Appeal Board concluded that the turbine disc cracking being experienced elsewhere is not likely to occur to any hazardous extent at North Anna 1 prior to the next refueling shutdown now scheduled for December of this year. The Appeal Board noted that the licensee has committed to have the Unit 1 turbine inspected during the December shutdown, and has instructed the licensee and staff to immediately report any proposed deviation from that commitment to the Appeal Board. Upon completion of the analysis of the turbine cracking problem, the staff and the licensee must report back to the Appeal Board, addressing in detail the known causes of the early cracking and any required and necessary actions to correct the problem.

With respect to turbine building settlement, the staff has previously evaluated this matter. Theoretically, if the turbine support structure were allowed to tilt (or bend due to settling or tilting) without limit, some bending of the turbine shaft (over and above the bending associated with the natural sag line) might occur. Ultimately, it is possible that the increased shaft bending may produce additional cyclic stresses in the shaft, and thus raise the probability of a fatigue failure of the shaft. However, we do not believe that a shaft failure in itself would lead to disc failure and missile generation.

We believe that a shaft failure would lead to severe braking of the rotor by way of friction between the rotary and secondary parts of the turbine, causing the rotor to slow down and stop without missile generation.

Our viewpoint is supported by actual turbine failures which produced similar internal rotor conditions. Specifically, there have been turbine failures near operating speed wherein disc rupture occurred, but without missile ejection. The disc ruptures induced a dynamic imbalance of the rotor components, thus braking the rotor to a stop. A similar condition would be produced by a broken shaft, wherein imbalance of the damaged rotor would cause severe internal friction which would dissipate the rotor energy, mostly in the form of mechanical deformation and heat.

In addition to the above considerations, the turbine building at North Anna 1 is being measured for indication of settlement by the licensee according to the technical specifications for North Anna 1.

Based on the above, we do not believe that turbine pedestal settling at North Anna 1 has any significant effect on the potential for turbine missile generations.

Concern:

At both Surry units, the turbines are known to be cracked, with NRC staff listing Surry Unit #1 in Category AA and Surry Unit #2 in Category A. Although unlike North Anna, the Surry units are not now under review by an Appeal Board concerned with turbine missile risk, that risk would seem to be even greater under current Surry conditions and thus deserves the direct attention of the Commission.

Response:

Turbine disc cracking has not been discovered at both Surry units, nor are the turbines known to be cracked as stated in Mrs. Allen's letter. A keyway crack was discovered in one disc on the Surry 2 turbine low-pressure rotor during the fall of 1979 but it has been repaired and reinstalled in good condition.

At the time of your February 18, 1980 letter, Surry 1 had not been inspected for turbine disc cracking. However, because of turbine vibration resulting from the loss of three blades, Surry 1 was shut down on February 19, 1980. During this shutdown, the licensee decided to inspect the turbine discs. This inspection has been completed and no keyway or bore cracking was discovered on Surry 1. Therefore, the Surry turbines are in good condition as far as turbine missile risks are concerned. Repairs have been made on the blades damaged at Surry 1 on February 19, 1980.

The following questions have been posed by Mrs. Allen:

- a. Why did VEPCO make no 2/79 report of the significant and damaging 200-300 pound resin spill in the North Anna steam generator of 2-27-79?
- b. Why did the NRC require no report?
- c. Why did the North Anna plant continue in operation after the spill as opposed to closing for clean-up of the resins from the steam generators?
- d. Why did the NRC on-site inspector not know of the spill until months after it had taken place?
- e. Was the NRC informed before the four (4) succeeding spills? If so, what action was taken?
- f. Was the major resin spill of 2-27-79 related to the volume control tank discharge and Iodine-131 at 310 times specified value reported on 2-27-79 or to the "uncontrolled release to the storm drain" of 2-28-79 (See April and May OUSR's of 1979)
- g. What are the implications of the three September 1979 spills on the 10th, 12th, and 15th, followed by the radiation release accident of September 25?

h. Have resin-spill effect warnings been sent to other licensees with Powdex demineralizers and Westinghouse steam generators?

i. Was NRC's first notice of W turbine disc cracking and missile problems the anonymous letter of November 5, 1979 suggesting a "flagrant Westinghouse violation"?

j. In terms of reportability, NAEC is puzzled as to why the 3-28-79 reactor scram at Browns Ferry #1 was not a reportable event since it was "due to false high pressure and low water level signals generated when concrete that was dislodged during a floor drilling operation struck a local panel."

Today we are concerned with the implications of disgruntled employees at Browns Ferry cutting the cords and removing the mouthpieces of "between 65 and 70 implant telephones" this past weekend. What does this event say of worker responsibility or worker comprehension of the safety necessity of implant communication? Will there be an NRC investigation?

Response to questions (a), (b), (d) and (e):

Five resin spills occurred at North Anna 1 on February 27, 1979; July 19, 1979; and on September 10, 12, and 15, 1979, respectively. The February 27, 1979 spill transferred 200 to 300 pounds of resin into the steam generators following a pre-coating of the filter elements with resin in the "B" Powdex vessel. The transfer occurred during vessel refill operations when leaking discharge valves caused a pressurization transient in the "B" vessel. The July 19, 1979 spill occurred when the pipe from the mix tank became plugged and spent resin was then carried into the steam generators. The mechanism causing the remaining three events was the same as that which occurred on February 27, 1979 - the September 10, 12, and 15, events occurring in the "A" Powdex vessel, the "D" Powdex vessel and the "C" Powdex vessel, respectively.

The introduction of resin into the steam generators is not presently a reportable event. Likewise, demineralizer malfunctions are not reportable events. Therefore, the licensee was not required to report the five resin spills to the NRC and the resident NRC inspector first learned about the spills in late November 1979 during the licensee's steam generator inservice inspection. However, the licensee did report these resin spills in its December 10, 1979 report already discussed elsewhere in this decision.

The high priority Task Action Plan A-3, "Pressurized Water Reactor Steam Generator Tube Integrity" has been mentioned previously. The questions of 1) additional requirements for reporting equipment failures in the secondary feedwater system and 2) the effect of secondary steam/water

chemistry requirements are being evaluated in this Task Action Plan. This task is presently scheduled for completion in September 1980.

Based on the independent investigation of the NRC and the President's Commission on the Three Mile Island Nuclear Accident, it was determined that NRC must devote a higher priority and proportion of its manpower to the evaluation of reactor operating experience in order to establish requirements for reporting operating events.

Therefore, changes have been made within the NRC, to implement the findings noted in the above investigations. Within the Office of the NRC Executive Director for Operations a new office has been created which is designated as the Office of Analysis and Evaluation of Operational Data (AEOD). AEOD has been established to evaluate and analyze operational data associated within all NRC offices involved with operational data collections, analysis and feedback.

The Office of Inspection and Enforcement has augmented its evaluation and analysis of all incoming licensing event reports to determine if reporting requirements need revision or changes to reflect timely operating reactor experience.

The recent reorganization of the Office of Nuclear Reactor Regulation has created a new branch designated as the Operating Experience Evaluation Branch (OEEB) whose duties include the continuing systematic assessments of reactor operating experience to establish requirements for reporting operating events. This office will provide the Nuclear Reactor Regulation interface with the Office for Analysis and Evaluation of Operational Data and coordinates with the Office of Inspection and Enforcement on matters involving operating experience evaluation by the NRC and the industry.

Finally, as a result of the Three Mile Island accident, an independent nuclear industry group designated as the Nuclear Safety Analysis Center (NSAC) has been established to determine a reliability data base from operating reactor experience.

Therefore, based on the efforts of these new organizations within NRC, it can be expected that NRC reporting requirements will continue to be revised and/or augmented to reflect updated operating reactor experience.
Response to question (c):

On February 27, 1979, North Anna 1 steam generator water chemistry analysis indicated abnormal operating conditions. The pH was depressed and the conductivity elevated. These abnormal chemistry indicators were attributed to the resin spill and subsequent injection of 200 and 300 pounds of resin into the three steam generators.

Maximum blowdown was being obtained on each steam generator prior to the resin spill and, therefore, the licensee did not take additional actions to elevate the pH. Approximately 8 1/2 hours after the spill, ongoing chemistry analysis indicated a favorable upward trend in the pH samples and a downward trend in the conductivity measurements.

The licensee notified its vendors of the event and remedial actions, including plant shutdown, were discussed. Since a plant shutdown from greater than 95 percent power operations would require 24 hours, the decision was made by the licensee to keep the plant on line. There was noted concern by the licensee and its vendors that a shutdown could result in a resin melt with plate out on the tubes.

Since pH measurements were within normal operating specifications within 14 hours of the spill, it would appear at this time that the licensee's decision to keep the plant on line was correct.

Response to question (f):

The resin spill at North Anna 1 on February 27, 1979 was not related to the North Anna 2 volume control tank discharge and subsequent iodine-131 release which occurred on February 27 and 28, 1979. The resin spill occurred in the secondary system of North Anna 1 whereas the North Anna 2 volume control tank discharge and iodine-131 release were related to a common high level waste drain tank and inlet in the sampling system of the primary coolant system of North Anna 1 and 2.

Response to question (g):

The North Anna 1 transient which occurred on September 25, 1979 has been analyzed in detail by the NRC. Inadvertent operator error, equipment failure and combinations thereof have been examined in great detail. We do not at this time see any inter-relationship between the three resin spills occurring in September 1979 and the September 25, 1979 event at North Anna 1.

Response to question (h):

The NRC has not at this time issued any bulletins to licensees with Powdex demineralizers and Westinghouse steam generators. However, licensees with Westinghouse turbines, as mentioned previously, have been required to provide plant operating data and experience regarding steam/water secondary chemistry. Also, as prime contractor to licensees with Westinghouse and Combustion Engineering components, the Electric Power Research Institute is now conducting research and testing on the

phenomena of steam generator corrosion and tube cracking and the inter-relationship of secondary water chemistry and impurities including resins.

Response to question (i):

A chronology of events concerning NRC's knowledge of the disc cracking problem is presented below.

Surry #2 was shutdown in the summer of 1979 for steam generator repairs. During this shutdown, the licensee determined to have the Westinghouse Corporation (turbine vendor) refurbish the low-pressure rotors of the Surry #2 turbine. During the refurbishment, in September 1979, the vendor discovered a crack in one disc. This discovery was the first indication of keyway cracking. This disc was repaired in the Fall of 1979. No special report was sent to the NRC at this time by either the licensee or the vendor and no such report was required.

During the period October 23 - 30, 1979, the Point Beach #1, (Wisconsin Electric Company) low-pressure rotors were inspected by the vendor and the second indication of keyway cracking was identified.

On October 30, 1979, the vendor discussed this matter with the licensee/owners of Westinghouse turbines at a meeting held in Charlotte, North Carolina.

On November 5, 1979, the NRC was notified of the crack found in the Point Beach #1 low-pressure rotors during a meeting held with the licensee. On November 17, 1979, the Director of Inspection and Enforcement received a copy of the anonymous letter.

On November 20, 1979, the NRC staff discussed these matters (by telephone) with the turbine vendor. The vendor notified the staff that keyway cracks had now also been observed in the rotors of Palisades and Zion #1 during inspections just completed in November 1979.

On November 27, 1979, the NRC received a letter from Consolidated Edison (Indian Point) advising that the turbine vendor had discussed this problem with the licensee.

On December 17, 1979, Westinghouse briefed the NRC staff on the now multi-unit keyway crack problem and the results of all inspections conducted by the turbine vendor to date.

Finally, since December 17, 1979, the NRC staff has been in continual contact with Westinghouse and licensee/owners regarding this matter. A Disc Integrity Task Force composed of representatives of Westinghouse and the licensee/owners has been formed for the specific purpose of disseminating information related to keyway and bore cracks among Westinghouse, utility owners and the NRC staff. Other aspects of the

turbine disc cracking multi-unit problem have been discussed elsewhere in this decision.

Response to question (j):

You refer to two incidents that occurred at the Browns Ferry Nuclear Plant - a reactor scram at Unit 1 on March 28, 1979 and the disabling of inplant telephones on February 15, 1980. At the time of the referenced reactor scram, licensees were not required to report each reactor scram. Our regulations (10 CFR 50.72) have recently been amended to require prompt reporting of all reactor scrams at a facility. The NRC Office of Inspection and Enforcement has reviewed and evaluated the Tennessee Valley Authority (TVA) investigation of the scram. There was no damage to any instrumentation. The scram was caused by a piece of concrete impacting and producing vibrations in the instrument system panel. The Office of Inspection and Enforcement has concurred with TVA's assessment that a formal report is not required.

With respect to the incident on February 15, 1980 involving the plant telephones, our Office of Inspection and Enforcement was notified of the event on the morning of February 16, 1980. Since this event involved the destruction of government property, TVA also notified the Federal Bureau of Investigation (FBI). Under our interface agreement with the FBI, the latter is conducting the investigation of this incident. The Office of Inspection and Enforcement did verify that none of the security phones in direct communication with the NRC had been disabled. As soon as TVA discovered the damage to the inplant phones, they placed in service two-way radios to replace the damaged telephones until repairs were completed. We understand that the FBI and the Department of Justice are presently continuing their investigation of this incident.

Evaluation of Requests for NRC Action

The five requests for action are repeated in abbreviated form with the staff's evaluation:

1. Shut down North Anna 1....

As stated previously in this decision, the Appeal Board has determined that recent events regarding turbine disc cracking do not warrant the shutdown of North Anna 1 at this time in order to inspect the turbine.

Installation of steam generator inspection ports has previously been discussed in this decision. These ports will be installed at North Anna 1 prior to restart after the second refueling outage scheduled for December 1980.

We do not know at this time whether the licensee will decide to place the presently bypassed Powdex demineralizer back into operation. The licensee is presently conducting an engineering evaluation of the demineralizer system. However, we do know that the licensee is maintaining steam generator water chemistry within the specifications specified by the steam generators vendor. Also, the licensee has installed sensitive hydrogen monitors in the secondary system for determining corrosion rates in the steam generators. New procedures have been implemented for the daily analysis of secondary water chemistry for dissolved oxygen content, ammonia, and pH determination of condensate, feedwater, and blowdown samples.

Following a reactor scram at North Anna 1 on February 20, 1980 and prior to restart of power operations, intermittent mechanical noise was picked up on the plant's Loose Parts Monitoring System (LPMS). Tests and analysis by the licensee and Westinghouse acoustical expert identified the noise as originating in the region of the reactor vessel head and the steam generators.

The licensee and Westinghouse acoustic personnel continued to monitor and analyze the intermittent single event noises. On February 22, 1980, the licensee proposed an augmented LPMS surveillance program to the NRC staff as a basis for continued power operations at North Anna 1. This augmented surveillance program was approved by the NRC staff.

On March 6, 1980 a NRC acoustical team inspected the North Anna 1 LPMS, the LPMS plant procedures and the acoustical data files. The NRC team concluded that the noise signals were coming from the secondary side of the steam generators. The team further concluded that the licensee was doing all possible to evaluate the diagnostic information and that the licensee's augmented LPMS surveillance program provided an adequate basis for continued power operations.

Following a reactor trip on April 3, 1980, the LPMS again registered single event intermittent noises from the region of the reactor vessel head and steam generator B. The single event noises appeared to be of the same frequency and amplitude as recorded in the period February 20 to February 28, 1980 period.

In a special report dated May 1, 1980 the licensee provided the results of the Westinghouse acoustic evaluation of LPMS single event noises recorded at North Anna 1. Westinghouse determined that the impact noise was coming from the secondary side of steam generator B and was caused by an object weighing 4 ounces or less. The analysis further indicates there may be other objects in the secondary side of steam generators A and C. The noise in the reactor vessel head was analyzed as noise reflections from the secondary side of the steam generators. The analysis further concluded that

no loose parts are considered to be in the Reactor Coolant System. In its report the licensee committed to inspect the steam generator B for loose part objects at the next outage.

During a scheduled outage at North Anna #1 from May 24, 1979 to June 4, 1979, the licensee inspected the secondary side of steam generator B and located and retrieved an object approximately 1 1/2 inches long and 3/8 inches in diameter. The object is believed to be a center screw from a grinding wheel. The object was located on the top of the tube sheet between the No. 1 row tubes and adjacent to a blowdown line.

On June 4, 1979, North Anna #1 recommenced power operations. Since then, intermittent noise signals have registered on the LPMS. The licensee is continuing to monitor and analyze the intermittent noise signals and conform to the augmented LPMS surveillance program mentioned above.

2. Continue licensing moratorium on North Anna Unit 2 and Sequoyah....

The NRC Commissioners approved the licensing of Sequoyah for fuel loading and low power testing (5% of rated power) on February 28, 1980. The fuel loading and low power testing license for Sequoyah was issued on February 29, 1980.

The NRC Commissioners approved a similar license for North Anna 2 on April 10, 1980. The license for North Anna 2 was issued on April 11, 1980.

The installation of steam generator inspection ports has been discussed elsewhere in this report. The installation of these ports at North Anna 2 will be installed prior to restart after the first refueling outage.

The licensee plans to use the Powdex demineralizer system at North Anna 2 for initial cleanup of the secondary system and to establish secondary chemistry limit specifications. For power operations greater than 5 percent the licensee will bypass the North Anna 2 demineralizer as is now being done for North Anna 1. Also, the licensee will use the new procedures for determining secondary chemistry limits as described elsewhere in this decision for North Anna 1. Finally, depending on the engineering evaluation of the North Anna Powdex demineralizer system, the licensee may in the future make modifications to preclude resin injection into the steam generators and place these systems back into operation.

The Technical Specifications (Appendix A) to the licenses for both Sequoyah and North Anna 2 stipulate that prior to exceeding 5% power, the low pressure turbine shall be subjected to a preservice inspection. As part of this inspection, the licensees are required to fully examine the bore and keyway region of the discs in each low pressure turbine.

These required inspections have already been completed at Sequoyah and North Anna 2 and no turbine disc cracking has been found at either turbine.

3. Keep Surry Unit 1 closed....

We have approved the operation of Surry 1 with up to 28 percent of the steam generator tubes plugged, and as long as the Surry 1 steam generators are periodically inspected in accordance with the license condition for Surry 1, we find this acceptable for the operation of Surry 1.

As discussed previously in this decision, Surry 1 does not have cracked turbine discs.

Seismic matters for Surry 1 have been resolved. All safety related piping analyses related to the March 13, 1979 Show Cause Order have been completed and modifications completed as necessary. Other seismic questions regarding as-built conditions and anchor bolts have been demonstrated to be adequate for assuring safe operation of Surry 1.

4. Maintain Surry Unit 2 shutdown....

The Surry 2 turbine has been repaired and is in good condition as discussed elsewhere in this decision.

The Surry 2 demineralizer system is not of the same design as North Anna as discussed elsewhere in this decision.

The seismic adequacy of Surry 2 is presently under NRC review and Surry 2 will not start up until we are satisfied that the piping systems have been adequately analyzed and modified if so required.

Steam generator testing was stipulated as part of the Surry 2 steam generator repair program. The steam generators were hydrostatically tested after installation in accordance with the approved Surry 2 repair program.

Condenser tube testing is not presently specified in an NRC requirement for Surry #2. The questions of (1) additional requirements for reporting equipment failures in secondary feedwater systems, (2) the monitoring of condensate for the purpose of detecting condenser leakage, and (3) repair and testing of condenser tube leaks is being addressed under Task Action Plan A-3 described elsewhere in this decision.

The licensee is presently monitoring condensate effluent from the condenser for the purpose of detecting condenser tube leakage. The condensate effluent is monitored on a daily basis for conformance with the steam generator vendor specifications.

Conclusion

I have determined for the reasons set forth above that there exists no adequate basis for taking the actions requested by Mrs. Allen. Accordingly, the request of Mrs. Allen 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 Rooms for the Surry Power Station located at Swem Library, College of William and Mary, Williamsburg, Virginia 23185 and the North Anna Power Station located at the Board of Supervisor's Office, Louisa County Courthouse, Louisa, Virginia 23093 and the Alderman Library, Manuscripts Department, University of Virginia, Charlottesville, Virginia 22901. A copy of this document will also be filed with the Secretary of the Commission for Commission review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

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

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 20th day of June 1980.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

Docket No. 50-10

COMMONWEALTH EDISON
COMPANY(Dresden Nuclear Power
Station Unit No. 1)

June 26, 1980

The Director of Nuclear Reactor Regulation grants in part, and denies in part, petitions under 10 CFR 2.206 of the Commission's regulations which requested that an environmental impact statement be prepared on the proposed chemical decontamination of the Dresden Nuclear Power Station Unit No. 1 and that public hearings be held on the decontamination.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated March 19, 1979, Ms. Kay Drey requested that the Regulatory Commission (NRC) (the Commission) prepare an environmental impact statement on the Commonwealth Edison Company's (the licensee) proposed chemical decontamination of the Dresden Nuclear Power Station Unit No. 1. 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* April 16, 1979 (44 FR 22529).

By petition dated September 20, 1979, Ms. Marilyn Shineflug, on behalf of the Illinois Safe Energy Alliance, requested public hearings on the decontamination based on the lack of assurance that the NRC would issue an environmental impact statement. Notice of receipt of the petition was published in the *Federal Register* November 7, 1979 (44 FR 64577). By petition dated March 13, 1980, Mr. Robert Goldsmith, on behalf of Citizens for Better Environment and Prairie Alliance supported Ms. Drey's petition requesting the preparation of an environmental impact statement.

Ms. Drey's petition raised seven questions related to the decontamination and asserts that these questions establish a basis for the preparation of an environmental impact statement. Ms. Shineflug's petition raised an additional eight questions. These questions and the NRC staff's response to each question are contained in Appendix A attached to this decision.

The NRC staff has completed its environmental evaluation of the Dresden decontamination. We have evaluated the occupational exposures estimated by the licensee, reviewed the construction of the support facilities at Dresden Station, and have evaluated the system to be used to solidify the waste. Based on this review we conclude, as we concluded in 1975, that the decontamination will not cause any adverse environmental impacts.

Although the results of the staff's review indicate that this action will not significantly affect the quality of the human environment, I have concluded that an environmental impact statement should be prepared because of significant interest and concern expressed by members of the public relating to decontamination of Dresden Unit No. 1. The Commission's staff has, therefore, issued a Draft Environmental Statement.

The question raised by Ms. Drey and Ms. Shineflug and the NRC staff answers are incorporated as Appendix A to this statement.

CONCLUSION

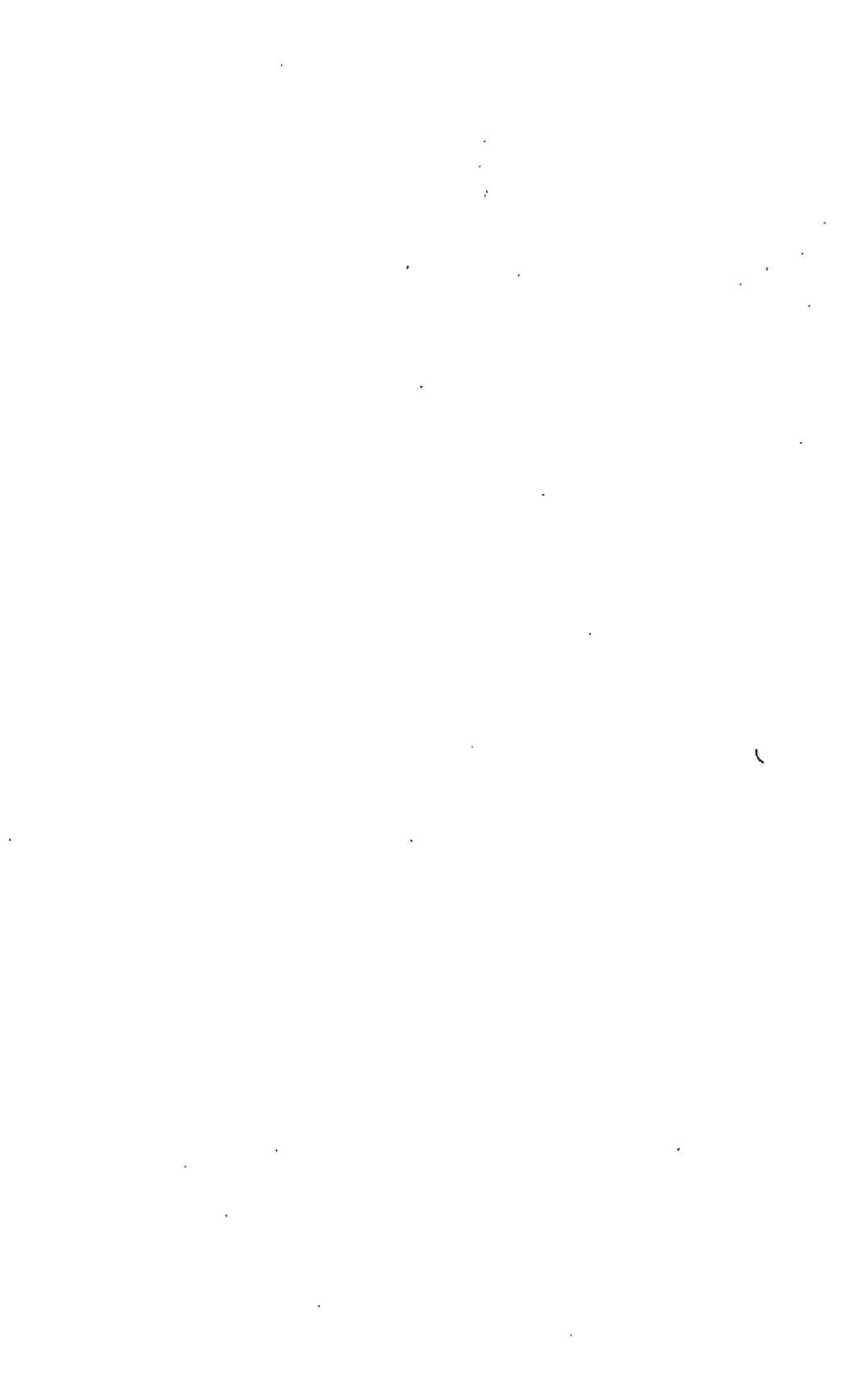
Based on the public's expressed concern over this action and the provisions of 10 CFR 2.206. I have determined that an environmental impact statement should be prepared for Dresden Unit 1 decontamination. The requests of Ms. Drey and Mr. Goldsmith are, therefore, granted. The public hearings requested by Ms. Shineflug were predicated on the lack of assurance that the NRC would issue an environmental impact statement. Since the NRC has issued the statement, such hearings will not be necessary.

A copy of this decision and Appendix A 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 Dresden Nuclear Power Station located at the Morris Public Library, 604 Liberty Street, Morris, Illinois 60451. The Draft Environmental Statement will also be placed at these locations. A copy of this decision and Appendix A will also be filed with the Secretary of the Commission for its review in accordance with 10 CFR 2.206(c) of the Commission's regulations.

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

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 26th day of June 1980



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- Boit, N.A., Analytical and Experimental Methods in Engineering Seismology, Trans ASCE 108 Pg. 365-408, 1942.
- seismic design, petition for seismic reanalysis, denied; DD-80-1, 11 NRC 162 (1980)
- Fed. R. Civ. P. 12(b)
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- Fed. R. Civ. P. 56
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- Financial Assistance to Participants in Commission Proceeding, 4 NRC 494 (1976)
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- Gleser, G.C.; Green, B.L.; and Winget, C.N. 1978. "Quantifying Interview Data on Psychic Impairment of Disaster Survivors." Journal Nervous and Mental Disease, 166, 209-216
- psychological stress, measurement, NEPA, restart proceeding; LBP-80-8, 11 NRC 305 (1980)
- Hearings before the Joint Committee on Atomic Energy on AEC Omnibus Legislation-1969, "AEC Omnibus Legislation," 91st Cong., 1st Sess. 39 (1969)
- civil penalties in absence of management misconduct or failure to take prompt corrective action; CLI-80-7, 11 NRC 417 (1980)
- K. Davis, Administrative Law Treatise, 2.13, pp. 134-135 (1958)
- civil penalties in absence of management misconduct or failure to take prompt corrective action; CLI-80-7, 11 NRC 419 (1980)
- Lifton, R.J. and E. Olson, 1976 "The Human Meaning of Total Disaster: The Buffalo Creek Experience." Psychiatry, 39, 1-18.
- psychological stress, NEPA, restart proceeding; LBP-80-8, 11 NRC 308 (1980)
- "Managua, Nicaragua Earthquake of December 23, 1972," Earthquake Engineering Research Institute Reconnaissance Report, May, 1973.
- seismic design, petition for seismic reanalysis, denied; DD-80-1, 11 NRC 163 (1980)
- Manual of Protective Action Guides and Protection Actions for Nuclear Incidents, Sept., 1978 (EPA-520/1-75-001)
- evacuation, 1-5 rem whole body, 5-25 rem thyroid; LBP-80-2, 11 NRC 58 (1980)
- NRC Draft Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Reactor Fuel, NUREG-0404, Volume 2, March 1978, p. H23
- spent fuel pools, corrosion effects; LBP-80-2, 11 NRC 53 (1980)
- NUREG-0578, TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations
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- NUREG-0600, Investigation into the March 28, 1979 Three Mile Island Accident by Office of Inspection and Enforcement
- initiating rulemaking, recombiners, hydrogen gas, adjudicatory proceeding; LBP-80-1, 11 NRC 38 (1980)
- "Nuclear Plant Seismic Margin," Robert L. Cloud, June 8, 1979.
- seismic design, petition for seismic reanalysis, denied; DD-80-1, 11 NRC 163 (1980)
- "On the Seismic Reliability of Nuclear Power Plants," C.A. Cornell and N.M. Newmark, May 1978.
- seismic design, petition for seismic reanalysis, denied; DD-80-1, 11 NRC 162 (1980)
- Quarantelli, E.L. (ed.), 1978, Disasters: Theory and Research, Sage Studies in International Sociology 13. Journals include Mass Emergencies: An International Journal of Theory, Planning, and Practice and The International Journal of Disaster Studies and Practice
- psychological stress, measurement, NEPA, restart proceeding; LBP-80-8, 11 NRC 305 (1980)

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- Quarantelli, E.L., and Dynes, R.R. 1977. "Response to Social Crisis and Disaster." *Annual Review of Sociology*, 3, 23-49 (a review of the state-of-the-art of disaster psychology/sociology, with a bibliography of more than 100 references
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- Restatement (Second) of Foreign Relations Law Section 38 (1972)
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- S. Rept. No. 553, 91st Cong., 1st Sess., at 16 (1969)
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- "Seismic Capability of Nuclear Piping," Robert L. Cloud, May 1979, ("Report on the Reanalysis of Safety Related Piping Systems-Surry Power Station, Unit 1-Virginia Electric and Power Company," Appendix F, June 5, 1979).
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- 3 Sutherland Statutory Construction, Chapter 60, "Remedial Legislation," Subsection 60.03, p. 34 (4th ed. 1974)
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- Titchener, J.L. and F.T. Kapp, 1976. "Family and Character Change at Buffalo Creek." *American Journal Psychiatry*, 133(3), 295-299
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