

NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

July 1, 1981 — October 31, 1981

**Volume 14
Book I of II
Pages 1 - 931**



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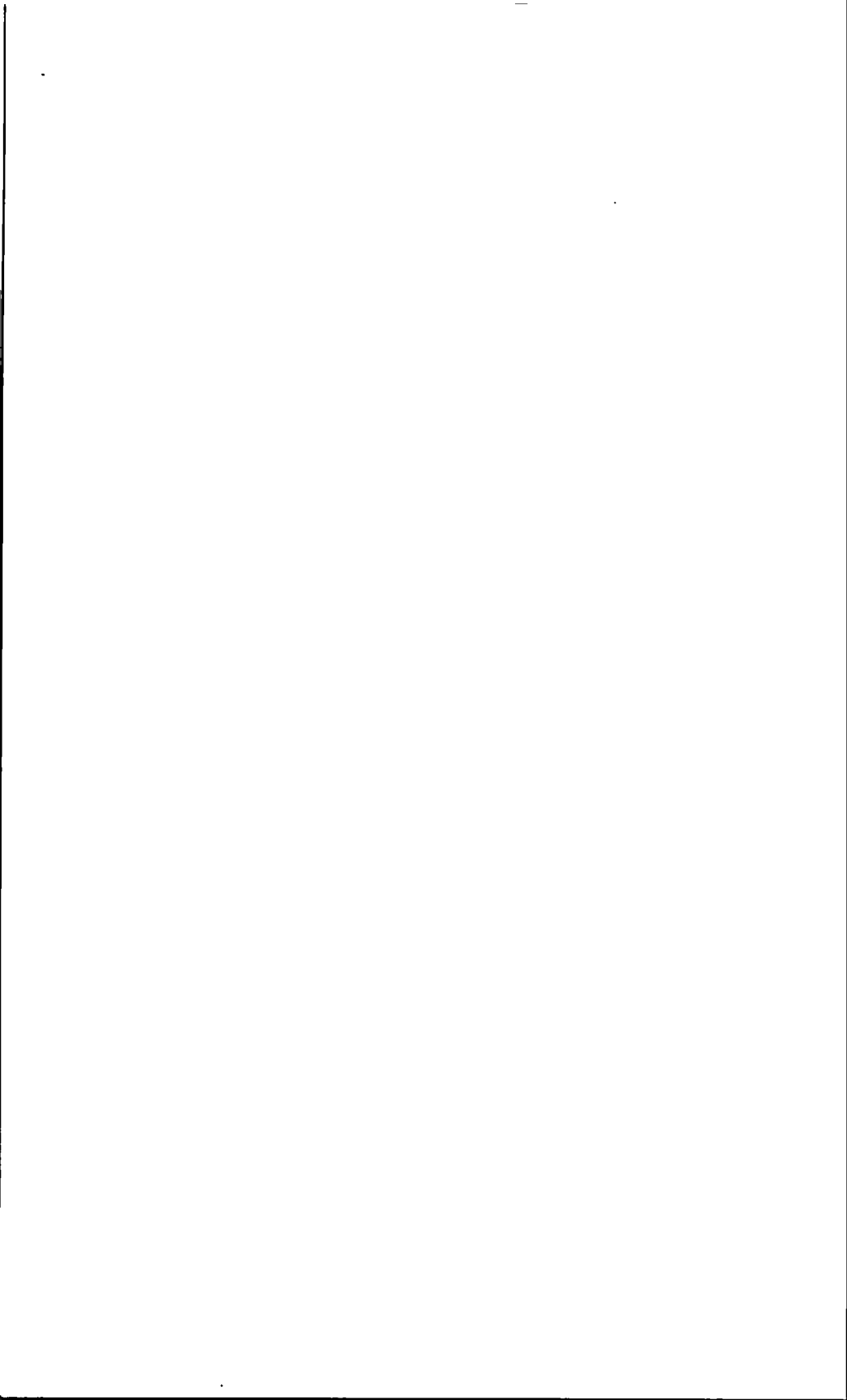
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PREFACE

This is Book I of the fourteenth volume of issuances (1 - 931) of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Appeal Boards, Atomic Safety and Licensing Boards, and Administrative Law Judge. It covers the period from July 1, 1981 to October 31, 1981.

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.

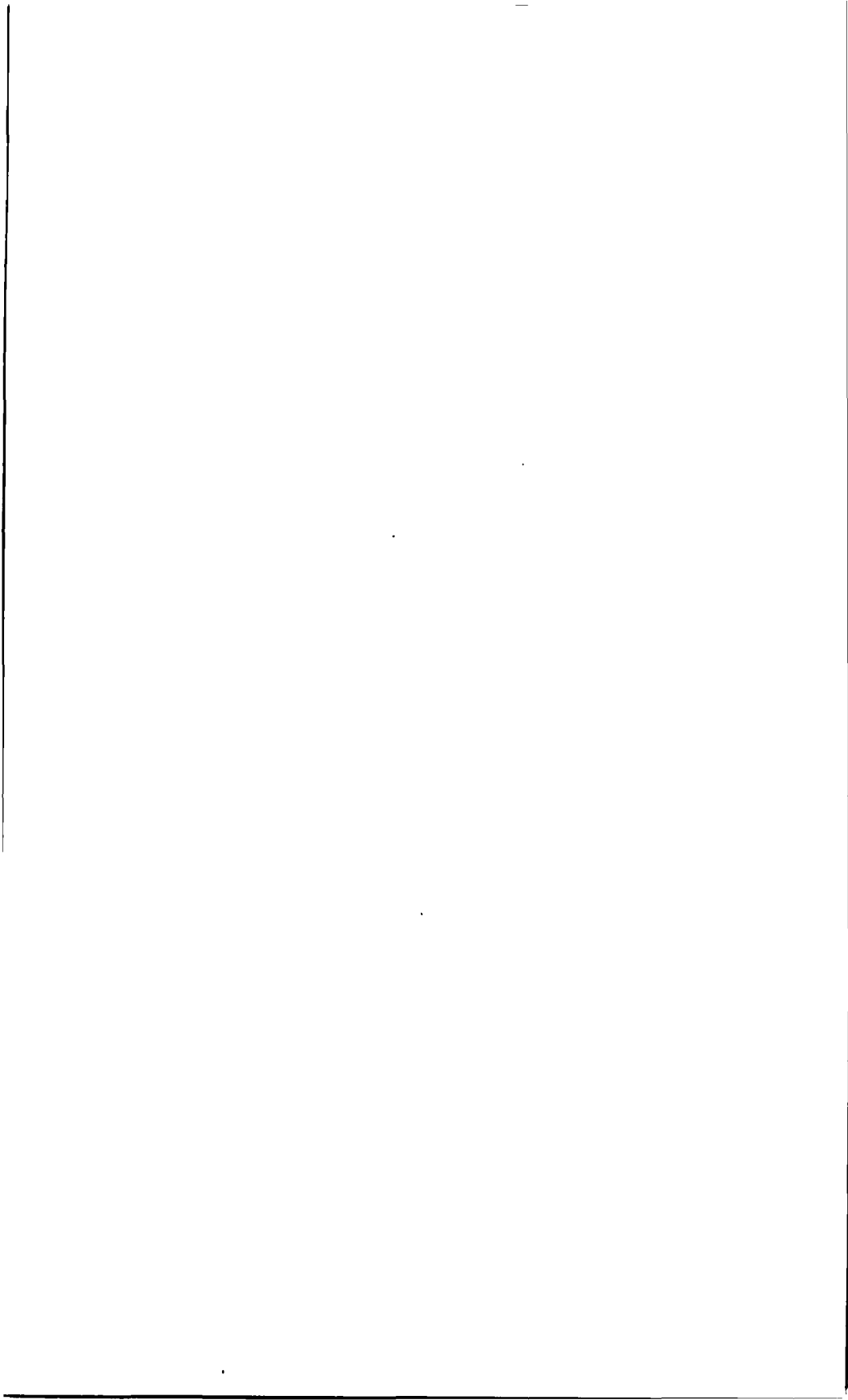
Beginning in 1969, the Atomic Energy Commission authorized Atomic Safety and Licensing Appeal Boards to exercise the authority and perform the review functions which would otherwise have been exercised and performed by the Commission in facility licensing proceedings. In 1972, that Commission created 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

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-369
50-370

DUKE POWER COMPANY
(William B. McGulre
Nuclear Station, Units 1 and 2)

June 29, 1981

Following the issuance of a Licensing Board's decision (LBP-81-13) authorizing the Director of Nuclear Reactor Regulation to issue a full-power, full-term license for the operation of Units 1 and 2 of the McGuire facility, and upon the completion of its "effectiveness review" of that decision as it relates to full power operation of Unit 1, the Commission authorizes the Director to issue the full-power, full-term license for the operation of Unit 1. The Commission takes this action without prejudice to its "effectiveness review" for Unit 2, the normal appellate review of the Licensing Board's decision (as it pertains to both Units 1 and 2) by the Appeal Board and by the Commission, and the motion to stay the effectiveness of the Licensing Board's decision now before the Appeal Board.

ORDER

In its supplemental initial decision dated May 26, 1981, the Atomic Safety and Licensing Board resolved the remaining issues in this proceeding and authorized the Director of Nuclear Reactor Regulation, after making the requisite findings, to issue full term licenses to Duke Power Company authorizing full power operation of McGuire Nuclear Station, Units 1 and 2.

Intervenor, Carolina Environmental Study Group (CESG), has requested the Atomic Safety and Licensing Appeal Board pursuant to 10 C.F.R. 2.788 to stay the effectiveness of the decision. However, quite apart from this stay request, the Licensing Board's initial decision does not become an effective authorization until the Commission has taken the actions outlined in its Order, dated May 28, 1981. These actions entail analysis of the Licensing Board's decision to determine whether it should become effective.

The Commission completed a partial effectiveness review and on June 11, 1981, authorized the Office of Nuclear Reactor Regulation to issue a license to Duke Power Company to operate McGuire Nuclear Station, Unit 1 at steady state reactor core power levels not in excess of 5% of rated power. The Commission has now completed its effectiveness review as it relates to full power operations of Unit 1 and has decided that the Licensing Board's May 26, 1981 supplemental initial decision may become effective insofar as full power operation of Unit 1 is concerned. This effectiveness decision is without prejudice to Commission effectiveness review for Unit 2, the normal appellate review of the Licensing Board's decision by the Appeal Board and by the Commission, and the Intervenor's stay motion filed June 8, 1981, which is now before the Appeal Board.¹

The likelihood of an accident that would lead to generation of hydrogen in excess of the design limits in 10 C.F.R. 50.44, and the effectiveness of measures to mitigate the consequences of such hydrogen generation, were critical issues in the Commission's deliberations on effectiveness. The licensee has agreed to install and use an igniter hydrogen mitigation system, and has agreed to license conditions which provide that (1) for operation beyond January 31, 1982 the Commission must confirm that an adequate hydrogen control system for the plant is installed and will perform its intended function in a manner that provides adequate safety margins, and (2) during the interim the licensee shall continue a research program on hydrogen control measures and the effects of hydrogen burns on safety functions. The Commission believes that in this case installation and use of an appropriate hydrogen mitigation system is required for adequate protection of the public health and safety.

The Commission believes, however, that operation of the igniter system should be initiated upon a safety injection signal, with accompanying indications of a loss of coolant accident.

¹On May 15, 1981, Intervenor, CESG, filed a motion with the Commission asking the Commission to order review by an Atomic Safety and Licensing Appeal Board of a portion of the Licensing Board's Memorandum and Order issued in the above-captioned proceeding dated May 6, 1981. CESG's motion is an impermissible effort to obtain interlocutory Commission review of a Licensing Board order and is, therefore, denied. 10 C.F.R. 2.785 and 2.786.

Accordingly, the Director, Office of Nuclear Reactor Regulation is authorized to issue a full power, full term license to Duke Power Company which shall conform substantially to the terms of the June 9, 1981 draft license.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Chairman Hendrie's Additional Views, the Separate Views of Commissioners Gilinsky and Bradford, the Separate Opinion of Commissioner Bradford, and Commissioner Ahearne's Additional Views are attached.

Dated at Washington, D.C.
the 29th day of June, 1981.

CHAIRMAN HENDRIE'S ADDITIONAL VIEWS

I support in full the Commission order authorizing the Director of Nuclear Reactor Regulation to issue a full term, full power license for McGuire Unit 1. I add these comments in order to speak to some of the additional views of Commissioner Gilinsky.

I do not agree with my colleague that the Licensing Board's decision in this case is "seriously defective." I find the Board to have interpreted correctly the proper boundaries of its consideration of the hydrogen question as set forth in the Commission's regulations and in its orders on that question in the Three Mile Island Unit 1 restart proceeding, CLI-80-16, 11 NRC 674 (1980) and Commission Order dated September 26, 1980.

My colleague's complaint, it seems to me, is really with the Commission's standing directions on this matter rather than with the Board's actions and decision. His views here are certainly consistent with his views on the Commission's decisions on hydrogen in the TMI-1 proceeding, but those decisions went against him and stand now as the operative directions to the Board. The basis for those decisions is spelled out in the Commission's orders and in Commissioners' additional views in the TMI-1 case and need not be repeated here.

SEPARATE VIEWS OF COMMISSIONERS GILINSKY AND BRADFORD

We approve full power operation for McGuire Unit 1 in spite of the Licensing Board's seriously defective decision. Since the Board avoided making findings on the risks posed by the generation of hydrogen in the reactor during an accident or on the adequacy of the glow plug igniter system designed to cope with such risks, the Commission reviewed the record, was briefed by the parties, drew its own conclusions, and decided, as it had previously in the Sequoyah case, to make the installation of a hydrogen control system a condition of the operating license. This is the basis for our approval of a full-power operating license for McGuire Unit 1.

The issue of immediate concern is the adequacy of reactor protection against burns or explosions of hydrogen gas which may be generated during an accident. Hydrogen would be generated in the reactor's core if the zircaloy fuel cladding, the thin metal tubing containing the uranium oxide fuel pellets, reached excessively high temperatures. This cladding reacts with steam at high temperatures to form zirconium oxide and hydrogen. If a substantial fraction of the cladding reacts with steam, the resultant concentration of hydrogen in the reactor containment can exceed combustible limits.

Hydrogen Burn at TMI-2

This happened during the Three Mile Island accident. As much as 50 percent of the cladding in the core — some ten tons of metal — is thought by the accident's investigators to have reacted chemically with steam.¹ Part of the several hundred kilograms of hydrogen produced by the reaction found its way out of the reactor's cooling system into the surrounding containment where it was set off, presumably by a spark from electrical equipment, about ten hours after the start of the accident. NRC regulations, promulgated in a more innocent time, required protection against an amount of hydrogen only about one-tenth as large.² This standard was believed to provide a substantial safety margin because the Commission's regulations on emergency core cooling systems contemplated that no more than about one percent of the cladding would react with steam.

¹Three Mile Island, A Report to the Commissioners and to the Public, NRC Special Inquiry Group, Vol. 2, Part 2, January 1980, p. 535.

²Standards for Combustible Gas Control System in Light Water Tested Power Reactors, 43 FR 50163, October 27, 1978 (Hereinafter 10 C.F.R. 50.44).

The hydrogen fire that swept through the TMI-2 reactor containment had two important effects. First, while the fire apparently did not cause vital safety equipment to fail, it charred wiring and melted telephones. This shows that safety equipment inside a containment should be qualified to withstand the effects of burns. Second, and more importantly, the hydrogen burn raised the pressure inside the TMI-2 containment, a large steel-lined reinforced concrete shell with an internal volume of about two million cubic feet, by about 28 pounds per square inch (roughly two atmospheres). Fortunately, TMI-2's large containment has a "design pressure" — the internal pressure the containment is designed to withstand with an ample margin of safety — of about 60 pounds per square inch, well above the 28 psi experienced.

Implications for Smaller Containments

If the same quantity of hydrogen had burned in a smaller containment, however, the internal pressure rise would have been proportionately greater. For example, had the burn taken place in a containment with half the volume of the one at TMI-2, which is roughly the case for an ice condenser containment such as McGuire, the pressure would have been approximately twice as great. Moreover, the design pressure of the ice condenser containments is about one-third of the design pressure of other large pressurized water reactors containments: about 15 psi as compared with the typical PWR containment design pressure of about 50 psi.³

The ability of a containment to resist a hydrogen burn is proportional to PV , the containment design pressure (P) times the containment volume (V). On this basis, the ice condenser containments are about six times less capable of withstanding hydrogen fires than the ordinary large PWR containment.

Origin of Smaller Containments

The smaller cheaper containments were made acceptable for large reactors by the Atomic Energy Commission's retreat, some fifteen years ago, from its regulatory philosophy of "defense-in-depth". Until that time, containments of the smaller reactors were generally expected to maintain their integrity even in the event of a core melt. In the mid-sixties, however, when the first of the near-one thousand megawatt plants were being reviewed, it became evident to the regulators that the large plants' containments would

³There are a total of 10 ice condenser containments that are operating or under construction. In addition there are 19 General Electric Mark III boiling water reactor containments (with design pressures of about 15 psi) under construction.

likely not be able to withstand a core melt. As the power of reactors increased, the amount of "decay heat" in the core grew so large that the containment could no longer be expected to remain intact if all cooling systems failed to work.⁴

This realization came at a time of rapidly increasing utility commitment to nuclear plants. Despite some hesitation on the part of the Advisory Committee on Reactor Safeguards,⁵ the AEC chose not to rethink its commitment to existing designs and decided simply to drop the containment as an *independent* barrier in the scheme of "defense-in-depth". The AEC decided, instead, to concentrate on improving the emergency core cooling systems ("ECCS"), which would then form the last line of defense. Simultaneously, the Commission decided that accidents involving the failure of the emergency core cooling systems would not be considered in the safety review and hearing process. This, in effect, ruled out substantial hydrogen generation and meant that the containment structure had only to be designed to withstand the steam pressure and temperature that would result from a loss of coolant accident. Builders were thus free to house large reactors in smaller and weaker "pressure suppression" containments which used water or ice to condense steam and thus limit pressure increases.⁶

Inerting to Prevent Hydrogen Burn

Even so, hydrogen generation remained a concern for the very small containments such as the General Electric Mark I's. The obvious way to protect against large hydrogen fires or explosions in the reactor containment is to "inert" the containment, that is to keep it filled with inert gas (nitrogen), during reactor operation. Before the TMI accident, the NRC staff required the small General Electric Mark I containments to be inerted on the basis of Safety Guide 7.⁷ All but two of these containments are now inerted.

⁴"Emergency Core Cooling", Report of the Advisory Task Force on Power Reactor Emergency Cooling, U.S. Atomic Energy Commission Report TID-24226, December 4, 1967, p. 6. Particularly interesting is the following comment: "Thus, the containment with respect to its objective and relation to other safeguards should not be viewed as an independent barrier, but it still represents a substantial safeguard system."

⁵An interesting account of this period, with source documents, is presented in: David Okrent "On the History of the Evolution of Light Water Reactor Safety in the United States". Undated report completed in 1979. Mr. Okrent is a member of the ACRS.

⁶For large containments, hydrogen generation was viewed only as a post-accident possibility, resulting from radiolysis and various chemical interactions, but it was thought that it would take about a month to generate a worrisome amount of hydrogen. This allowed plenty of time to hook up small hydrogen "recombiners".

⁷"Control of Combustible Gas Concentrations in Containment Following a Loss of Coolant Accident", U.S. Atomic Energy Commission Safety Guide 7, March 10, 1971.

In 1978, a new rule (10 C.F.R. 50.44) was published, permitting reactor operators to seek an exemption from the inerting requirement if they could demonstrate, on the basis of calculations which assumed that the ECCS would operate essentially as designed, a sufficiently low fuel cladding-steam interaction in the event of an accident. Just before Three Mile Island, General Electric and the utilities owning its reactors were in the process of seeking such an exemption. They were expected to succeed in all but a couple of cases. But after the Three Mile Island accident, and the experience of the hydrogen burn, the NRC staff proposed and the Commission published for comment an interim hydrogen control rule which would require inerting of all GE Mark I and II plants. The question of how to deal with GE Mark III containments and Westinghouse ice condenser containments was left for future rulemaking.⁸

The inerting solution is a relatively easy one in the case of Mark I and II plants; almost twenty plants have operated on this basis for some years. It is more difficult, however, in the case of the ice condenser and Mark III plants because a good deal of vital equipment in these plants is inside the containment, necessitating frequent containment entry during operation. Entry into a nitrogen-filled containment requires special breathing apparatus. This limits the ability of a reactor worker to do his job, especially in the ice condenser plants where access to parts of the crowded containment is difficult. Moreover, frequent entry into inerted containments may risk the lives of plant operators especially where inerting and deinerting takes place often. Finally, it is said that there is a substantial economic penalty for frequently changing the containment atmosphere in ice condenser containments because this will lead to more rapid melting of ice and the need to replenish it more often than would otherwise be economic.

Commission TMI-I Order on Hydrogen Rule

The Commission first confronted hydrogen control after the TMI accident in the TMI-I restart case. The TMI Licensing Board certified two questions to the Commission: (1) Whether the provisions of the hydrogen control rule⁹ (which requires protection against a reaction of, at most, 5 percent of the cladding with steam) should be waived, in view of the generation at TMI-2 of an amount of hydrogen corresponding to an interaction of about 50 percent of the fuel cladding with steam; and (2) whether post-accident hydrogen control should be an issue in the proceeding. At stake was

⁸Domestic Licensing of Production and Utilization Facilities, Interim Requirements Related to Hydrogen Control and Certain Degraded Core Considerations, Proposed Rule, 45 FR 65466, October 2, 1980.

⁹10 C.F.R. 50.44

whether intervenors could litigate the adequacy of the reactor protection against amounts of hydrogen greater than contemplated by the rule.

In spite of the experience at the adjoining reactor, the Commission by a 3 to 2 vote would not waive 10 C.F.R. 50.44.¹⁰ The Commission permitted the broader issue of hydrogen control to be litigated under 10 C.F.R. 100 ("Part 100"), the Commission's siting regulation. The Commission's opinion noted that "Under Part 100, hydrogen control measures beyond those required by 10 C.F.R. 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,"¹¹ that is, in excess of a 25 rem whole body dose. The Commission singled out operator interference with ECCS operation as "the root cause of the hydrogen generation problem at Three Mile Island 2",¹² and stated that the likelihood of such interference in the future would be a critical issue in any litigation of hydrogen control. In September 1980, the Commission, now reduced to four members, denied by a vote of 2 to 2 a motion for reconsideration filed by the Union of Concerned Scientists.¹³

Thus, even after experience has amply demonstrated the inadequacy of the safety regulations on protection against hydrogen burns, further hydrogen control measures are only required if it is demonstrated that a *specific* "credible" accident sequence leads to containment failure and public radiation exposures in excess of those permitted by Part 100. This amounts to saying that there is no need to protect against an accident that cannot be anticipated in detail, even when a closely related accident has already occurred.

Part 100 as a Substitute for 10 C.F.R. 50.44

Curiously, Part 100 itself uses the word "credible" to describe accidents involving substantial meltdown of the core.¹⁴ The rule, which was put out in 1962 as interim guidance for siting in advance of more specific rules on the separate aspects of plant design, requires applicants to assume large releases of fission products in order to test whether certain population dose limits

¹⁰In the Matter of Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), Docket No. 50-289 (Restart), CLI-80-16, 11 NRC 674, May 16, 1980, p. 2. (Commissioners Bradford and Gilinsky dissenting.)

¹¹Ibid, p. 2.

¹²Ibid, p. 4.

¹³In the Matter of Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), Docket No. 50-289, September 26, 1980.

¹⁴Reactor Site Criteria, 27 FR 3509, April 12, 1962.

would be exceeded. The AEC was not aware of the hydrogen generation problem at the time. It seems likely that had the framers of Part 100 been aware that hydrogen inevitably accompanies large releases of fission products they would have specifically included it in the Part 100 accident assumptions. As it is, the only consistent way to apply Part 100 is, in fact, to assume the presence of hydrogen gas along with the Part 100 fission product inventory. There is no need, in applying the test of Part 100, to require a *detailed* accident sequence.

Sequoyah Licensing

The Commission confronted these problems again in the case of the Sequoyah 1 operating license. The staff and the ACRS had not required or recommended any steps to protect the plant's ice condenser containment from hydrogen burn beyond further studies of the problem. However, the Tennessee Valley Authority agreed to install a hydrogen control system based on a method TVA was examining. This involved installation of several dozen controlled ignition points, in practice diesel glow plugs, throughout the containment. In the event of an accident, these would be turned on and would be expected to burn off the hydrogen present at a controlled rate. This could reasonably be expected to moderate pressures within the containment for many types of serious accidents, though a good deal of research still remains to be done to evaluate the concept. In licensing the Sequoyah 1 plant for full power operation, after extensive discussion, the Commission required,¹⁵ as a condition of the license, the installation of such an igniter system, the continuation of the research program, and a Commission review in 1982 of the system to check its adequacy.

McGuire Decision

This brings us to the serious questions in this phase of the McGuire proceeding: whether the McGuire containment can withstand an accident in which substantial quantities of hydrogen are generated and, if it cannot, what remedial measures are necessary. Unfortunately, the Board's decision does not answer these questions.

The best that can be said for this decision is that the Board was forced to work in blinders by the Commission's TMI-1 Order. Still, the Board read its unfortunate mandate in the narrowest possible way and laboriously evaluated the "credibility" of an accident similar to that at TMI-2. The

¹⁵Commissioners Ahearne, Bradford, and Gilinsky in the majority.

Board found that, in view of new instructions to reactor operators and other improvements, an event which actually occurred two years ago was no longer "credible" and that, therefore, there was no need to pursue possible remedial steps. It is a finding that could only have been made by a group schooled in the arcane subtleties of nuclear regulation. No ordinary person is capable of such foolishness. After the TMI experience, this review of the "credibility" of an accident involving hydrogen has been a waste of the parties', the Board's, and the Commission's time. It can only contribute to public cynicism about nuclear regulation and the role of public hearings in the decisionmaking process.

The McGuire experience makes clear that to deal responsibly with the hydrogen control issue, the Commission should overturn the TMI-1 precedent, suspend 10 C.F.R. 50.44, and put in place a new rule on hydrogen protection. The Commission has decided, in both the Sequoyah and McGuire cases, that adequate protection of public health and safety requires the installation of hydrogen control systems in ice condenser containments. To continue to require the parties, including the staff if a licensee should choose to contest the point, to prove the "credibility" of given accident sequences, when the Commission itself requires the installation of hydrogen control systems without such proof, is an exercise in futility. The Boards and the parties should be allowed to focus their attention on the real issues. Beyond that, retaining the optimistic assumption on maximum hydrogen generation in the current rule is indefensible when ten times that amount was apparently generated in the Three Mile Island accident. The Commission should adopt a new rule requiring hydrogen control systems in ice condenser and Mark III containments. It will necessarily be an interim rule since the problems of hydrogen control are not yet fully understood. However, the fact that the problem affects some 30 plants, operating and under construction, means that we cannot continue on an *ad hoc* basis.

SEPARATE OPINION OF COMMISSIONER BRADFORD

I am adding my own brief postscript to the joint statement of the views that I share with Commissioner Gilinsky in order to note disagreement with the views of Chairman Hendrie. The most that the Commission can legally have done in its earlier TMI orders on hydrogen control is to require that the matter be litigated in the context of Part 100. It cannot, in a decision in an individual case, have modified Part 100 itself.

As Part 100 postulates them, accidents of a type that would inevitably generate hydrogen are to be considered credible. Furthermore, the ignition or detonation of a TMI quantity of hydrogen at McGuire might very well have breached that more fragile containment. These two facts alone should have given rise to greater Board concern even under the Commission's May, 1980, TMI order.

The fact is that Part 100 is a duly promulgated and adopted regulation of the Commission, and cannot be modified in an individual adjudication such as TMI-1 or McGuire. Only a rulemaking would suffice for that purpose, and no such rulemaking has been held.¹ Consequently, accidents releasing hydrogen are "credible" by NRC definition as well as historical fact, and they must be considered in light of the ability of individual containments to stand up to them. Contrary to the Chairman's view, it is Part 100 and its "credible" sequences that govern here, not the truncation that the Commission gave it in May, 1980, to say nothing of the gloss that two Commissioners—no longer a majority—sought to put on that truncation in a later denial of a motion for reconsideration.²

¹Indeed, the conclusion of the degraded core rulemaking, of which the Commission made much in clinging to 10 C.F.R. 50.44 on May 16, 1980 (11 NRC 674) is now further away than it was then.

²In commenting on this denial, the Board erroneously ascribed to Commissioner Gilinsky and I the view that the Commission order required "a challenger to lay out a specific accident sequence." This quotation is from our description of the views of the two Commissioners' denying reconsideration on September 29, 1980, not the Commission opinion of May 16. The Hendrie/Ahearne September views are not a Commission opinion and should not be read as one by any Licensing or Appeal Board.

COMMISSIONER AHEARNE'S ADDITIONAL VIEWS

I agree with granting a full power license for the McGuire Station. However, there are several elements of the decision and accompanying views with which I disagree because I believe they represent potentially harmful methods of reaching conclusions.

First, I do not believe it appropriate under the Appendix B review for the Commission to make judgmental comments on the Licensing Board decision, since the Appeal Board has not yet conducted its review nor has the Commission conducted a full review. Therefore, I disagree with the views expressed in the additional views of Commissioner Gilinsky.¹ Second, the adjudicatory approach is a poor process for resolving technical issues. The Commission revision of the igniter procedures, while perhaps correct, magnifies the weaknesses of the adjudicatory process. Third, the Commission should move to publish the interim rule on hydrogen control. We have made it clear that igniters are the acceptable interim solution for ice condenser plants. Although questions remain about the exact evolution of hydrogen at TMI and the efficacy of igniters, the Commission should establish acceptable interim positions for plants in addition to ice condenser plants. Using the limited interaction with staff that is possible in a plant specific adjudication is a poor way to establish such positions.

¹I am expressing my position in part to avoid any implications which might be drawn from silence. See *Atlantic Research Corp.*, ALAB-594, 11 NRC 841, 846 (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

**STATEMENT OF POLICY:
FURTHER COMMISSION
GUIDANCE FOR POWER
REACTOR OPERATING
LICENSES**

November 3, 1980

The Commission (by equally divided vote) denies a requested stay of the Commission's "Statement of Policy: Further Commission Guidance for Power Operating Licenses," published in 45 *Fed. Reg.* 41738 (June 20, 1980).

ORDER*

The Commission being equally divided on a request filed by the Union of Concerned Scientists and Shoreham Opponents Coalition for a stay of the Commission's "Statement of Policy: Further Commission Guidance for Power Operating Licenses," 45 *Fed. Reg.* 41738 (June 20, 1980), the stay request is effectively denied. Separate views follow from Chairman Ahearne and Commissioner Hendrie; Chairman Ahearne; Commissioner Gilinsky; and Commissioner Bradford.

*CLI number was not assigned until July 1981.

It is so ORDERED

For the Commission,

SAMUEL J. CHILK
Secretary of the Commission

**Dated at Washington, D.C.,
this 3d day of November, 1980**

SEPARATE VIEWS OF CHAIRMAN AHEARNE AND COMMISSIONER HENDRIE

Recently the Nuclear Regulatory Commission issued a Statement of Policy entitled "Further Commission Guidance for Power Reactor Operating Licenses." 45 *Fed. Reg.* 41738 (June 20, 1980). In essence, the Statement of Policy announced the intent of the Commission that in future actions on nuclear power reactor operating license applications, it would look to the list of "Requirements for New Operating Licenses" found in NUREG-0694 (June 1980) as setting forth requirements for new operating licenses which should be "necessary and sufficient for responding" to the accident at Three Mile Island ("TMI"). Consequently, current operating license applications were to be judged against present NRC regulations, as supplemented by these TMI-related requirements. Insofar as certain of the provisions of NUREG-0694 seek to impose operating license requirements beyond those necessary to show compliance with the regulations:

although the [licensing and appeal] boards may entertain contentions asserting that the supplementation is unnecessary (in full or in part) and they may entertain contentions that one or more of the supplementary requirements are not being complied with; they may not entertain contentions asserting that additional supplementation is required. *Id.*

The Commission received a request for a stay of the effectiveness of the Statement of Policy from the Union of Concerned Scientists and the Shoreham Opponents Coalition (July 25, 1980). For the reasons stated below, we believe this request should be denied.

The core of the argument for a stay is the contention that movants have a strong likelihood of success on the merits of their challenge to the promulgation of the Statement of Policy. This is because, in their view, the Statement of Policy has improperly cut off the rights of intervenors to raise "contentions arguing that the public health and safety requires more than the items contained in NUREG-0694." This assumption is incorrect.

Under the doctrine set forth in *Maine Yankee Atomic Power Co.* (Maine Yankee Nuclear Power Plant, Unit 2), ALAB-161, 6 AEC 1003 (1973), affirmed 7 AEC 2 (1974), affirmed *sub nom* *Citizens for Safe Power v. NRC*, 524 F.2d 1291 (D.C. Cir. 1975), intervenors have been precluded from raising before the Commission and the Licensing and Appeal Boards the issue of whether, on generic grounds not unique to a particular plant,

something more than compliance with NRC regulations can be a prerequisite to obtaining an operating license.¹ Although 10 C.F.R. § 2.758 provides some flexibility, that rule allows a challenge to existing rules and the imposition of stricter requirements only on a case-by-case basis when there are "special circumstances with respect to the subject matter of the particular proceeding."² The Statement of Policy imposes no further restrictions, not already existing under *Maine Yankee* and rule 2.758, on intervenors' rights to raise issues before Licensing and Appeal Boards, or the Commission. Thus, the Statement of Policy does not cut off any rights which intervenors previously had. In fact, even though *Maine Yankee* suggests that intervenors were not even able to raise contentions before *the Commission itself* concerning the inadequacy of NRC regulations (absent a regulatory "gap"),³ the Statement of Policy opens up the possibility that the *Maine Yankee* ruling might be waived at the Commission level in individual cases.⁴

Although it may not have been clear in the Statement of Policy itself that this avenue is open, recent Congressional testimony by Chairman Ahearne

¹The *Maine Yankee Atomic Power Co.* case did recognize the possibility that where there are no regulations at all that address a particular subject matter, boards might fill this regulatory "gap" by imposing requirements beyond agency regulations. See *Trustees of Columbia University in the City of New York*, ALAB-50, WASH-1218 320 (May 18, 1972). Otherwise, *Maine Yankee Atomic Power Co.* stands for the proposition that compliance with the NRC's regulations is a sufficient basis upon which to grant or license.

²It should be noted that rule 2.758 does not foreclose the Commission itself from initiating the imposition of additional requirements, beyond present agency regulations, prior to granting a license. That rule addresses only the question of the circumstances under which a party to a licensing proceeding may "challenge" a Commission regulation. The Commission's self-initiated additional requirements find ample support elsewhere in the rules. See, e.g., 10 C.F.R. § 50.40(c), 50.50, 50.109(a).

³The movants seek to find support for their view that Licensing Boards must entertain challenges to the adequacy of our rules in the Court of Appeals affirmation of the *Maine Yankee* decision. They point to the court's statement that "in the absence of some indication or showing on a case-by-case basis to the contrary,... it may be found that facilities complying with the NRC rule[s]" may be licensed under the Atomic Energy Act. Significantly, the court did not indicate that the case-by-case showing was required by statute to be raised initially at the licensing board level. Moreover, this statement was made in the context of the "gap" argument, so that the court's reference to the possibility of "some indication or showing on a case-by-case basis" should be read as leaving to intervenors the right to show a regulatory "gap," or perhaps a particular plant-specific problem pursuant to 10 C.F.R. § 2.758, and not the right to show some general inadequacy with Commission rules.

⁴Testifying before the Subcommittee on Environment, Energy and Natural Resources of the House Committee on Government Operations (July 2, 1980), Chairman Ahearne stated that the Statement of Policy dealt only with the Licensing and Appeal Boards (Tr. at 22).

confirms this interpretation.⁵ Whether this approach would be pursued on an interlocutory basis or only after an initial decision will, like application of the rest of the Statement of Policy, have to await developments in a particular case.⁶

Finally, we do not believe that movants have demonstrated that the Statement of Policy is likely to be viewed as having, as they allege, "the same effect as that of a rule or regulation." The Statement of Policy is only an "announce[ment of] what the agency seeks to establish as policy. A policy statement announces the agency's tentative intentions for the future." *Pacific Gas & Electric Co. v. FPC*, 506 F.2d 33, 38 (D.C. Cir. 1974). The Commission has changed nothing by the Statement of Policy itself, for it is a "pronouncement [which] acts prospectively" *American Bus Ass'n. v. U.S.*, 627 F.2d 525 at 529 (D.C. Cir. 1980). The Statement of Policy genuinely leaves the agency free to exercise discretion. *Regular Common Carrier Conference v. U.S.*, 628 F.2d 248 (D.C. Cir. June 30, 1980). The only aspect of the Statement of Policy which could be considered by some as a "binding norm" that would adversely affect intervenors, *Pacific Gas & Electric Co.*, *supra*, 506 F.2d at 39, is the statement that the boards "may not entertain" certain contentions which would result in imposing on licensees requirements beyond those contained in the NRC regulations and NUREG-0694. However, as we have stated, this already exists as a matter of case law in *Maine Yankee*, and under rule 2.758, and the Statement of Policy merely announced the non-startling conclusion that the Commission would not expect boards to veer from precedent or regulation in this regard.⁷ In any event, the Commission has called the Statement of Policy "guidance" for the boards. 45 *Fed. Reg.* at 41739, 41740.

⁵At the July 2 hearing, Chairman Ahearne also stated:

In the future should any question be raised before the Commission itself under Appendix B regarding the validity of any part of the policy statement as applied to a particular case, the Commission recognizes its obligation to consider the question and reply on the merits based on the state of the record before it.

Thus, to the extent that intervenors present sound reasons for the Commission to address the merits of their contentions and thereby to waive the *Maine Yankee* ruling, the Commission should consider all relevant matters — e.g., the pleadings before it, NUREG 0694, etc. — in determining whether the contention should be litigated.

⁶This avenue is in addition to the right that parties have always had and continue to have to raise issues on an interlocutory basis under 10 C.F.R. § 2.758 when a particular case involves "special circumstances."

⁷Theoretically, parties have been free to ask that boards refuse to follow *Maine Yankee* and instead entertain contentions that challenge the adequacy of NRC regulations. The "guidance" offered in the Statement of Policy would eliminate this possibility, if boards followed that guidance. However, it is clear that this theoretical possibility has always been only that, and that in practice boards could not be expected to ignore or overturn the precedent which limits their options. Thus, the Statement of Policy cannot be said to have made any real change in

(CONTINUED)

Although the movants' failure to show likelihood of success on the merits is an adequate ground to deny a stay, it is also useful to address their contention that they will suffer irreparable harm absent a stay. In light of the fact that the Statement of Policy itself effects no change, finally determines no rights or duties and promulgates no new binding precedent, there is nothing to stay. Any harm which might occur could occur only within the context of a particular adjudication when, and if, the Statement of Policy is applied, but see footnote 5, *supra*, although we hasten to reiterate that the Statement of Policy gives intervenors more, not fewer, opportunities to litigate contentions. Even if intervenors are harmed by the Statement of Policy, however, we do not think that the failure to accept contentions at the licensing board level can be considered as subjecting the movants to irreparable harm. *See, e.g., Sampson v. Murray*, 415 U.S. 61, 90 (1974). *Cf. Ecology Action v. U.S.A.E.C.*, 492 F.2d 998 (2d Cir. 1974); *Northern States Power Co. (Tyrone Energy Park, Unit 1)*, ALAB-492, 8 NRC 251 (1978).⁸

Commission policy or practice in this regard. Even if this fictional change is considered relevant and to be binding — and not mere guidance — it is a change in agency practice or procedure which is exempt from notice-and-comment rulemaking. 5 U.S.C. § 553(b)(3)(A).

⁸We have also considered movants' arguments that granting of the stay is more likely to result in fewer delays and consequently less harm to the Commission and to licensees than if the Commission denied the stay and that the public interest would be best served by granting of the stay. We find these arguments lacking factual support and otherwise unpersuasive.

ADDITIONAL SEPARATE VIEWS OF CHAIRMAN AHEARNE

I continue to support the approach outlined in the policy statement—not because I believe it is the best approach that could be devised, but because it is the best of the options I found available to me given the interaction among the Commissioners and advice from the General Counsel.

As Commissioner Bradford pointed out in a recent speech^{*} there is “a fundamental disarray in the NRC’s regulatory processes.” I agree there is a disarray and with his conclusion that:

“The disarray that I refer to has to do with a lack of synchronization among the NRC’s legal requirements, its technical review processes, its inspection and enforcement efforts, and what is really going on in the nuclear power plants in operation and under construction around the country.

“For nuclear regulation to be effective, these four areas must be closely linked, with each one having an understanding of the needs of the other and a quick and efficient method of appraising the significance of events in the other three spheres.”

In attempting to deal with the Three Mile Island accident, the Commission went through an extensive evaluation of the consequences of the accident for licensing in general. The product and the process were far from perfect, but they were entitled to be given some weight. It made no sense for a board in an adjudicatory proceeding to start from a blank slate and ignore the effort which was reflected in the Action Plan and the resulting Commission decisions. As we said in the Policy statement:^{**}

“There are several reasons for this. First, this represents a major effort by the staff and Commissioners to address an almost overwhelming number of issues in a coherent and coordinated fashion. It is extremely doubtful this process can be reproduced in individual proceedings.

Second, the NRC does not have the resources to litigate the entire Action Plan in each proceeding, nor does it believe it would be a responsible decision to do so. Third, many of the decisions involve policy rather than factual or legal decisions. Most of these are more

^{*}“Reasonable Assurance, Regulation, and Reality,” address by Commissioner Peter A. Bradford before the ALI-ABA Course of Study on Atomic Energy Licensing and Regulation (September 24, 1980).

^{**}“Further Commission Guidance for Power Reactor Operating Licenses; Statement of Policy,” 45 Fed Reg 41738, 41740 (June 20, 1980).

appropriately addressed by the Commission itself on a generic basis than by an individual licensing board in a particular case.”

Based on these considerations I proposed the following approach:

“Consequently, in determining whether the health and safety of the public would be adequately protected, the Boards are to consider whether a license application complies with the regulation as supplemented by the operating license requirements.¹² If a party to a proceeding alleges that a longer term item or any other item must be implemented in a given case to assure safety in light of TMI accident considerations, a Board may give consideration to such items if it finds that a party is able to show cause why the issue should be litigated. The Commission intends that this require a party to identify why its position raises a significant issue and how its position might alter the results reached in the Action Plan in some material respect.¹³”

¹² Cf. *Maine Yankee Atomic Power Company* (Maine Yankee), CLI-74-2, 7 AEC 2, 4 (1974) (the Atomic Energy Act does not require consideration of residual risk after Commission requirements are met).

¹³ Cf. *Wolf Creek*, 7 NRC 320, 338 (1978) (analogous standard).”

Under this approach contentions based on the Three Mile Island accident would be litigable regardless of their relation to existing regulations. However, there would be a substantial threshold which must be met* because of the Commission's effort in developing the Action Plan. I was willing to allow discussion of the decisions we had reached, but only if a party could show it had something serious to discuss. Unfortunately the General Counsel advised that this approach was illegal.

Given that I was unable to adopt my preferred approach, I agreed to the approach outlined in the policy statement because it accommodated my concerns better than the other options which were available.

I believe this is a very good example of the problem identified by Commissioner Bradford. It is unfortunate that we were not able to better link the adjudicatory proceedings to other efforts in the agency.

*Compare *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).

SEPARATE VIEWS OF COMMISSIONER GILINSKY

For the same reasons that I disapproved of the Policy Statement (see below), I would grant a stay of that portion of the Policy Statement which limits the ability of the parties to challenge the sufficiency of the new requirements.

**COMMISSIONER GILINSKY'S SEPARATE VIEWS REGARDING
THE COMMISSION'S POLICY STATEMENT — COMMISSION
GUIDANCE FOR POWER REACTOR OPERATING LICENSES**

I regard the Action Plan as a directive to the staff from the Commission acting in its supervisory capacity and expect that it will be given appropriate deference by the adjudicatory boards. However, in view of the fact that the Action Plan and the NTOL list are not regulations, and are not the result of a public proceeding, they cannot be given the weight of rules. Nor does the fact that the Commission spent a great deal of time developing the Action Plan change the situation. There were many items to deal with and the Commission did not spend much time on each of them and very little on some. Moreover, as Commissioner Bradford has pointed out, the industry has had extensive opportunities to comment on the Action Plan and to obtain changes, which in almost all cases have resulted in a reduction of the requirements initially proposed by the staff. To now limit litigation to the issues of whether these requirements have been satisfied or are excessive, and to exclude discussion of whether they go far enough, is a manifestly unfair and unwise policy.

SEPARATE VIEWS OF COMMISSIONER BRADFORD

I would grant the stay requested by UCS and use the time to reshape this unfortunate document into something legal and sensible. The Commission has, by its subsequent "clarifications" conceded the illegality of the Policy Statement as written.¹ In its place, it has created a procedural maze for the

¹The illegality and unwisdom of the June 16 Policy Statement are discussed in my original dissent. Some problems with the modifications introduced in subsequent Commission correspondence and testimony are set forth in my July 2, 1980 testimony before the House Subcommittee on Environment, Energy and Natural Resources, Committee on Government Operations. The relevant portions of that testimony are as follows:

"In its testimony before this Committee and in recent letters sent out explaining the Policy Statement, the Commission has, for the first time, stated that 'should any question be raised before the Commission itself ... regarding the validity of any part of the policy statement as applied to a particular case, the Commission recognizes its obligation to consider the question and reply on the merits based on the state of the record before it.' However, as to any such contention, the state of the record before the Commission will be barren indeed. The Commission has assured this by having the policy statement require the exclusion of the contention itself and all testimony, discovery and cross-examination that would have supported it...

"While the clarified form is not quite so offensive as the original policy statement, it is a terribly cumbersome and confusing way of dealing with issues of this sort. It would have been far better to have left this set of issues subject to litigation before licensing boards applying normal rules of evidence as to relevance and materiality. However, if the new policy is to be adhered to, it should provide for the Commission to review issues referred to it on an interlocutory basis.

"In the policy statement itself the Commission seeks to conceal the nature of its action behind an assertion that it 'does not in any way diminish intervenors' present rights.' That is not entirely true, but, it is entirely beside the point. After Three Mile Island, the Kemeny Report, and other studies the Commission could not imaginably have continued to license on the basis of its pre-TMI regulations alone. It would have been jeered out of every legislative or judicial forum that it appeared before. Hence, its benign assertion that its policy statement is 'in the direction of permitting parties to raise more issues, not fewer' suggests nothing so much as the shopworn political adage that 'When you've got an angry mob after you, the thing to do is to walk a little faster and pretend you're leading a parade.'

"The Commission is not expanding the rights of parties to raise questions. The accident at Three Mile Island did that

"The fundamental mistake being made by the Commission in this and other recent cases (notably the curtailment of the hearing offered in the NFS-Erwin matter and the Commission decisions in the Marble Hill and Point Beach cases as well as the Commission's effort to divest itself of export licensing responsibilities) is that all of these actions tend in the direction of reducing the general public's ability effectively to scrutinize matters of considerable concern to it

"I'm under no illusions as to the ability of under-funded intervenors to contribute extensively to the resolution of complex technical issues. Nor do I doubt that on a few occasions hearing rights will be abused by those seeking the delay of the licensing of a nuclear power plant,
(CONTINUED)

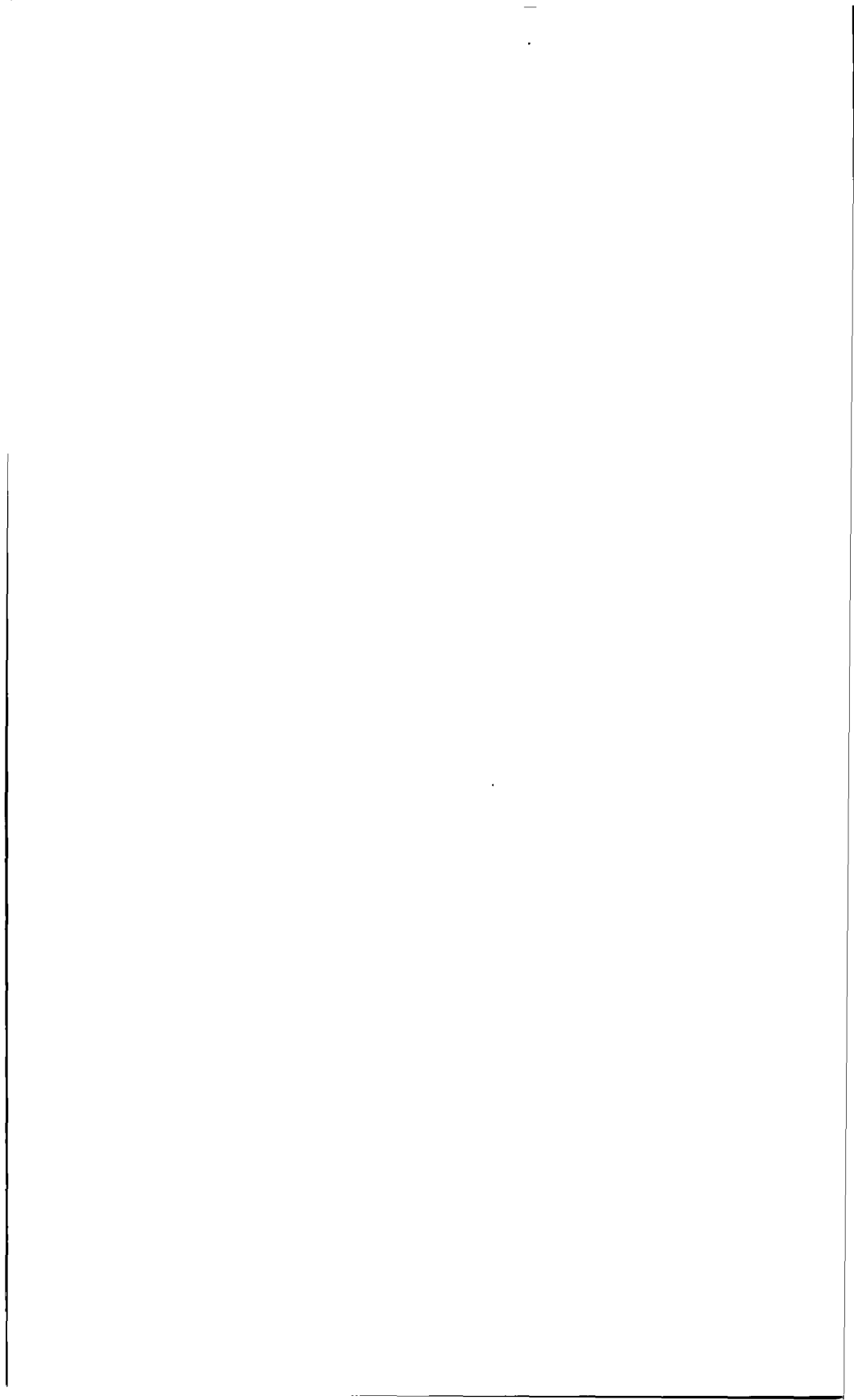
Boards, the parties, and ultimately the NRC.²

The best remedy would be to repeal the June 16 document and provide standards for consideration of issues going beyond our regulations by the Boards. The next best remedy would be to allow for interlocutory treatment of these questions by the Commission.

It is worth noting that the Commission has recently completed a set of significant modifications of many of the requirements that it proclaimed "necessary and sufficient" on June 16. These modifications are now out for public comment and could conceivably be modified again. They are clearly not graven in stone, and we should stop treating them as if they were.

especially if the Commission continues to arouse the public through the kind of treatment it has meted out in the last few months. However, balanced against allegations of intervenor ineptitude or delay must be a realization that it would only take one group in one proceeding to raise an issue in a manner that prevented a Browns Ferry or Three Mile Island-type of accident to repay all of the cost of delay in all proceedings many times over. Furthermore, the costs to nuclear power that stem from our agency showing that it either fears or is impatient with serious questioning from concerned citizens or from intervenor groups is something far beyond the cost of the minimal delay that would be likely to occur in tightly run hearings. The public's right to be heard effectively on these questions is not to be treated as mere window dressing, dreamed up by one set of lawyers to be undone by the next. It is fundamental to acceptable and sensible governmental decisions. That is why the recent trend in Commission decisions, culminating in the policy statement and the Erwin matter, is so important and so wrong."

²I have some sympathy with Chairman Ahearn's desire to erect a "threshold" of some sort to the litigation of items in the Action Plan. However, such a threshold would exist if the Commission merely sanctioned the Action Plan as the determinant of the staff position. As I pointed out in my original dissent, "as a practical matter, this would have made it a document of considerable influence. In uncontested cases, it would clearly have governed. Intervenors in contested cases would have been taking on a very heavy burden in trying to go against a staff position and convince the Commission to change its mind on a document that it had already approved."



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Christine N. Kohl

In the Matter of

Docket Nos. 50-369
50-370

DUKE POWER COMPANY
(William B. McGuire
Nuclear Station, Units 1 and 2)

July 1, 1981

The Appeal Board denies a motion requesting a stay *pendente lite* of the Licensing Board's initial (LBP-79-13, 9 NRC 489) and supplemental initial (LBP-81-13, 13 NRC 652) decisions authorizing the Director of Nuclear Reactor Regulation to issue full-term operating licenses for Units 1 and 2 of the McGuire facility upon the Director's making the findings required by 10 C.F.R. 50.57(a) on those matters not considered in the adjudicatory proceeding.

OPERATING LICENSE PROCEEDING: REVIEW OF DECISION

Under new subsection (f)(2) of 10 C.F.R. 2.764, upon its receipt of a licensing board decision authorizing the issuance of an operating license, the Commission will undertake to determine on its own initiative whether to stay the effectiveness of the decision. That determination is to be based on a consideration of the gravity of the substantive issue, the likelihood that it has been resolved incorrectly below, the degree to which correct resolution of the issue would be prejudiced by operation pending review, and other relevant public interest factors. Such Commission review is without prejudice to Appeal Board or other Commission decisions, including decisions on stay requests filed under 10 C.F.R. 2.788.

RULES OF PRACTICE: STAY REQUESTS

Requests for stays of Licensing Board decisions will be judged by a balancing of the four factors specified in 10 C.F.R. 2.788(e).

APPEARANCES

Mr. Jesse L. Riley, Charlotte, North Carolina, for the intervenor, Carolina Environmental Study Group.

Messrs. J. Michael McGarry, III, Washington, D.C., and William L. Porter, Charlotte, North Carolina, for the applicant, Duke Power Company.

MEMORANDUM AND ORDER

1. In April 1979, the Licensing Board rendered an initial decision in this operating license proceeding involving Units 1 and 2 of the McGuire facility. LBP-79-13, 9 NRC 489. All matters which had been placed in controversy were determined in the applicant's favor. The Board, however, stayed the effectiveness of the decision pending its further order after the NRC staff's issuance of a supplement to the Safety Evaluation Report on the significance of any unresolved generic safety issues. *Id.* at 547-48.¹

That supplement was issued in May 1980. Shortly thereafter, on June 9, 1980, intervenor Carolina Environmental Study Group (CESG) filed a motion seeking, by reason of the March 1979 accident at Three Mile Island, the reopening of the evidentiary record and the admission to the proceeding of certain new contentions concerned with hydrogen generation and control. On November 25, 1980, the motion was granted and four additional CESG contentions were accepted for litigation. In essence, those contentions addressed the possibility that, in the event of a loss-of-coolant accident at McGuire, substantial quantities of hydrogen would be generated within the reactor containment which, in turn, might combust and bring about a rupture of the containment and the release of radioactive materials. As the Board saw it, "CESG's proposed contentions related to the matter of hydrogen-generation control arising out of the Three Mile Island 2 (TMI-2) accident may well shed significant light upon key safety findings which are

¹On June 21, 1979, the Appeal Panel Chairman entered an unpublished order which provided that the time for the filing of exceptions to the decision would not commence to run until the Licensing Board's further order was issued.

required to be made before operation of McGuire Units 1 and 2 could be authorized".²

In the wake of fifteen days of evidentiary hearings conducted during the early part of this year, the Licensing Board on May 26 rendered a supplemental initial decision on the hydrogen generation and control issues. LBP-81-13, 13 NRC 652. On the basis of the numerous findings contained in that decision, the Licensing Board concluded that reasonable assurance existed that, "in the event of a TMI-type accident at McGuire, substantial quantities of hydrogen (in excess of the design basis of 10 C.F.R. § 50.44) will not be generated". *Id.* at 674. The Board went on to lift the stay of its 1979 initial decision. It thereby paved the way for the Director of Nuclear Reactor Regulation to issue full-term operating licenses for the McGuire units³ once the Director had made the findings required by 10 C.F.R. 50.57(a) on those matters not considered in the adjudicatory proceeding. *Id.* at 675.

2. The Commission recently repealed Appendix B to 10 C.F.R. Part 2, under which licensing board decisions such as those involved here were not to become effective pending certain action by both an appeal board and the Commission itself. 46 *Fed. Reg.* 28627 (May 28, 1981). Appendix B was simultaneously replaced by amendments to 10 C.F.R. 2.764, the Rule of Practice concerned with immediate effectiveness of initial decisions.⁴ New subsection (f) (2) of that Rule provides that, upon its receipt of a licensing board decision authorizing issuance of an operating license, the Commission will undertake to determine on its own initiative whether to stay the effectiveness of the decision. This determination is to be based "on a consideration of the gravity of the substantive issue, the likelihood that it has been resolved incorrectly below, the degree to which correct resolution of the issue would be prejudiced by operation pending review, and other relevant public interest factors". In the case of a full-power operating license, the anticipation is that the determination will be made within thirty days.⁵ Until the Commission speaks, the licensing board's decision is to be considered automatically stayed. See 46 *Fed. Reg.* 28627, 28628, 28630.

²November 25, 1980 Memorandum and Order Regarding CESG's Motion to Reopen Record, at p. 4.

³On November 25, 1980, the Licensing Board had entered an unpublished order authorizing the issuance of a license for Unit 1 which would permit fuel loading, initial criticality and zero power physics testing. See ALAB-626, 13 NRC 17 (1981).

⁴Appendix B, promulgated in November 1979, had suspended the operation of Section 2.764 insofar as construction permits and operating licenses were involved. At that time, the Section provided, *inter alia*, that an initial decision authorizing the issuance of an operating license was to be effective immediately upon rendition unless affirmatively stayed for good cause.

⁵With respect to fuel loading and low-power testing licenses, the Commission proposes to act within ten days.

Section 2.764(f)(2) further stipulates that this Commission review *sua sponte* "is without prejudice to Appeal Board or other Commission decisions, including decisions on stay requests filed under 10 C.F.R. 2.788". 46 *Fed. Reg.* at 28630. By virtue of Section 2.788(a), an application for a stay of the effectiveness of a licensing board decision may be filed within 10 days of the service of that decision. In passing upon the application, we are to consider four factors:

- (1) Whether the moving party has made a strong showing that it is likely to prevail on the merits;
- (2) Whether the party will be irreparably injured unless a stay is granted;
- (3) Whether the granting of a stay would harm other parties; and
- (4) Where the public interest lies.

Section 2.788(e).⁶

3. Within the time prescribed by Section 2.788, CESG moved for a stay of the effectiveness of the initial and supplemental initial decisions pending the disposition of the exceptions which it has filed to those decisions under 10 C.F.R. 2.762(a).⁷ The applicant opposes the motion. For its part, the staff has elected not to file a response.⁸

⁶These same factors have long governed the grant or denial of judicial stays. See *Virginia Petroleum Jobbers Ass'n. v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958). As is readily apparent, they do not coincide with the considerations which the Commission is to take into account in making its Section 2.764 determination. This at least partially explains the fact that, despite its subordinate status, an appeal board has been empowered to grant a Section 2.788 stay without regard to what the Commission has done (or might do) under Section 2.764.

⁷The stay motion was filed and served on June 6; the exceptions were filed and served two days later.

⁸Insofar as we are aware, this is the first occasion upon which the staff has made such an election in connection with a stay request. At the very least, a staff response customarily has been filed to a request by another party for certain relief. This is not to say, or course, that the staff has defaulted on an obligation imposed upon it by the Rules of Practice or otherwise. An adjudicatory board may well have the inherent authority to direct a party to a proceeding before it to file a responsive pleading setting forth its views on the matter at hand. Absent such a direction, however, the decision whether to respond is for the party to make.

In this instance, we will respect the staff's choice and determine the stay question on the basis of the papers filed by CESG and the applicant. Our willingness to do so rests in large measure on the assumption that, although not affirmatively urging that the initial decisions be allowed to become effective in advance of appellate review, at the same time the staff does not believe that reactor operation would pose a threat to the public health and safety for the reasons assigned by CESG. Manifestly, had it reached a different conclusion, it would have become duty-bound in the fulfillment of its regulatory responsibilities so to inform us.

Although not so required, we decided to hold the stay motion in abeyance to await Commission action under Section 2.764(f)(2).⁹ That action has just been taken in part. In an order entered on June 29, the Commission unanimously approved the issuance of a full-power operating license for Unit 1 alone. The order indicated (at p. 2) that "[t]his effectiveness decision is without prejudice to Commission effectiveness review for Unit 2". Presumably, completion of that review has been deferred in light of the fact that, unlike Unit 1, Unit 2 is not as yet fully constructed.¹⁰

The stay motion is addressed to the entire Licensing Board supplemental initial decision — and not simply to the authorization therein of a full-power operating license for Unit 1. Moreover, none of the parties has suggested that, in passing upon the motion, we attach some significance to the different current stages of construction of the two units. Nevertheless, in deciding whether a stay is warranted, we can likewise confine our attention to Unit 1. This is because, as a matter of certainty, the pending CESG appeal will be decided on the merits well before Unit 2 might be ready for full-power operation more than a year hence. In that circumstance, a *pendente lite* stay of the effectiveness of the supplemental decision is manifestly unnecessary insofar as Unit 2 is concerned.

4. There is no occasion to dwell at length here upon the foundation for the Licensing Board's conclusion respecting the likelihood that the generation of hydrogen in excess of permissible limits would result from a Three Mile Island-type accident at McGuire. For one thing, the several considerations which led the Board to that conclusion are adequately spelled out in the supplemental initial decision. 13 NRC at 660-673. For another, at least for the purposes of its stay motion, CESG does not appear to challenge the conclusion. Rather, as we read its papers, the claim that full-power operating licenses should now be withheld principally upon two quite different assertions: (1) even if reasonable assurance exists that

⁹As will be seen, the stay motion is directed to the hydrogen generation and control issues resolved in the May 26 supplemental decision. Those issues relate exclusively to full-power operation. By June 11, 1981 order, the Commission permitted the issuance of a license allowing operation of Unit 1 at steady state reactor core power levels up to 5% of rated power. But no matter when full-power operation might have been authorized by the Commission, several additional weeks necessarily would then elapse before that unit might actually be placed in service. Thus, an immediate ruling on the stay motion before us was not mandated.

In a different set of circumstances, we might well conclude that ample reason existed to act more expeditiously on a Section 2.788 stay motion presented to us — *i.e.*, prior to the outcome of the Commission's Section 2.764(f)(2) review.

¹⁰It appears from a recent NRC construction status report (NUREG-0030, Vol. 4, April 1981, at p. 1-4) that Unit 2 was approximately 75% constructed at the end of 1980 and will not be ready for fuel loading for another year.

excessive quantities of hydrogen will not be generated, the Licensing Board nonetheless was obliged to explore and determine the consequences of a containment rupture brought about by hydrogen combustion; and (2) the Board erred in confining its scrutiny to loss-of-coolant accidents of the TMI type.

These assertions will receive full examination in our determination of CESH's pending appeal from the supplemental initial decision. Without prejudging the outcome of that examination, we think that insufficient justification has been assigned in CESH's stay papers for precluding Unit 1 operation in the meantime.

The relevant condition precedent to such operation is a finding of "reasonable assurance (i) that the activities authorized by the operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with [Commission] regulations". 10 C.F.R. 50.57(a)(3). With regard to hydrogen generation and control, that finding has been made and CESH's motion does not contain the required demonstration that it likely will be set aside on the appeal.

Although the Board's ultimate finding was cast in terms of a "TMI-type accident", as previously noted CESH's hydrogen contentions were both tendered and accepted for litigation in the context of such an accident. In any event, CESH's motion does not describe the other accidents which it believes should have also been considered, let alone explain why they might produce a greater hydrogen control problem than would result from a loss-of-coolant accident of the TMI variety.

In these circumstances, CESH has fallen far short of meeting its obligation to make a *strong* showing that it is likely to prevail on the merits of the hydrogen generation and control issues. Nor has it made the required demonstration on the irreparable injury factor.¹¹ On the other hand, the applicant insists that both it and its customers will sustain significant injury if a Unit 1 operating license is withheld to await a decision on the pending appeal. We are specifically referred to the June 5, 1981 comments which the applicant submitted to the Commission in connection with the Section 2.764(f)(2) *sua sponte* review.¹² In a March 23, 1981 affidavit appended to the comments (at p. 3), the applicant's Senior Vice President for Production and Transmission averred that, absent the availability of Unit 1 power, the utility's reserve margin at the point of peak summer demand will be

¹¹Indeed, in CESH's only reference to irreparable harm (at p. 5), it states that there is simply the "potential" for such harm.

¹²That Section expressly authorizes the submission of such comments within 10 days of the Licensing Board's decision. Both the applicant and CESH availed themselves of that opportunity.

reduced to 3.07% (without taking into account "possible extreme weather or possible forced outages of large units"). Also appended to the comments was a March 20, 1981 letter from the Chairman of the North Carolina Utilities Commission to the Chairman of this Commission which confirmed the inadequacy of the applicant's reserves and represented that, unless Unit 1 were available "during the coming peak season", there would be a greater likelihood of operating difficulties and a certain increase in operating costs.¹³

To be sure, considerations of this nature perforce must be subordinated to any serious safety concern. But they are entitled to substantial weight where, as here, the Licensing Board's findings negating the existence of reason for such concern (at least with regard to hydrogen generation and control) both are founded upon the product of a thorough evidentiary exploration and have gone essentially unchallenged.

The motion for a stay *pendente lite* of the Licensing Board's initial and supplemental initial decisions is *denied*. This Board will, however, calendar the CESC appeal for oral argument at as early a date as possible following the completion of briefing.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the Appeal Board

¹³These averments by responsible officials are not adequately countered by CESC's unsupported assertion (motion, p. 6) that, at the time of "probable summer peak demand", the applicant "may be expected to have a nominal reserve of 1000 to 1500 MW".

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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

In the Matter of

Docket No. 50-376

**PUERTO RICO ELECTRIC
POWER AUTHORITY
(North Coast Nuclear Plant, Unit 1)**

July 2, 1981

The Appeal Board denies intervenors' motion to supplement the record.

APPEAL BOARD: SCOPE OF REVIEW

An appeal board ordinarily will not entertain an issue raised for the first time on appeal; its disinclination to do so will be particularly strong in circumstances where the issue and the factual averments underlying it could have been, but were not, timely put before the licensing board.

APPEAL BOARD: SCOPE OF REVIEW

It is unfair for a party to seek relief from a trial tribunal on one theory and, if unsuccessful, then to mount an appeal on a discrete theory founded on additional asserted facts which, although available at the time, had not been given to that tribunal; requests to supplement the record will not be entertained by an appeal board in aid of such an appeal.

APPEARANCES

Mr. Gonzalo Fernos, Santurce, Puerto Rico, *pro se* and on behalf of the intervenor Citizens for the Conservation of Natural Resources, Inc.

Ms. Kathleen H. Shea, Washington, D.C., for the applicant, Puerto Rico Electric Power Authority.

Mr. Henry J. McGurren for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

1. This is a construction proceeding involving the proposed North Coast nuclear facility in Puerto Rico. Last August, acting on our own initiative, we directed the Licensing Board to consider and decide whether, as intervenors Gonzalo Fernos, *et al.*, claimed, the applicant had abandoned any intention to build the facility. ALAB-605, 12 NRC 153.

Precisely a month later, on September 11, 1980, the applicant formally withdrew the construction permit application and simultaneously moved to terminate the proceeding. On September 18, the intervenors filed with the Commission a "Motion for Direct[ed] Certification to Request Application be Dismissed with Prejudice." On October 17, the Commission entered an order transferring the motion to the Licensing Board for decision.

In a December 3, 1980 submission to the Licensing Board, the intervenors asserted, as a basis for its claim that the termination should be "with prejudice", that, *inter alia*, the applicant had deceitfully failed to disclose certain material facts to the Commission during the processing of its application. Following the receipt of responses to this assertion, the Board entered an unpublished order on February 18, 1981 in which it granted the applicant's motion and terminated the proceeding *without* prejudice. On March 26, intervenors' petition for reconsideration was denied.

On April 6, 1981, the intervenors moved before us for a temporary stay of the Licensing Board's February 18 and March 26 orders, as well as for an extension until May 15, 1981 of the time in which to take an appeal from those orders. On April 10, we granted the requested extension and implicitly denied a stay.

On May 12, 1981, the intervenors noted their appeal and asked that the time for the filing of their supporting brief be tolled pending the outcome of a governmental investigation of applicant's operations said to be now under way in Puerto Rico. In an unpublished order entered on June 1, we denied the request but extended intervenors' briefing time to July 3. On June 11, in response to a petition for reconsideration, we once again declined to toll the running of the briefing period. In view, however, of Mr. Fernos' representation that he would be absent from his residence in Puerto Rico from mid-June to mid-July, we set a new deadline of July 31, 1981 for the filing of

intervenors' brief — with the notation that we would expect it to be filed by that date.

Both our June 1 and June 11 orders explained that the consideration and determination of the pending appeal had to be founded on the Licensing Board record and thus could not be affected by any disclosures during the course of the governmental investigation alluded to by the intervenors. In this connection, the June 11 order pointed out (at pp. 2-3) that:

[I]t does *not* follow, as intervenors appear to believe, that those disclosures perforce would have no influence upon the outcome of any new construction permit application which this utility might file at some future time. To the contrary, should such an application be filed, it will be open to any interested person — including the present intervenors — to bring to the attention of the NRC staff or the Licensing Board any information (whether derived from the investigation in question or otherwise) which might bear adversely upon the entitlement of the applicant to receive a permit to construct a nuclear power plant.

In short, there is no reason to depart from the ruling in our June 1 order — which rested upon the settled principle that the decisions and orders of a trial-level tribunal are to be judged on appeal in the light of the record on which that tribunal acted. Although NRC appeal boards possess the inherent authority to reopen a licensing board record where there is compelling cause to do so, here such cause is manifestly lacking. As just seen, whether the present proceeding is terminated “with” or “without” prejudice, no permit will later issue to this applicant for the construction of a nuclear power facility without prior full consideration to all relevant developments — no matter when they might have come to light.¹

2. Against this background, we are now called upon to consider a June 13, 1981 motion of the intervenors which seeks to supplement the record with eight affidavits executed by landowners in the vicinity of the North Coast site. We need not rehearse the content of these affidavits in detail. Suffice it to note that the affiants raise the spectre of a second attempt by

¹In an accompanying footnote, we noted that:

It goes without saying that under existing law any new construction permit application would be subject to a mandatory hearing before the Licensing Board. Section 189a. of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2239(a).

the applicant to expropriate their land against their will² for the purpose of building a nuclear plant on it. Several of them assert that they have lived on their property for a long time and that another expropriation effort "would jeopardize me and would compel me to abandon the community * * *". In addition, two of the affiants maintain that either uncompensated pecuniary damage or the death of a relative resulted from the actions of the applicant associated with its prior expropriation endeavor.³ According to the intervenors, the averments collectively constitute evidence "of the sort of damage to [the] public interest which would be caused and would remain latent if Applicant's application dismissal without prejudice were to be sustained [on] appeal". Motion, p. 1.

It should be noted immediately that, by their motion, the intervenors are trying to inject an essentially new issue in the proceeding on the appellate level. As both the applicant and the NRC staff stress in opposing a reopening of the record to receive the affidavits, a dismissal of the proceeding "with prejudice" was sought from the Licensing Board on quite different grounds. As previously noted, the focus of the intervenors' December 3, 1980 submission to the Licensing Board was the alleged deceitful withholding by the applicant of information. More specifically, according to what intervenors then told that Board (at pp. 4-5), the applicant had concealed for a four year period between December 1975 and December 1979 the fact that it had decided to terminate the expropriation process and to return the expropriated land to its original owners. See fn. 3, *supra*. Neither in the December 1980 submission nor (insofar as we are aware) in any other filing below did the intervenors additionally assert possible injury to the landowners as a consequence of the threat of a future expropriation for a nuclear power facility.

We "ordinarily will not entertain an issue raised for the first time on appeal". *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-463, 7 NRC 341, 348 (1978) and cases there cited. And our disclination to do so is particularly strong in circumstances where the issue and the factual averments underlying it could have been — but were not — timely put before the Licensing Board. It scarcely is fair for a party to seek relief from a trial tribunal on one theory and, if unsuccessful, then to mount an appeal on a discrete theory founded on additional

²"Expropriation" apparently is the term employed in Puerto Rico for the exercise of eminent domain powers and, as such, is synonymous with "condemnation".

³As we understand it, that endeavor ended in 1976 when the applicant decided to postpone the North Coast facility "indefinitely". Based upon that decision, the applicant elected not to proceed further with the expropriation process it had previously instituted and to offer to return expropriated lands to previous owners. This enabled the applicant to recover monies which had been placed in an escrow account under court supervision for the compensation of the persons whose land had been taken.

asserted facts which, although available at the time, had not been given to that tribunal

That is precisely the situation which obtains here. With one possible exception, all of the affiants are members of the intervenor Citizens for the Conservation of Natural Resources, which is represented in the proceeding by the other intervenor, Mr. Fernos.⁴ None of the statements in their affidavits relates to developments either recently occurring or discoverable only after the Licensing Board entered its February 18 order.

In this connection, the averment of several of the affiants that the applicant has not abandoned its intention to build a nuclear plant in the vicinity is said to rest on the following "evidence": (1) at the applicant's request, the NRC prepared a Final Environmental Statement on the North Coast project, which was issued in April 1977 (approximately eight months after the applicant terminated the expropriation process); (2) one stated purpose of the FES was to determine the "suitability of the [North Coast] site for eventual construction" of a nuclear facility; (3) the applicant's December 31, 1980 submission to the Licensing Board noted (at p. 6) that the "[c]essation of the expropriation process in mid-1976 did not affect the availability of [its] power of eminent domain which * * * could again be exercised if and when the project went forward"; and (4) the applicant uniformly has opposed (beginning with an October 3, 1980 filing) the intervenors' attempts to have the licensing proceeding terminated "with prejudice". We need not pass here upon whether, singly or in combination, these events might support the inference which the affiants have drawn from them. It is enough that the intervenors either were or should have been aware of each of them when the Licensing Board still had before it the question whether the termination should be "with" or "without" prejudice.

In short, simple equity precludes us from reopening the record in aid of intervenors' apparent desire to attack the decision below on fresh grounds. This is so whether or not, as the applicant further maintains (but we do not decide), our consideration of the substance of the now-proffered affidavits inevitably would leave the Licensing Board's result unchanged. To be sure, if the applicant is right in that belief, the motion to reopen would fail even were it timely. *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), ALAB-462, 7 NRC 320, 338 (1978); *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-227, 8 AEC 416, 418 (1974). Where the presentation of new matter is untimely, however, its possible significance to the outcome of the proceeding is of no moment.

⁴Unlike the others, affiant Almaranto Rufas Robles does not affirmatively allege CCNR membership. His affidavit is confined to the claim that he sustained non-compensated damage as a result of the prior expropriation of his land. It is unclear whether he still owns that land; in any event, he does not express concern over the possibility of a future expropriation.

That is at least true if, as here, the issue to which it relates is devoid of grave public health and safety or environmental implications. *Wolf Creek, ALAB-462, supra*, 7 NRC at 338, and case there cited.

Motion to supplement the record *denied*.⁵
It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

⁵The intervenors also filed an "informative motion" in which they complained of the difficulties they have encountered in obtaining the reports of prior AEC/NRC adjudicatory decisions. By June 30, 1981 letter, staff counsel informed us that a complete microfiche collection of those decisions, together with indices, has been furnished to the Law Library of the University of Puerto Rico in San Juan. We have been further told that that library possesses the necessary microfiche readers.

The staff was under no legal obligation to take this step. By doing so on a voluntary basis, however, it has substantially facilitated the ability of the intervenors to perform the legal research incident to the briefing of their appeal. We wish to record our gratitude to the staff for its sensitive appreciation of the problem which confronted the intervenors.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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

In the Matter of

Docket Nos. 50-275 OL
50-323 OL
(Security Proceeding)

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

July 15, 1981

The Appeal Board denies a motion for an oral briefing of an alleged incident of sabotage occurring recently at another facility, which was submitted without explanation of the incident's connection with this proceeding or accompanying information except for a copy of a report of the incident taken from a trade journal.

APPEARANCES

Messrs. Bruce Norton and Arthur C. Gehr, Phoenix, Arizona, and Malcolm H. Furbush, Philip A. Crane, Jr., and Douglas A. Oglesby, San Francisco, California, for the applicant, Pacific Gas and Electric Company.

Messrs. Herbert H. Brown, Lawrence C. Lanpher and Christopher B. Hanback, Washington, D.C., and Byron S. Georgiou, Sacramento, California, for the Governor of California.

Messrs. William J. Olmstead and Charles Barth and Mrs. Lucinda Low Swartz for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On June 12, 1981, the Governor of California moved for an "Immediate Briefing on [a] Security Matter." As grounds for the briefing, we are told that the Governor's "counsel read in the June 11, 1981 issue of *Nucleonics Week* that alleged sabotage with serious potential consequences for public health and safety occurred recently at the Beaver Valley-1 Nuclear Power Plant." The Governor's counsel believes that a full briefing for this Board and all participants in this case would be the only effective means to determine the relevance of the incident to the situation at the Diablo Canyon plant in California.

A copy of the four paragraph article from the trade journal in question was attached to the Governor's motion; no other information accompanied it. The staff and Pacific Gas and Electric Company, the applicant, oppose the Governor's request.

No briefing is warranted on the basis of the papers before us. The Governor makes no effort in his 17-line motion to demonstrate any connection between the incident mentioned and this case. We are not told, for example, whether the alleged incident is even theoretically possible at Diablo Canyon. We are left to speculate whether the two reactors employ the same type of emergency core cooling system (ECCS) with a similar arrangement of pumps and valves, or whether the potential consequences of closing an ECCS suction valve at Diablo Canyon are likely to be the same as those that were hypothesized for Beaver Valley. Nor do we know whether the proposed technical specifications for the Diablo Canyon operating license application require the same procedures for assuring proper ECCS valve alignment as those employed at Beaver Valley. These and a myriad of similar questions are generally answerable from materials available to the public¹ without any need to resort to sensitive security information. Rather than shoulder his initial burden to demonstrate relevance, Governor Brown seeks to transfer the lead to us and the NRC staff. No basis exists for the relief sought in the absence of a showing of such relevance.

Although the staff's response made no mention of any ongoing investigation, the article in *Nucleonics Week* indicates that the Beaver Valley licensee, the NRC staff, and the Federal Bureau of Investigation are

¹See 10 C.F.R. §§ 2.790, 50.34(b), 50.36(a), and 50.39.

looking into the matter. If, while this case is still pending before us, the staff's inquiry should disclose relevant information of significance to the Diablo Canyon security proceeding, we will surely be so informed. The staff has long been obliged to keep the licensing and appeal boards apprised of significant developments in pending cases,² and is further obligated "to lay all relevant materials before the Board to enable it adequately to dispose of the issues before it." *Consolidated Edison Co. of New York* (Indian Point Station, Units 1, 2 and 3), CLI-77-2, 5 NRC 13, 15 (1977). *Accord, Virginia Electric and Power Co.* (North Anna Station, Units 1 and 2), ALAB-551, 9 NRC 704, 706 (1979).³

Motion *denied*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to the Appeal Board

²*Duke Power Co.* (McGuire Nuclear Station, Units 1 and 2), ALAB-143, 6 AEC 623, 625 (1973).

³Finally, should it determine that the Beaver Valley incident raises a significant safety issue after our jurisdiction in this proceeding has terminated, the staff would be required to assess any possible implications for other licensed facilities, including Diablo Canyon, as part of its continuing regulatory responsibilities.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Christine N. Kohl, Chairman
Dr. W. Reed Johnson
Thomas S. Moore

In the Matter of

Docket No. 50-272 OLA
(Spent Fuel Pool Expansion)

PUBLIC SERVICE
ELECTRIC AND GAS COMPANY, et al.
(Salem Nuclear
Generating Station, Unit 1)

July 17, 1981

The Appeal Board affirms the Licensing Board's decision (LBP-80-27, 12 NRC 435) authorizing the issuance of an amendment to the facility's operating license permitting the installation of new storage racks, designed to increase the capacity of Salem's spent fuel pool.

RULES OF PRACTICE: BRIEFS

A party's brief on appeal must be confined to a consideration of the exceptions previously filed by the party and should specify, *inter alia*, the precise portion of the record relied upon in support of the assertion of error. 10 C.F.R. 2.762(a).

RULES OF PRACTICE: EXCEPTIONS

A party's exceptions, which are to specify errors in the decision below, must relate to matters raised in the party's proposed findings of fact and conclusions of law; absent a serious substantive issue, appeal boards will not entertain arguments that a licensing board had no opportunity to address and that are raised for the first time on appeal. *Tennessee Valley*

Authority (Hartsville Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348 (1978).

RULES OF PRACTICE: FINDINGS OF FACT

A party's proposed findings and conclusions must be confined to the material issues of fact and law presented on the record. 10 C.F.R. 2.754(c).

RULES OF PRACTICE: BRIEFS

Briefs are necessary not only to give appeal boards sufficient information to evaluate the basis of objections to the decision below, but also to provide an opponent with a fair opportunity to come to grips with the appellant's arguments and attempt to rebut them. The absence of a brief virtually precludes an intelligent response by appellees; accordingly, unbriefed exceptions will generally be regarded as waived. *Public Service Co. of Indiana* (Marble Hill Station, Units 1 and 2), ALAB-461, 7 NRC 313, 315 (1978).

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

It is incumbent upon intervenors who wish to participate in NRC proceedings to structure their participation so that it is meaningful and alerts the agency to the intervenors' position and contentions. *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 553 (1978).

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

Even parties who participate in NRC licensing proceedings *pro se* have the obligation to familiarize themselves with the Commission's Rules of Practice and the proper briefing format. *Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-563, 10 NRC 449, 450 n.1 (1979).

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

NEPA does not require consideration of circumstances that are only "remote and speculative possibilities." *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

Generalized assertions to the effect that "more evidence is needed" are not enough to warrant reopening a record.

NEPA: CONSIDERATION OF ALTERNATIVES

NEPA requires a consideration of alternatives only when the proposed action is a "major" one "significantly affecting the quality of the human environment," or "involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. §§ 4332(2)(C), (E).

RULES OF PRACTICE: HARMLESS ERROR

Error in a licensing board finding that does not affect or impair the board's ultimate conclusion is harmless and gives no cause for reversal.

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

More than the size and duration of a project must be evaluated when determining whether its federal approval constitutes a major action with a significant environmental impact; in order to make that evaluation, the precise federal action involved must be defined. See *Aberdeen & Rockfish R.R. v. SCRAP*, 422 U.S. 289, 322 (1975).

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

In a spent fuel pool expansion proposal, the proper focus of the environmental inquiry is the incremental effect on the environment occasioned by the proposed license amendment. *Portland General Electric Co. (Trojan Plant)*, ALAB-531, 9 NRC 263, 266 n.6 (1979).

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

After failing to raise and litigate matters properly before the licensing board, a party may not then seek reversal of the board on the ground that the board denied it due process and did not consider matters "forcefully presented." *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 553-554 (1978).

TECHNICAL ISSUES DISCUSSED:

Criticality;
Boral integrity, corrosion, swelling;
Spent fuel pool LOCA, spent fuel oxidation.

APPEARANCES

Mr. Carl J. Valore, Northfield, New Jersey, for intervenor Township of Lower Alloways Creek.

Mr. Alfred C. Coleman, Jr., and Mrs. Eleanor G. Coleman, Pennsville, New Jersey, intervenors *pro se*.

Mr. Mark J. Wetterhahn, Washington, D.C., and Mr. Richard Fryling, Jr., Newark, New Jersey, for applicants Public Service Electric and Gas Company, *et al.*

Ms. Janice E. Moore for the Nuclear Regulatory Commission staff.

DECISION

This proceeding involves the request of Public Service Electric and Gas Company, *et al.* ("applicants"), for an amendment to the operating license of Unit 1 of the Salem nuclear facility. The amendment would permit the installation of new storage racks that would increase the capacity of the spent fuel pool from 264 to 1,170 assemblies.

The Licensing Board concluded that "the additional storage can be accomplished without endangering the health or safety of the public," and thus authorized the issuance of the license amendment. LBP-80-27, 12 NRC 435, 436, 458 (1980). Intervenors — the Township of Lower Alloways Creek (TOLAC), and Alfred C. Coleman, Jr., and Eleanor G. Coleman — have appealed that decision. After full consideration of the arguments on appeal, the record, and the Licensing Board's thorough decision, we affirm.

I

The Licensing Board's initial decision recites the procedural history of this case. 12 NRC at 436-438. We repeat here only those facts that provide necessary background information for the discussion below.

Three of the intervenors' contentions were litigated at the hearing before the Licensing Board.¹ The Colemans' Contentions 2 and 6 — treated

¹The Colemans' original petition to intervene contained 20 contentions. The Licensing Board, however, concluded that these contentions were either "not sufficiently definite" or beyond the scope of the license amendment proceeding. The Board also found that the petition was not in

(CONTINUED)

together by the Board — concerned the possible deterioration of the pool's rack structure and neutron absorption material ("Boral") and the consequent implications for accidental criticality² in the spent fuel pool.³ TOLAC asserted that applicants have given inadequate consideration to possible alternatives to the spent fuel pool expansion.⁴

the proper form. Thus, the Board provided the Colemans with an opportunity to file an amended petition to intervene. Memorandum and Order (April 26, 1978) at 4-12. The Colemans then obtained counsel (the New Jersey Public Advocate's Office) and filed an amended petition with 13 contentions. (Attorneys from this office continued to represent the Colemans throughout this proceeding until the appeal. App. Tr. 14.)

Of the 13 contentions submitted by the Colemans with their amended petition to intervene, the Board eventually found four to be admissible. Order Following Special Prehearing Conference (May 24, 1978); Memorandum and Order (July 18, 1978). Two of TOLAC's original 11 contentions also were admitted. Memorandum and Order (April 26, 1978); Memorandum and Order (August 2, 1978). Applicants later moved for summary disposition of all admitted contentions. See 10 C.F.R. 2.749. In response to that motion, the Licensing Board dismissed two of the Colemans' contentions and one of TOLAC's, leaving a total of three contentions subject to evidentiary hearing. LBP-79-14, 9 NRC 557 (1979).

²"Criticality" — or "supercriticality" — describes the state of a system containing fissionable material (e.g., Uranium-235) that is capable of supporting a neutron chain reaction. A system, such as a spent fuel pool containing fuel assemblies, would be "critical" (or "supercritical") if its "effective multiplication constant," or k_{eff} , equalled 1.0 (or greater), k_{eff} is the ratio of the number of neutrons produced from fissions in each generation to the number of neutrons produced in the preceding generation. The introduction of a neutron-absorbing material (like boron) to the system reduces k_{eff} , thus tending to prevent criticality.

³The Colemans' contentions 2 and 6 stated:

2. The licensee has given inadequate consideration to the occurrence of accidental criticality due to the increased density or compaction of the spent fuel assemblies. Additional consideration of criticality is required due to the following:
 - A. deterioration of the neutron absorption material provided by the Boral plates located between the spent fuel bundles;
 - B. deterioration of the rack structure leading to failure of the rack and consequent dislodging of spent fuel bundles.
6. The licensee has given inadequate consideration to qualification and testing of Boral material in the environment of protracted association with spent nuclear fuel, in order to validate its continued properties for reactivity control and integrity.

⁴TOLAC's contention 1 stated:

The Licensee has not considered in sufficient detail possible alternatives to the proposed expansion of the spent fuel pool. Specifically, the Licensee has not established that spent fuel cannot be stored at another reactor site. Also while the GESMO proceedings have been terminated, it is not clear that the spent fuel could not by some arrangement with Allied Chemical Corp. be stored at the AGNS Plant in Barnwell, South Carolina. Furthermore, the Licensee has not explored nor exhausted the possibilities for disposing of the spent fuel outside of the U.S.A.

As the hearing progressed, the Board itself raised several additional issues by posing questions that concerned (1) the nature of the March 1979 events at Three Mile Island (TMI) and the effects (if any) on the spent fuel pool at that site, and (2) the consequences of a gross loss of water from the Salem pool with expanded capacity.⁵ Applicants requested interlocutory review of the latter inquiry, contending that it reflected Board consideration of the consequences of a "Class 9 accident," contrary to Commission policy. We declined to review the matter, noting that "the Board below has marked a path of inquiry that stops short of considering a Class 9 accident." ALAB-588, 11 NRC 533, 536-537 (1980).

The issues heard by the Licensing Board and addressed in its initial decision thus fall into four categories: (1) the possible deterioration of the neutron absorption material and rack structure; (2) the consideration of alternatives to pool expansion; (3) the relationship of the events at TMI to this proceeding; and (4) the consequences of a gross loss of water. The

⁵The Licensing Board first asked the following three questions (Order, April 18, 1979):

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 subsequently dropped the second question.)

At the July 10, 1979, hearing session, the Board made another TMI-related inquiry (Tr. 922-923):

The proposed Annex to Appendix D, 10 C.F.R. 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?

Finally, the Board asked (LBP-80-10, 11 NRC 337, 346 (1980)):

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?

Board resolved each of these matters in favor of expanding Salem's spent fuel pool.⁶ It therefore found "reasonable assurance that the activities authorized by the requested amendment to the operating license can be conducted without endangering the health and safety of the public" and "will not be inimical to the common defense and security." 12 NRC at 457-458. The Board also concluded that a grant of this license amendment does not require the preparation of an environmental impact statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321. *Id.* at 456-457. It thus authorized the Director of Nuclear Reactor Regulation to issue the license amendment, and these appeals followed.

II

Regrettably, we must begin by noting the great difficulty we have had in understanding the intervenors' arguments on appeal — particularly as they relate to their exceptions, their proposed findings of fact and conclusions of law, and the contentions and other issues litigated below. The Commission's regulations require each party to confine its brief on appeal "to a consideration of the exceptions previously filed by the party and, with respect to each exception, [the brief] shall specify, inter alia, the precise portion of the record relied upon in support of the assertion of error." 10 C.F.R. 2.762(a). The exceptions, which are to specify errors in the decision below, must in turn relate to matters raised in the party's proposed findings of fact and conclusions of law. This is because we will not entertain arguments that a licensing board had no opportunity to address and that are raised for the first time on appeal — absent a "serious substantive issue." *Tennessee Valley Authority* (Hartsville Plant, Units 1A, 2A, 1B, and 2B), ALAB-463, 7 NRC 341, 348 (1978). Finally, a party's proposed findings and conclusions must be confined to the material issues of fact and law "presented on the record." 10 C.F.R. 2.754(c).

On the other side of the coin, we will not consider exceptions that are not fully briefed. *Tennessee Valley Authority* (Hartsville Plant, Units 1A, 2A, 1B and 2B), ALAB-367, 5 NRC 92, 104 n.59 (1977), and cases cited. As we observed in *Public Service Co. of Indiana* (Marble Hill Station, Units 1 and 2), ALAB-461, 7 NRC 313, 315 (1978) (footnotes omitted),

⁶Only the applicants and NRC staff offered testimony and proposed findings on the Board's TMI questions. 12 NRC at 449. Moreover, with one minor exception (see note 42, *infra*), intervenors raise no arguments on appeal that concern this matter. Accordingly, this opinion does not specifically address the Licensing Board's disposition of its TMI questions. As is our practice, however, we have reviewed the record and find no basis for disturbing the Board's conclusions.

briefs are necessary to "flesh out" the bare bones of the exceptions, not only to give us sufficient information to evaluate the basis of objections to the decision below, but also to provide an opponent with a fair opportunity to come to grips with the appellant's arguments and attempt to rebut them. The absence of a brief not only makes our task difficult but, by not disclosing the authorities and evidence on which the appellant's case rests, it virtually precludes an intelligent response by appellees. For these reasons we generally follow the course charted by the Federal courts and disregard unbriefed issues as waived.

A brief that merely indicates reliance on previously filed exceptions or proposed findings and conclusions, without providing meaningful argument, is of little value in appellate review. *Hartsville, ALAB-463, supra*, 7 NRC at 370. Indeed, a brief so deficient in argument precludes "an intelligent disposition of the issues." *Duke Power Co. (Catawba Station, Units 1 and 2), ALAB-355, 4 NRC 397, 413 (1976)*. Above all else, however, "it is ... incumbent upon intervenors who wish to participate [in NRC proceedings] to structure their participation so that it is meaningful, so that it alerts the agency to the intervenors' position and contentions." *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 553 (1978).

Both of the intervenor briefs come up short in satisfying the criteria discussed above. For example, while the Colemans may have invested substantial effort in the preparation of their brief, it is nonetheless difficult to discern what their arguments are, particularly as they relate to the 12 exceptions they filed.⁷ Most of their brief is styled "Findings of Fact" and contains references to matters, both within and beyond the record, that have no apparent relationship to either their exceptions or proposed findings and conclusions.⁸ In a two-page portion of their brief entitled "Exceptions," the Colemans attempt to link their exceptions to the

⁷Our comments take due account of the fact that the Colemans are participating in this appeal *pro se*. Thus, we do not hold them "to those standards of clarity and precision to which a lawyer might reasonably be expected to adhere." *Houston Lighting and Power Co. (Allens Creek Station, Unit 1), ALAB-590, 11 NRC 542, 546 (1980)*, quoting from *Public Service Electric and Gas Co. (Salem Station, Units 1 and 2), ALAB-136, 6 AEC 487, 489 (1973)*. On the other hand, the Colemans were obliged to familiarize themselves with the Commission's Rules of Practice and the proper briefing format. *Pennsylvania Power and Light Co. (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-563, 10 NRC 449, 450 n.1 (1979)*. Since these intervenors were represented by counsel until this appeal (see note 1, *supra*), they could have relied on pleadings filed earlier in the proceeding by their own counsel and others as general guidance in preparing their appellate brief.

⁸See, e.g., Br. "Findings of Fact" at 1-8, 10-12.

"Findings of Fact" portion of their brief. But this rather limited and generalized material can scarcely pass for meaningful "argument." As for TOLAC, it has apparently taken the term "brief" literally. Its seven-page offering is simply a rehearsal of its four-page "Exceptions." It adds little in the way of coherent argument to facilitate our disposition of this matter. See *Hartsville*, ALAB-463, *supra*, 7 NRC at 370. See also *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 805 (1979). Unlike the Colemans (see note 7, *supra*), TOLAC is represented in this appeal, as it was throughout the proceeding below, by counsel. We are, therefore, neither obliged nor inclined to judge TOLAC's arguments by the more lenient standards that may be applied to arguments advanced by a layman acting without legal assistance.

We emphasize that these comments are intended — not so much for the sake of criticism (particularly in the case of the Colemans) — as an expression of the limitations that the intervenors' briefs have placed on our appellate review. We have nevertheless endeavored to give the fullest consideration possible to every discernible argument. After a careful review of the briefs, other pleadings, and oral argument, we find that most of the intervenors' substantive arguments relate to the following matters: (1) the integrity of the neutron absorption material and spent fuel rack structure in the pool; (2) the denial of TOLAC's request for further analysis of the propagation of oxidation to older fuel in the event of a gross loss of water from the pool; and (3) the adequacy of the environmental review. The Colemans also allege a number of basically procedural errors in the Licensing Board's disposition of the case. We address each point *seriatim*.¹⁰

A

The Colemans' contentions 2 and 6 (see note 3, *supra*) question the ability of the neutron absorption material to resist deterioration and thus

⁹For instance, with respect to exceptions 1, 2, 3, 8, 9, and 12, the Colemans argue, *in toto*:

The Staff failed to investigate, analyze or review the facts known by both the Staff and Licensee, as outlined in Findings of Fact III, IV, V, VI, VII, VIII, IX, and X, in the review process in preparation of the Environmental Impact Analysis and analysis by the Staff expert during these proceedings.

¹⁰Except for the Colemans' generalized complaints (Br. "Findings of Fact" at 1), the intervenors raise no arguments involving the contentions dismissed earlier as a result of applicants' motions for summary disposition. See note 1, *supra*. We have nonetheless examined on our own initiative the record underlying the Licensing Board's action in that regard, and we have found no error requiring corrective action. Likewise, we have discovered no other basis for concluding that the reracking and expansion of the spent fuel pool at Salem Unit 1 might either pose an undue risk to the public health and safety or have a significant effect on the environment.

prevent accidental criticality. On appeal, they continue to voice this concern.

1. First, the Colemans suggest that applicants' criticality calculations are invalid for failing to take account of the "realistic operating conditions" of the expanded pool.¹¹ See, e.g., Br. "Findings of Fact" at 10. To be sure, these calculations, which the staff reviewed and found acceptable, are not based on the actual contents of and operating conditions in the pool. Rather, they "are based on unirradiated fuel assemblies with no burnable poison and a fuel loading of 44.7 grams of uranium-235 (U-235) isotope per axial centimeter of fuel assembly." Exhibit 6-B, Staff Safety Evaluation ("SE") at 2-1. "Unirradiated" fuel is new fuel not yet "spent" in the reactor. It thus has a higher content of fissionable material than the spent fuel that is intended for storage in the pool and thus would have a higher k_{eff} . "Poison" refers to neutron-absorbing material, such as boron, which decreases reactivity and thus k_{eff} . The amount of fuel used in the calculations (44.7 grams of U-235 per axial centimeter) is the maximum permitted by the technical specifications of the license amendment. *Id.* at 2-3.

The calculations therefore conservatively postulate a "worst case" — that is, a situation that contemplates storage of a maximum amount of fissionable material in pool water containing *no* neutron-absorbing boron. The k_{eff} calculated for this scenario is 0.923 — below the NRC's acceptance criterion of 0.95. *Id.* at 2-2.

The actual structure and normal operating conditions of the pool, which the Colemans would supplant for the conditions postulated in applicants' "worst case" analysis, would necessarily yield a low k_{eff} , *lessen* the chance of criticality occurring, and be more favorable to applicants. To illustrate, the proposed spent fuel storage racks will be an assemblage of open-ended, double-walled, stainless steel "squared" cylinders, approximately 14 feet long and nine inches on each side. Boral (boron carbide and aluminum) plates will be welded between the double stainless steel walls. *Id.* at 2-1. The water surrounding the racks is to contain approximately 2,000 ppm boron in the form of boric acid. Tr. 444-448, 736-738. The pool will store spent — rather than unirradiated — fuel of necessarily diminished fissionable material content. Thus, in actual operation, the pool will contain, in addition to the Boral plates in the rack assemblage, borated water¹² and fuel that has already undergone substantial burn up in the reactor. These

¹¹Exxon Nuclear Company, Inc., which supplies the new storage racks for Salem, actually performed the criticality calculations for applicants. Exhibit 6-B, Staff Safety Evaluation ("SE") at 2-1.

¹²The primary function of the boron in the spent fuel pool water, however, is "to prevent the reactor water from becoming diluted" during refueling, when "the spent fuel pool water comes in contact with the reactor water." Tr. 445.

factors mitigate, not enhance, criticality. Applicants properly and prudently did not take them into account in performing their calculations.¹³

The Colemans appear to argue further, however, that applicants' criticality calculations are defective because they do not take into account certain additional, "normal" contents of the spent fuel pool.¹⁴ Such items include: spent fuel assemblies, burnable poison rods, thimble plugs, a "dummy" fuel assembly and control rod, actual control rods, an empty 14-foot basket, a similar basket containing cut-up control rod "fingers," and a bucket with grid straps. Br. "Findings of Fact" at 7. As noted above, spent fuel contains less fissionable material than the unirradiated fuel postulated in applicants' calculations. Poison rods and control rods (which also contain a "poison" like boron) absorb neutrons, thereby lowering the k_{eff} . The other items listed — miscellaneous, ordinary pool hardware — do not increase the chance of criticality. Thus, consideration of these various contents of the spent fuel pool in applicants' criticality computations once again would have yielded a lower k_{eff} .¹⁵

2. The Colemans next contend that inadequate attention has been paid to the possibility that the Boral plates within each cell wall will corrode and deteriorate in the pool environment, enhancing the prospect of criticality.¹⁶

¹³Thus, the fact that applicants did not consider — as the Colemans would have preferred (Br. "Findings of Fact" at 10, 12) — the varying rates of fuel burn up and decay in its calculations is irrelevant. By using unirradiated fuel in its formula, applicants conservatively assumed there would be no burn up at all and consequently maximum fissionable material concentration.

¹⁴The Colemans raise this particular point for the first time on appeal. They characterize it as "substantive information" not discovered until after the hearing. App. Tr. 14. Apparently applicants' counsel provided a list of the pool's "normal" contents by letter of May 16, 1980, in response to a request from the Colemans' counsel. Br. "Findings of Fact" at 7 n.6. Clearly, counsel could have requested and obtained this information earlier, before the hearing was closed. Moreover, intervenors' counsel made no effort to bring this allegedly "substantive" information to the Board's attention and did not mention it in the Colemans' proposed findings and conclusions, dated June 26, 1980. We generally would disregard this point entirely (see p. 8, *supra*). But in the special circumstances of this case, we address the matter at all only because it evidently is of some concern to the Colemans.

¹⁵Because this matter was not explored at the hearing, there is no evidence of record that explicitly discusses the effect of these assorted items on criticality. The staff's Safety Evaluation, however, stated that the criticality calculations performed by Exxon "yield the maximum neutron multiplication factor [k_{eff}] that could be obtained throughout the life of the fuel assemblies." Exhibit 6-B, SE at 2-2 (emphasis added). This statement thus supports our conclusion that these additional pool contents do not increase the likelihood of criticality.

¹⁶The Colemans also again refer to the "additional contents" of the pool and argue that it was error not to consider the possibly corrosive effect of these items on the Boral plates. Presumably, the Colemans' concern, as expressed at oral argument (App. Tr. 10), is that the interaction of these articles with the borated water in the pool may create chemical substances that might corrode the Boral plates. As we observed above at note 14, the Colemans did not raise this particular point at the evidentiary hearing before the Licensing Board. However, we note that this spent fuel pool is equipped with a water purification system that contains a filter and demineralizer. Exhibit 6-C, Staff Environmental Impact Appraisal ("EIA") at 4. This system, "similar to such systems at other nuclear plants," *ibid.*, is intended to clarify and

(CONTINUED)

The inner layer of Boral material in each storage cell is "sandwiched" between two layers of stainless steel. The Colemans fear that pool water will seep between these layers, corroding the neutron-absorbing Boral and impairing its ability to prevent criticality. They question whether the storage cells and racks to be used in Salem Unit 1 have been adequately tested in actual use. Further, they suggest that the cell supplier's (Exxon) claim of "95 percent leaktightness/95 percent confidence level" is not good enough to protect the public health and safety. Br. "Findings of Fact" at 13-15.

Based on its consideration of the evidence,¹⁷ the Licensing Board found that "Boral would corrode if it came into contact with the pool water." 12 NRC at 440. But the Board also found that "the Boral sheets would be enclosed completely in the welded stainless steel cell walls so as to separate the Boral from the pool water and provide protection against corrosion." *Ibid.* It concluded that "adequate consideration has been given to qualification and testing of the Boral to insure its continued integrity and ability to control reactivity." *Id.* at 443. The Board further noted that applicants are committed to a long-term surveillance program, involving the use of the same material that is in the storage cells, to detect any degradation of the cells. *Ibid.* Finally, the Board found that even if any corrosion were to occur, it would consist of pitting, edge attack, and the formation of the small bulges in the Boral plates. The boron carbide would remain in place and its ability to absorb neutrons would not be "appreciably" impaired. *Id.* at 441.

The record clearly supports the Licensing Board's findings and conclusions concerning the likelihood and effects of Boral corrosion. The stainless steel shrouds surrounding the Boral within each cell wall are seal-welded together pursuant to stringent quality control. Exhibit 6-B, SE at 2-13. Despite the Colemans' skepticism, Exxon's guaranty of 95 percent leak-

remove any foreign substances from the water that could cause the corrosion intervenors fear. See also *Virginia Electric and Power Co. (North Anna Station, Units 1 and 2)*, ALAB-584, 11 NRC 451, 462 (1980), *petition for review pending sub nom. Potomac Alliance v. NRC* (No. 80-1862, D.C. Cir., filed July 28, 1980).

In any event, a Commission regulation, 10 C.F.R. 50.59(b), "imposes a mandatory obligation upon the licensee — just as enforceable as a technical specification — to record and report all deviations from the operating procedures established for the maintenance and monitoring of water chemistry. *Portland General Electric Co. (Trojan Plant)*, ALAB-531, 9 NRC 263, 274-275 (1979). This regulation, which makes any report filed a matter of public record, in our view provides adequate assurance that a safe and noncorrosive water environment will be maintained in the pool.

¹⁷The applicants and staff presented evidence on contentions 2 and 6; the Colemans presented no direct evidence, but participated in cross-examination. 12 NRC at 438, 443.

tightness with a 95 percent confidence level amply satisfies the public health and safety standard of the Atomic Energy Act.¹⁸ As applicants' witnesses testified at the hearing, the 95 percent figures do *not* mean that as many as five percent of the 1,170 spent fuel cells would leak. Rather, the 95/95 limit is simply an industry-prescribed

measure of confidence that one must establish and meet to ... assure that the cells are leak-tightFrom a pure [*sic*] statistical basis,... that would infer [*sic*] significantly less than 5 percent of the storage cells would leak. [Tr. 616-617.]

To back up its compliance with this standard, Exxon conducted "helium leak tests," which can detect extremely small pinholes in the cell walls. Tr. 617. Based on the results of these tests, Exxon expressed "confidence that no more than 20 to 30 cells could develop a leak." Tr. 770. The actual results of the first helium leak tests revealed pinholes in five to ten percent of the sample cells. Tr. 772. But, "after all the bugs had been worked out of the protection [*sic*] process, [Exxon] never did discover another leaking cell." *Ibid*. In any event, intervenors point to no evidence contradicting NRC staff testimony that potential storage cell leakage is "[n]ot a safety consideration." Tr. 733. See also Exhibit 6-B, SE at 2-15; pp. 21-22, *infra*.

The Colemans' complaint that the cells have not been tested over a sufficiently long period of time in actual use likewise fails to withstand scrutiny. The tests subjected samples of Boral material to a fuel pool environment for a period of approximately one year and extrapolated the results for 40 years. Exhibit 2, Affidavit of Edwin A. Liden, PSE&G Project Licensing Manager, at 5-6. One of applicants' witnesses testified on cross-examination that reliance on tests of this duration and extrapolations based on them is a widely accepted practice, not unique to the nuclear industry. Tr. 565-567. An NRC staff witness agreed that this was an acceptable — if not "overconservative" — approach. Tr. 693-694. Further, in this case, the tests revealed nothing to suggest additional testing of Boral corrosion was necessary. Tr. 565-567, 615. In fact, Boral has actually been exposed in water for up to 20 years without significant deterioration. Fol. Tr. 652, Affidavit of Dr. John R. Weeks, NRC Staff Witness, at 3; Exhibit 8 at 2-3. Although such exposure primarily has been within a research reactor containing deionized (rather than borated) water, testimony indicated that the boric acid environment of a spent fuel pool would not cause "a great deal of change" in the amount of corrosion. Tr. 603-604.

¹⁸See Atomic Energy Act, Section 103, 42 U.S.C. 2133; 10 C.F.R. 50.91.

Exxon's one-year test and the conclusions drawn from some 20 years of observing Boral in a water environment, however, do not mean that applicants intend to ignore the new cells once they are installed in the pool. On the contrary, as the Licensing Board pointed out (12 NRC at 443), applicants are committed to a long-term surveillance program. One year after installation and at subsequent two-year intervals, applicants will examine sample Boral "coupons" from the Salem pool in order to detect any corrosion. Exhibit 2, Liden Affidavit at 6-7, See also Tr. 497-499, 584-588. A witness for the staff testified, without challenge, that he agreed with the applicants' described surveillance program (Tr. 694-695), and at oral argument staff counsel indicated that the Commission's Office of Inspection and Enforcement will monitor this program (App. Tr. 55). See also Tr. 683-685.

A further point should not be overlooked in connection with the issue of Boral integrity. There appears to be no dispute that Boral will corrode if it comes in contact with the pool water. See, e.g., fol. Tr. 652, Weeks Affidavit at 4; Exhibit 2, Liden Affidavit at 4; Tr. 624. To be more precise, however, it is the aluminum component of Boral that is subject to corrosion, rather than the boron carbide, which is inert in a spent fuel pool environment. Exhibit 2, Liden Affidavit at 4, 6; fol. Tr. 652, Weeks Affidavit at 2, 3, 4; Exhibit 8 at 5; Tr. 664-665. Thus, even if the Boral plates themselves were to incur some pitting, edge attack, and bulging, there would be no loss in the volume or change in the chemical composition of the neutron-absorbing boron carbide particles. Exhibit 2, Liden Affidavit at 6; Exhibit 8 at 2-3; Tr. 664-665. As a consequence, the neutron-absorbing (or "poison") capability of the Boral in the storage cells would not be diminished, and any corrosion that occurs would not contribute to the achievement of criticality. Fol. Tr. 652, Weeks Affidavit at 1-2; Exhibit 6-B, SE at 2-15; Tr. 618.

The Colemans appear to argue, however, that the Licensing Board has not given adequate consideration to another "problem" associated with Boral corrosion — the inward "swelling" of cell walls attributable to the hydrogen gas produced when aluminum corrodes. The staff's Safety Evaluation described such an occurrence at the Monticello facility in August 1978. Exhibit 6-B, SE at 2-13. The swelling of a cell's stainless steel walls can preclude either removal of the spent fuel assembly stored within or insertion of a fuel assembly into a cell. Notwithstanding arguments to the contrary, the Licensing Board explored every facet of this matter at length during the hearing and in its initial decision. It found that a similar condition could arise at Salem *if* water were to leak into the cells walls. 12 NRC at 441. But the Board concluded that venting the top of each cell (by drilling a small hole) to permit the gas to escape — the procedure followed at Monticello — is "adequate to protect the public health and safety" if a

leak should develop. *Id.* at 443. To support this ultimate conclusion, the Board made subsidiary findings that neither the stainless steel cell walls nor a stored fuel assembly would sustain damage from the gas pressure and swelling, and that the amount of hydrogen generated was too small to pose a risk of combustion. *Id.* at 441-442.

The record again supports the Board's findings and conclusions. The staff stated in its Safety Evaluation that this swelling, if it were to occur, would not present a safety hazard. Exhibit 6-B, SE at 2-15. The staff premised this view on tests performed by Exxon revealing that the worst consequences of the swelling phenomenon would be loss of the use of an empty fuel cell and the inability to withdraw a fuel assembly stored in a swollen cell without first venting it. *Id.* at 2-14. See also Exhibit 2, Liden Affidavit at 4-5; Tr. 618-619. Substantial testimony at the hearing concerned the relative merits of (1) venting empty cells before installation to prevent gas buildup, and (2) venting cells by semi-remote tooling only if swelling actually occurs after installation. As the Licensing Board correctly noted (12 NRC at 442), the staff prefers the former, while applicants opt for the latter method so as to minimize the chance of possible corrosion from water entering through the vent-holes. Compare Tr. 619-631 with Tr. 715-734. The Board also recognized (12 NRC at 442), however, the staff's expressed satisfaction with applicants' choice and proposed methods in this regard, should any venting become necessary. See Tr. 714; Exhibit 8 at 5. The staff was unequivocal in its views that swelling in cell walls is an operational problem for applicants, and that safety is *not* a factor of any consequence with respect to venting before or after rack installation. Tr. 716, 731, 734. Moreover, the record shows no relationship between the swelling phenomenon and the corresponding venting of cells to relieve it, on the one hand, and, on the other, the increased likelihood of criticality.

In any event, the evidence demonstrates that applicants have taken special steps to prevent leaking cells and the resulting swelling that occurred at Monticello. First, the storage racks at Monticello were not provided by Exxon (Exhibit 2, Liden Affidavit at 7), and they differ in design and construction (Tr. 458). In particular, the racks at Salem are to be composed of discrete cells — one for each fuel assembly — welded to a base, rather than to each other, as at Monticello. Tr. 457-459. The cells are also sealed for greater protection against leaks, unlike those in use at Monticello. Tr. 626-627; Exhibit 6-B, SE at 2-13. Second, as discussed above at p. 18, applicants and Exxon have established a stringent quality control program, learning from the experience at Monticello. Exhibit 2, Liden Affidavit at 7; Tr. 443, 627, 732.

In sum, the Licensing Board gave full consideration to all the arguments and evidence before it concerning the issue of Boral deterioration, and it

concluded that the Colemans' contentions lacked merit. Our own review of the evidence supports that decision and clearly shows that (1) it is quite unlikely that a significant number of the spent fuel storage cells at Salem Unit 1 will leak; (2) applicants and the NRC staff will monitor the behavior of the new cells at prescribed intervals following installation; (3) if any cells do leak, the resulting corrosion will not impair the neutron-absorbing capability of the Boral; and (4) venting can safely alleviate any gas buildup within a corroded and swollen cell. None of the Colemans' arguments on appeal relating to these matters persuades us otherwise. We therefore agree with the Licensing Board that, "with respect to the issues raised by Colemans' Contention 2 and 6, the spent fuel pool can be modified and operated as proposed without endangering the health and safety of the public." 12 NRC at 443.

B

As noted above, the Licensing Board asked what the difference in consequences would be between a gross loss of water from the Salem spent fuel pool with expanded capacity, and such an event at the pool with its present capacity.¹⁹ The Board found that, in the absence of cooling water in either the present or the expanded pool, the heat generated by radioactive fission products could cause the protective zirconium cladding around newly discharged spent fuel assemblies to oxidize and lead to a release of fission products. In the pool as proposed, with a denser storage configuration — and consequently less natural convection cooling — however, there would be a higher likelihood of oxidation. 12 NRC at 453-454.²⁰

The Board therefore examined the witnesses on whether this oxidation could spread from fresher fuel to older spent fuel stored nearby.²¹ An NRC staff witness, Dr. Allan S. Benjamin, testified that oxidation propagating via thermal radiation from newer fuel elements to older ones is a possibility that cannot be ruled out. Tr. 1391-1392, 1394, 1397, 1398-1399, 1481. Another staff witness, Mr. Walter F. Pasedag, agreed, but emphasized his belief that the oxidation of fuel four years and older would be "limited" and "would not lead to a substantial release of fission products beyond those released from the freshly discharged 1/3 core." Fol. Tr. 1387, Pasedag Further Testimony at 2. Both Dr. Benjamin and Mr. Pasedag testified that certain calculations and analysis would be necessary to transform this speculation into a more precise conclusion. Dr. Benjamin stated further

¹⁹See note 5, *supra*.

²⁰See also fol. Tr. 1387, Pasedag Direct Testimony at 4, 5, and Pasedag Further Testimony at 2.

²¹See note 24, *infra*.

that, without such analysis, he was unable to give an opinion on whether the propagation of oxidation to older fuel assemblies was more, or less, likely to occur. Tr. 1437. He expressed his belief, however, that the possibility of this occurrence is "significant enough" to warrant consideration in determining the difference in consequences between the pool as it now exists and as expanded, and that one person could do the analysis in a "few months." Tr. 1488, 1483.

Intervenor TOLAC then orally moved the Licensing Board to suspend the hearing and order this analysis to be performed. Tr. 1492. See also Tr. 1801-1803. The board deferred ruling at that time but later denied TOLAC's motion and closed the record, concluding that "the further analysis cannot be justified in light of the evidence which has already been received." Tr. 1495; Order of May 9, 1980. The Licensing Board subsequently reaffirmed that ruling in its initial decision (12 NRC at 455):

We do not believe ... that further study is needed to reach our decision. Mr. Pasedag's testimony convinced us that even if oxidation did propagate to the older fuel the resulting radioactive release would not be significant in comparison to the radioactive release from the recently discharged fuel. When we consider that Dr. Webb (TOLAC's witness) was unable to describe any credible mechanism for propagation despite a specific invitation to do so, and consider that a gross loss of water is in itself an event of very low probability, we do not believe that further study of propagation is necessary to answer our question. We are satisfied that in the event of a gross loss of water from the spent fuel pool, there would not be a great difference between the consequences occasioned by the proposed storage configuration and those occasioned by the present one.

Here on appeal, both TOLAC and the Colemans contend that the Board erred in not ordering the further analysis of the propagation of oxidation from fresh to older spent fuel. TOLAC, relying on *Northern States Power Co.* (Prairie Island Plant, Units 1 and 2), ALAB-284, 2 NRC 197 (1975), argues that additional hearing and evidence in the form of the propagation analysis is necessary to resolve this issue, and it requests a remand and reopening of the record on this point. Br. at 1, 2. It also disputes the Board's conclusion that there would not be a great difference in the consequences of a gross loss of water from the pool as expanded and in its present configuration. *Id.* at 3. The Colemans simply point to Dr. Benjamin's testimony (Tr. 1488-1489) that further analysis is warranted. They also argue that the fact that Mr. Pasedag and Dr. Benjamin disagreed as to the

value and relevancy of the analysis (see Tr. 1506, 1579-1580) underscores the need for more specific data. Br. "Findings of Fact" at 17.

It is worthwhile to note also what intervenors do *not* argue. While challenging the Licensing Board's decision not to seek further propagation analysis and its ultimate conclusion on the gross loss of water question, neither TOLAC nor the Colemans appear to dispute the specific underpinnings of that conclusion — *i.e.*, that (1) even if oxidation were to spread to older fuel, the resulting radioactive releases would be insignificant compared to those from recently discharged fuel;²² (2) TOLAC's witness was unable to describe a credible mechanism for propagation; and (3) a gross loss of water is an event of very low probability. Nor do intervenors challenge any of the evidence or testimony of record concerning the propagation of oxidation to older fuel.²³ The essence of their arguments is that because one witness testified that some further study is warranted, it therefore must be done.

In proceedings that involve matters of public health and safety, the testimony of a qualified witness calling for further analysis of any aspect of a pending proposal merits serious consideration. For that reason, intervenors' arguments for further study of the propagation of oxidation to older fuel in the pool strike a responsive chord. But upon closer scrutiny, they fail to ring true.

Intervenors — in particular, the Colemans — suggest that there is a "conflict" between the testimony of the two NRC staff witnesses, Mr. Pasedag and Dr. Benjamin. In fact, there is no real conflict. Both agreed that propagation of oxidation to older fuel "cannot be ruled out." See, *e.g.*, fol. Tr. 1387, Pasedag Further Testimony at 2; Tr. 1391. Dr. Benjamin was simply unable to state precisely whether such propagation is more or less likely to occur — in effect, to quantify or reduce it to a known percentage — without performing further calculations and analysis. Tr. 1437, 1482, 1488-1489. While this information might be of academic interest or value, the existence of other undisputed factors in this case makes it unnecessary for decisional purposes.

²²Indeed, on brief (at 2), TOLAC concedes that "this may be true."

²³TOLAC casually observes on brief (at 2) that the Board excluded portions of the prepared testimony of Dr. Richard E. Webb and all of the prepared testimony of Dr. David B. Fankhauser — both TOLAC witnesses. See 12 NRC at 451-452. Intervenor does not argue, however, that the Board erred in so ruling. In fact, TOLAC could not now make such an argument since it offered Dr. Webb's testimony for admission "subject to the rulings that the Court [*sic*] has already made striking certain portions of that testimony" (Tr. 1697), and it failed to challenge the rejection of either witness' testimony in its proposed findings and conclusions. See p. 8, *supra*.

It is of interest to note here that the Board also struck *all* of applicants' testimony on the gross loss of water question as "not responsive." 12 NRC at 451.

For example, a significant factor in connection with the Board's consideration of the propagation of oxidation to older fuel in the event of a gross loss of water is the amount of radioactive releases likely to be associated with the oxidation. The analysis suggested by Dr. Benjamin would not provide further data on this point; it would only confirm or reveal more precisely the percentage chance that oxidation would even spread to older fuel. In fact, the testimony of Mr. Pasedag assumed that there *would* be some oxidation of older fuel but indicated that the radioactive releases from it would not substantially exceed those from fresher spent fuel.²⁴ He explained why:

[t]his is a result of several factors, including the [prior] decay of volatile fission products (other than Cs-137), the fact that the primary source of energy is external to the rods, the thermal insulating property of the zirconium oxide layer which would reduce heat conduction to the interior of the rod, and the formation of temperature gradients opposed to the direction of diffusion. Although some eutectic formation would occur after heating the rod to the zirconium melting temperature, the UO₂ matrix cannot be expected to reach its melting point.

Fol. Tr. 1387, Pasedag Further Testimony at 2. See also Tr. 1448-1450. Intervenors point to no testimony or evidence that contradicts Mr. Pasedag's statements concerning the limited releases from oxidized older fuel assemblies.²⁵

Another factor contributing to the Licensing Board's determination not to require further analysis of oxidation propagation is its finding that the gross loss of water postulated in its question is "itself an event of very low

²⁴In this regard, a reminder is in order. The proposal under consideration in this proceeding is to expand the capacity of Salem's spent fuel pool. A major difference between the pool as expanded and as it now exists will be the presence of older spent fuel (four years and older). It is thus the effects of that *difference* that we must assess — not the effects attributable to the spent fuel pool itself.

²⁵TOLAC's witness, Dr. Webb (see note 23, *supra*), testified that substantial releases of radioactivity could result from a zirconium "fire" (oxidation) following a gross loss of pool water. The Licensing Board, however, found that Dr. Webb was unable to describe with any degree of specificity a mechanism for release of the radioactivity from the pool or to relate his testimony to the presence of older spent fuel in the pool. 12 NRC at 452-453, 455.

Even though intervenors have not directed our attention to any portion of Dr. Webb's testimony that addresses this matter, we have nonetheless reviewed both his written and oral submissions. We agree with the Licensing Board (*id.* at 453) that much of it is "ill-organized and difficult to follow." See, e.g., Tr. 1706-1716, and prepared testimony of Dr. Webb there referenced.

probability.” 12 NRC at 455. In fact, no witness was able to describe a credible mechanism for such an occurrence. *Id.* at 445.

Although TOLAC calls the testimony of its witnesses, Dr. Richard Webb and Dr. George Luchak, “persuasive” (Br. at 3), our review of their submissions reveals that they fall far short of that generous characterization.²⁶ As we observed above (see notes 23 & 25, *supra*), much of the prepared testimony of Dr. Webb was “ill-organized and difficult to follow” and stricken from the record without TOLAC’s objection. In particular, the Board excluded virtually all of Dr. Webb’s testimony relating to how a gross loss of water might occur. Tr. 1377-1378; fol. Tr. 1697, Webb Testimony dated February 27, 1979, at 16-33. As for Dr. Luchak, the Board found him “not qualified” to testify about the probability or consequences of a gross loss of water event at Salem. Tr. 913; 12 NRC at 445. It struck that part of Dr. Luchak’s testimony, and TOLAC neither objected in its proposed findings and conclusions nor objects here on appeal.

An NRC staff witness, Mr. Gary Zech, testified on cross-examination that there was no credible mechanism for a serious accident at the Salem spent fuel pool. Tr. 1042-1043. He also testified in response to Board questioning that the pool environment is a “very stable” one, constructed of reinforced concrete and classified seismic category 1.²⁷ He could conceive of no credible mechanism for the loss of water from the pool, except by slow evaporation, and noted the existence of several sources of back-up water. Tr. 1047-1048. Another staff witness, Mr. Pasedag, was also unable to identify any credible mechanism for a gross loss of water. The largest credible leak he could postulate was 710 gallons per minute — or a decrease in water level of 1.1 inches per minute from the approximately 39 feet of water in the pool.²⁸ Even this leak could occur only in the “highly unlikely” event that all 10 leak-off tubes were to discharge at maximum capacity as a result of multiple punctures of the pool’s stainless steel liner. At least two alarm systems would detect the leakage and automatically activate the sump pumps, permitting eventual capping of the leak-off tubes. Fol. Tr. 1387, Pasedag Direct Testimony at 1-2.

Based on the relevant, admissible evidence of record, we find that the Licensing Board was justified in concluding that a gross loss of water from the Salem spent fuel pool was an event of such low probability as to warrant no further inquiry. See also ALAB-588, *supra*, 11 NRC at 536-537.²⁹

²⁶Again TOLAC fails to cite the *specific* testimony that it deems “persuasive.”

²⁷See Regulatory Guide 1.29, Seismic Design Classification (September 1978); 10 C.F.R. Part 100, Appendix A, III(c).

²⁸See Final Safety Analysis Report, Fig. 9.4-1.

²⁹Intervenors raise two other points that relate to the hypothetical gross loss of water event.
(CONTINUED)

The record supports the Licensing Board's findings that (1) the radioactive releases from any oxidation of older fuel would not be significant relative to those from recently discharged fuel, (2) a gross loss of water is an event of very low probability, and (3) further analysis of whether oxidation could propagate to older fuel is therefore "not ... needed." 12 NRC at 455. Intervenors have thus failed to carry their "heavy burden" of convincing us that a propagation analysis would have made a relevant contribution to the Board's resolution of its gross loss of water question. See *Kansas Gas and Electric Co.* (Wolf Creek Station, Unit No. 1), ALAB-462, 7 NRC 320, 338 (1978), and cases cited. Generalized assertions to the effect that "more evidence is needed" are simply not enough to support a reopening of the record.³⁰

C

Only one of the contentions litigated below raised an issue concerning the adequacy of the environmental review of the instant spent fuel pool expansion proposal. TOLAC's contention 1 asserted that applicants had

First, the Colemans complain that inadequate attention has been paid to an event of incomplete drainage of the pool. Br. "Findings of Fact" at 8-9. This matter arose briefly during Board questioning at the hearing (Tr. 1428-1433), but no party pursued it further or discussed it in its proposed findings and conclusions. Consequently, the Colemans are precluded from raising the issue here on appeal (see p. 8, *supra*). We note, however, that an incomplete drainage is inherently a variation of a gross loss of water. As such, it would be reasonable to assume that, like a gross loss of water, there is no identifiable, credible mechanism for an incomplete drainage event either.

Second, TOLAC appears to argue that, in the event of a gross loss of water, the proposed increase in spent fuel storage capacity would then have a significant effect on the human environment, so as to require the preparation of an environmental impact statement. Br. at 3. NEPA, however, does not require consideration of circumstances that are "only remote and speculative possibilities." See *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972). In view of the absence of any credible mechanism for a gross loss of water, NEPA clearly does not require an EIS on the hypothesized consequences of such an unlikely event.

³⁰*Prairie Island*, ALAB-284, *supra*, upon which TOLAC relies in requesting a reopening of the record, is inapposite. That case involved "a difficult, highly technical [reactor] safety issue having many facets" — steam generator tube integrity. 2 NRC at 206. In ALAB-284, we identified five major areas of concern that warranted further evidentiary hearing (condensate demineralization, detectable leakage before tube failure, sufficiency of eddy current surveillance, monitoring of secondary water chemistry, and tube plugging criteria). Because we found (1) certain evidence inconsistent and inadequate to support that Licensing Board's decision, (2) the absence of any reference to other unfavorable evidence, and (3) new evidence not considered by the Board below, further evidentiary hearings were imperative. The denial of what has been revealed as an unnecessary analysis of oxidation propagation in the instant spent fuel pool case is in no way comparable to the acute circumstances in ALAB-284.

not given sufficient consideration to various alternatives to the pool expansion.³¹ Intervenor nonetheless now raise several arguments that relate more broadly to environmental issues, only some of which arise out of TOLAC's contention 1.

1. Although its contention referred to several possible alternatives, TOLAC asserts here on appeal only that "storage at an independent spent fuel storage installation (ISFSI) in a dry unpopulated climate was not adequately evaluated by the [applicants]." Br. at 3. As support for its view, TOLAC simply refers to unspecified direct testimony of Drs. Webb and Luchak.

TOLAC's argument is wholly without merit. The written testimony of applicants' witness, Mr. Liden, indicated that, in the absence of reprocessing (which President Carter halted in 1977) and an express agreement with Salem, storage at independent installations such as AGNS at Barnwell, S.C., GE at Morris, Ill., and NFS at West Valley, N.Y., is not available. Exhibit 2, Liden Affidavit at 10-11. Mr. Liden also averred that the economic and environmental costs of constructing an ISFSI would be greater than the reracking proposed for Salem. *Id.* at 11. The staff's environmental impact appraisal (EIA) explored numerous alternatives, including storage at both private and government-sponsored ISFSIs, and fully supported Mr. Liden's views. The EIA also noted that, apart from the greater costs associated with the construction of an ISFSI, the time necessary to build and begin operating an ISFSI (approximately five years) effectively eliminates this as a feasible alternative for applicants' approaching storage needs. Exhibit 6-C, EIA at 14-16. TOLAC points to no specific testimony on either direct or cross-examination that contradicts this, and we have discovered none ourselves.³²

In these circumstances, the Licensing Board quite properly found (12 NRC at 446)

³¹See note 4, *supra*. The Licensing Board's question concerning a hypothetical gross loss of water also injected an environmental issue into the proceeding. The Board queried whether the consequences of such an event in the pool as expanded would require evaluation in an EIS. 12 NRC at 451. The Board eventually concluded they would not (*id.* at 455, 456), and TOLAC appears to challenge this conclusion on appeal. But as we pointed out in note 29, *supra*, NEPA does not require an EIS on the hypothetical consequences of a gross loss of water.

³²Review of the testimony of Drs. Webb and Luchak, upon which TOLAC generally relies, provides a possible clue as to why TOLAC neglected to cite any portions specifically (Br. at 3). Dr. Webb's testimony did not even address the "consideration of alternatives" contention. Dr. Luchak's written testimony, which repeated much of the cost data in the staff's EIA, asserted only that "[i]t appears to be a highly feasible alternative that utilities could collectively obtain a site and construct an ISFSI." Fol. Tr. 918, Luchak Testimony at 3-4. No facts or probative matter is cited to support his sweeping statement. The remainder of Dr. Luchak's statement as well as his oral testimony were similarly generalized and failed to refute that of the applicants and staff.

that construction and use of an ISFSI would be more costly than the proposed expansion at Salem, that it would produce environmental impacts as great or greater than the proposed expansion, that it would not reduce appreciably the risk or consequences of a gross loss of water in the spent fuel pool, and that it is unknown whether an ISFSI can or will be constructed in time to be available for storage of spent fuel from Salem Unit 1 when that storage is needed.

We therefore also agree that applicants and the staff adequately considered an ISFSI as an alternative to reracking the existing pool at Salem.³³

2. The Colemans assert that the Licensing Board erred in finding, with respect to the alternative of offsite storage at other reactors, that "Hope Creek Units 1 and 2 ... are the only other nuclear facilities owned by the Licensee." 12 NRC at 447. They state that the lead applicant, Public Service Electric and Gas Co., owns a 42.5 percent interest in Units 2 and 3 of the Peach Bottom facility. Br. "Exceptions" at 1. The Colemans, however, make no attempt to argue that the challenged statement fatally impairs the Board's ultimate conclusion that offsite storage at other reactors is not a feasible alternative.

Applicants admit (Br. at 58) that PSE&G owns a portion of Peach Bottom.³⁴ But as both they and the staff point out, this minor factual misstatement provides no occasion for reversal of the Board's conclusion.

Relying on the staff's EIA, the Licensing Board found that Hope Creek has boiling water reactors (BWR) that use fuel assemblies with dimensions different from those used at the pressurized water reactors (PWR) at Salem. Thus, the racks at Hope Creek would have to be replaced for storage of Salem's spent fuel, with a resulting reduction in storage capacity. The Board also noted a government report concluding that up to 46 percent of the operating reactors in the United States will be unable to refuel between 1975-1984 unless additional spent fuel storage space is found. 12 NRC at

³³Indeed, as the Licensing Board evidently recognized (12 NRC at 457), the consideration of any alternatives was gratuitous. Sections 102(2)(C) and (E) of NEPA require consideration of alternatives only when the proposed action is a "major" one "significantly affecting the quality of the human environment," or "involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. 4332(2)(C), (E). See *North Anna*, *supra*, 11 NRC at 456-459. As we discuss below (pp. 42-46), the record shows that approval of the instant proposal does not constitute a major action with a significant effect on the environment. Moreover, no party has suggested, before either the Licensing Board or us, that the Salem pool expansion involves unresolved conflicts between alternative uses of available resources as envisioned by Section 102(2)(E).

³⁴The Licensing Board's error appears to arise from a statement in the EIA that "[t]he only other nuclear facilities owned by the licensee are the Hope Creek Units 1 and 2 currently under construction" Exhibit 6-C, EIA at 17. Although the staff submitted the EIA well before the hearing commenced, apparently no party challenged the accuracy of the statement at the hearing.

447-448. See also Exhibit 6-C, EIA at 18. Finding no evidence to the contrary, the Board concluded, in agreement with the staff, that applicants "could not prudently rely upon the Hope Creek units or any other power facility to provide additional storage when the Salem pool is filled." 12 NRC at 448 (emphasis added).

We take official notice of the fact that the reactors at Peach Bottom are, like Hope Creek, BWRs. Thus, the Board's unchallenged finding concerning the need for new racks of different dimensions in order to store Salem spent fuel at Hope Creek pertains with equal force to Peach Bottom. Similarly, the Board's finding as to the limited storage space available among reactors generally at this time perforce extends to Peach Bottom. Indeed, the Licensing Board explicitly stated that applicants could not rely on "any other power facility" for storage. *Ibid.* At worst, the Board's statement constitutes harmless error and thus gives no cause for reversal.

3. Both TOLAC and the Colemans contend generally that the Licensing Board erred in concluding (12 NRC at 456) that "[t]he grant of the license amendment requested in this proceeding is not a major Commission action significantly affecting the quality of the human environment," and thus does not require an EIS. TOLAC Br. at 4-7; Coleman Br. "Exceptions" at 2, "Conclusions" at 1. Intervenors make no real effort, however, to explain on appeal exactly why in their view approval of this proposal to expand Salem's spent fuel pool is such a "major" federal action.³⁵ TOLAC implies that the action is major because it will permit "long-term" storage of spent fuel for the duration of Salem's license. The Colemans note that the proposed license amendment will increase the capacity of the Salem pool more than fourfold. But more than the size and duration of a project must be evaluated when determining whether its federal approval constitutes a major action with a significant environmental impact.

In order to make that evaluation, the precise federal action involved must be defined.³⁶ Here the proper focus of the inquiry is the incremental effect on the environment occasioned by the proposed license amendment. *Portland General Electric Co.* (Trojan Plant), ALAB-531, 9 NRC 263, 266 n.6 (1979); *Northern States Power Co.* (Prairie Island Plant, Units 1 and 2), ALAB-455, 7 NRC 41, 46 n.4 (1978), remanded in part on other grounds, *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979).³⁷ The EIA concluded — after a detailed analysis of all aspects of the proposal, including the substantial increase in the number of assemblies it would permit and the

³⁵The exception to this statement is, as we noted earlier, TOLAC's apparent argument that the possibility of a gross loss of water makes this a major action. For the reason set forth in note 29, *supra*, we rejected this assertion.

³⁶See *Aberdeen & Rockfish R.R. v. SCRAP*, 422 U.S. 289, 322 (1975).

³⁷See note 24, *supra*.

extension of storage capability through 1993 or 1996 — 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 April 1973.” Exhibit 6-C, EIA at 27. The staff therefore determined that a full EIS need not be prepared. *Ibid.* In agreeing with this finding, the Licensing Board correctly observed, “[n]one of the testimony or cross-examination by intervenors or interested states showed that the Staff’s conclusion was incorrect, or that the evidence supporting that conclusion was inadequate.” 12 NRC at 456-457.

TOLAC, in fact, affirmatively refused to litigate in this administrative proceeding the unspecified deficiencies it perceived in the EIA (with the exception of its challenge to the adequacy of the consideration of alternatives). App. Tr. 24-27. This was so despite the fact that the Commission’s regulations clearly permit and encourage parties to challenge the admission and content of the staff’s EIA at hearing. 10 C.F.R. 51.52(d). Yet TOLAC now boldly argues that it has been deprived of its procedural rights under NEPA. App. Tr. 62. And, through this appeal, it intimates that it is finally ready to litigate still largely unidentified and unparticularized deficiencies it sees in the EIA and seeks to overturn the Licensing Board’s thorough, well-reasoned decision. The Supreme Court’s comments in *Vermont Yankee*, *supra*, 435 U.S. at 553-554, on the similar conduct of an intervenor in another NRC proceeding provide a particularly appropriate response to TOLAC:

[A]dministrative proceedings should not be a game or a forum to engage in unjustified obstructionism by making cryptic and obscure reference to matters that “ought to be” considered and then, after failing to do more to bring the matter to the agency’s attention, seeking to have that agency determination vacated on the ground that the agency failed to consider matters “forcefully presented.” In fact, here the agency continually invited further clarification of Saginaw’s contentions. Even without such clarification it indicated a willingness to receive evidence on the matters. But not only did Saginaw decline to further focus its contentions, it virtually declined to participate, indicating that it had “no conventional findings of fact to set forth” and that it had not “chosen to search the record and respond to this proceeding by submitting citations of matter which we believe were proved or disproved.”

Intervenors also show a misapprehension of the evidence upon which the Licensing Board based its conclusion that this proposal would not have a

significant impact on the environment. They believe that the Board "relied on" the *Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel*, NUREG-0575 (August 1979), and its predecessor draft statement, NUREG-0404 (March 1978). The Board, however, explicitly stated that it based its conclusion on "the record of this proceeding, particularly the evidence supporting the Staff's [EIA]." 12 NRC at 456.³⁸ Neither NUREG-0575 nor NUREG-0404 was admitted as part of the record in this case. The Board simply "note[d]" that the *staff* had published NUREG-0575 in August 1979, and the former in no way purported to rely on it. *Id.* at 457.³⁹

In our view, the Licensing Board's conclusion that approval of the Salem spent fuel pool expansion is not a major action significantly affecting the environment is fully consistent with the record. The intervenors had every opportunity to demonstrate otherwise but failed to do so. We therefore have no basis for overturning the Board's NEPA finding on that score. See *Prairie Island*, ALAB-455, *supra*, 7 NRC at 45.

4. Finally, the Colemans make oblique arguments as to the need for an environmental assessment of the alleged long-term storage of spent fuel at Salem beyond the expiration of the Unit 1 license. See Coleman Br. "Introduction" at 1, "Findings of Fact" at 1, "Exceptions" at 2.⁴⁰ Their contention 7, which the Licensing Board dismissed and later refused to reinstate, raised this precise issue. LBP-80-10, *supra*, 11 NRC at 357-338. The Board noted that the Commission was pursuing long-term on-site storage in an ongoing rulemaking and that it would be "contrary to the Commission's Policy" to entertain the Colemans' contention 7. *Id.* at 338.

³⁸The August 1979 generic EIS embodied in NUREG-0575 does not even apply to this proceeding. Instead, the January 1979 EIA addressed five factors identified by the Commission for consideration "during the period required for preparation of the generic statement." See "Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel," 40 Fed. Reg. 42801, 42802 (September 16, 1975). As the Board pointed out, none of the five factors was the object of any controversy or evidence at the hearing. 12 NRC at 457.

³⁹TOLAC suggested at oral argument (App. Tr. 22-23) that, as a matter of policy, the Commission has determined that no spent fuel pool expansion could have a significant impact on the environment. We know of no such policy, and the EIA here, which is devoted to an analysis of the particular features of the Salem pool, belies the existence of such a policy. Of course, if this policy did exist, there would have been no need for the staff to have prepared an EIA or for the Licensing Board to have made a NEPA finding in this case. Even the generic EIS, NUREG-0575, which represents final Commission action as of February 27, 1981 (46 Fed. Reg. 14506), and now applies to spent fuel pool expansion cases, states that "[b]ecause there are many variations in storage pool designs and limitations caused by spent fuel already in some pools, the licensing reviews must be done on a case-by-case basis." NUREG-0575, Vol. 1, 8-1.

⁴⁰Contrast this argument with that of TOLAC, concerning "long-term" storage for the duration of Salem's operating license. See p. 42, *supra*.

We agree. The court in *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979), specifically authorized the Commission to explore this matter in a rulemaking. Accordingly, the Commission instituted its pending "Waste Confidence" proceeding.⁴¹ The Colemans' complaints about the possible long-term storage of spent fuel at Salem thus amount to a collateral attack on that rulemaking, and we cannot properly entertain them here. *North Anna, supra*, 11 NRC at 463-465.

D

The Colemans devote most of their brief to essentially procedural objections to the conduct of the proceeding below.⁴² The relevance of any of their points to the Licensing Board's ultimate decision is not evident. More importantly, the Colemans raise these arguments for the first time on appeal; their counsel did not pursue any of these matters either during the hearing or in the Colemans' proposed findings and conclusions. Consequently, the Licensing Board had no opportunity to address their arguments. As we pointed out earlier in this opinion (see p. 8, *supra*), in the absence of "a serious substantive issue," we will not entertain arguments raised for the first time on appeal. *Hartsville, ALAB-463, supra*, 7 NRC at 348.

We have carefully considered the Colemans' myriad objections not already discussed in this opinion. We find that they raise no serious substantive issues affecting the Licensing Board's decision on either health and safety or environmental matters. Indeed, many of these objections are wholly without basis in fact or law. Moreover, we find no denial of the Colemans' procedural rights or other error requiring corrective action.

III

For the foregoing reasons, the October 27, 1980, initial decision of the Licensing Board is *affirmed*.

⁴¹TOLAC is a participant in that proceeding. App. Tr. 28.

⁴²Among these many objections are the following: "exclusion" from the record of certain letters by Robert M. Crockett (PSE&G employee), Brian K. Grimes (NRC employee), and F.P. Librizzi (NRC employee); failure of the Board to address matters discussed in a limited appearance statement by Michael DiBernardo; the Colemans' "exclusion" from an *in camera* hearing concerning proprietary information of Exxon; the Board's denial of certain of the Coleman's interrogatories; the Board and staff's "ignoring" some "reportable occurrences" at Salem in 1979 and 1980, including a leak in the spent fuel pool; and the Board's conclusion, in connection with the Three Mile Island questions it raised (12 NRC at 449), that staff testimony cured an uncertainty about the post-accident level of radiation in the TMI spent fuel pool area.

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

Before Administrative Judges:

Louis J. Carter, Chairman
Frederick J. Shon
Dr. Oscar H. Paris

In the Matter of

Docket No. 50-322 OL

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear
Power Station, Unit 1)

July 7, 1981

The Licensing Board rules on the admissibility of a contention submitted by an intervenor in this operating license proceeding, accepting the contention in part and rejecting it in part.

RULES OF PRACTICE: MOTIONS (REPLIES TO ANSWERS)

A proponent of a motion does not have the right to reply to an answer to the motion; parties who do not seek leave to file a reply are expressly denied the opportunity to do so. 10 C.F.R. § 2.730(c).

RULES OF PRACTICE: CONTENTIONS (RESPONSES TO MOTIONS TO DISMISS)

Contentions in NRC adjudicatory proceedings are like federal court complaints; before any suggestion that a contention should not be entertained can be acted upon favorably, the proponent of the contention must be given some chance to be heard in response. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 C.F.R. 521 (1979).

MEMORANDUM AND ORDER

(Ruling on Shoreham Opponents Coalition's Motion For Acceptance of Particularized Contention 19)

In response to a petition of Shoreham Opponents Coalition (SOC) filed January 24, 1980, this Board determined by Order dated March 5, 1980¹ that it was beyond its jurisdiction to suspend the construction permit for the plant. The Board also found that SOC had, with one exception, met the requirements for admission as an intervenor.

In the March Order the Board granted leave to SOC to further particularize Contention 19. A detailed discussion and our rulings on SOC's efforts to particularize are given later in this Order. Initially we shall discuss the procedural issues raised in the various pleadings.

Motion of SOC on Particularized Contention 19: Procedural Problems

On March 18, 1981, SOC filed a "Motion ... for Acceptance of Particularized Contention 19" in an effort to comply with our March Order. Long Island Lighting Company (LILCO) or Applicant) filed its answer to SOC's motion on April 2, 1981, and the NRC Staff filed its answer on April 7, 1981. Then, on April 28, 1981, SOC filed a "Response" to the answers filed by Applicant and Staff. Staff in its "... Opposition to SOC Request for Leave to File Response ...", dated April 30, 1981, urged the Board to reject SOC's "Response." Applicant made no further filing.²

SOC requests leave of the Board, pursuant to 10 C.F.R. § 2.730(c), to submit its "Response" based on what it asserts are "certain mischaracterizations and other improper arguments contained in the LILCO and Staff answers [to its motion to particularize Contention 19]" Staff argues that permission should not be granted because, if the Board grants SOC's request, Staff and Applicant would seek leave to respond; this could set up a "ping pong" effect whereby SOC might seek to reply to the "response to the reply," and so on.

We believe Staff is in error — though it may have been misled because SOC named its pleading a "motion." If it were, in fact, a motion, our practice would normally permit an answer only, and parties who do not first seek leave to file a reply are expressly denied the right to do so under 10 C.F.R. § 2.730(c). *Detroit Edison Company* (Enrico Fermi Atomic Plant,

¹"Order Ruling on Petition of Shoreham Opponents Coalition."

²Discovery has been continuing. The parties have made various other filings but none are directly relevant to the matter discussed herein.

Unit 2), ALAB-469, 7 NRC 470, 471 (1978); see also *Public Service Company of Oklahoma Associates Electric Cooperative* (Black Fox Station, Units 1 & 2), LBP-76-38, 4 NRC 435, 441 (1976). We believe, however, that the heart of this controversy was clearly illuminated by the Appeal Board in *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-565, 10 NRC 521 (1979). There the Appeal Board, in reviewing a similar problem relating to contentions, said in pertinent part:

We believe that a contention, like a complaint in federal court, is intended to reflect what a party intends to prove on the merits but not an argument as to why his pleading should be entertained over his opponent's as yet unstated objections. Thus, when a defendant moves to dismiss a complaint ... a plaintiff is — *and must be* — allowed the opportunity to respond to the motion. In this respect, regardless of how it is denominated [*E.g.*, as a 'response' or 'answer' to the contention] a suggestion by the applicant and staff that a particular contention is inadmissible ... is akin to a motion to dismiss.

... [I]f the applicant and staff are content to allow a contention to be accepted for litigation while denying its substance, no response is required and no ruling is necessary until the merits are brought up. A motion to dismiss, on the other hand, like a challenge to a contention, is followed — *after the other side is heard* — by a ruling on whether the matter will proceed. *Insofar as contentions are concerned, the intervenors must be heard in response because they cannot be required to have anticipated in the contentions themselves the possible arguments their opponents might raise as grounds for dismissing them. In this respect too, contentions are like Federal court complaints Before any suggestion that a contention should not be entertained can be acted upon favorably, the proponent of the contention must be given some chance to be heard in response.* (emphasis added; one footnote in brackets, the others omitted)

In view of the aforesaid it is, we believe, appropriate to restate the posture of this case using the correct appellations of the documents filed. On March 18, 1981, SOC filed its amended petition to intervene (the "Motion ... for Acceptance of Particularized Contention 19"). On April 2 and 7, 1981, Applicant and Staff, respectively, filed motions to dismiss in part. (Applicant's Response and Staff's Answer). On April 28, 1981, SOC filed its answer to the motions of Applicant and Staff.

We hold therefore (1) that SOC's answer entitled "Response of SOC to Answers of NRC Staff and LILCO to SOC's Motion for Acceptance of

Contention 19" is accepted as properly filed, and (2) that no further reply by Applicant or Staff is permitted since SOC's "Response" raises no new legal matters.

We turn now to the substance of SOC's amended contention.

Motion of SOC to Amend Contention 19: Consideration and Rulings

In our order of March 5, 1980, we stated with regard to the applicability of regulatory guides:

"We believe, however, that it would be appropriate for the Board to consider whether the standards or goals of *recent* Regulatory Guides have been met. SOC must, however, specify which *recent* Regulatory Guides it believes have not been met, and why it believes they should be met." (page 22, emphasis added)

Applicants, Staff, and SOC apparently have reached an impasse and are unable to agree on a definition of "recent."

The word "recent" was not intended by the Board to set a fixed date, but to mean the latest revision or most recent changes of those guides which SOC seeks to introduce. Thus, when we instructed SOC to tell why the recent Guides should be met, we expected a discussion of precisely what the latest Guides require that earlier ones did not and why such changes are necessary for operation of the Shoreham Plant. That discussion has not been provided. For most of the named Guides SOC has simply alleged, as the reason why the latest Guide must be met, that failure to do so means failure to meet the Regulation which the Guide was intended to implement. Such a statement affords neither a basis for, nor an explanation of the intervenor's reasoning. SOC's position is further weakened by the fact that Staff (the engineering group that developed these Guides) does not consider compliance with the Guides essential and so states in the standard statement which prefaces each Guide.³

The hour is late. SOC has had ample opportunity to state and restate its position. Its allegations are not a substitute for specific technical bases. With consultants of industry-wide reputation, SOC should have provided

³The statement usually reads as follows:

"Regulatory Guides are issued to describe and make available to the public methods acceptable to the NRC staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutes for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission."

more substantial arguments and particularization. We have, therefore, proceeded to analyze the individual parts of Contention 19, using as our criterion for late admissibility the following test: Has SOC stated how the recent Regulatory Guide it advocates differs from the older Guide to which Shoreham is purported to conform and why that difference is needed at Shoreham to meet NRC Regulations? That is, SOC must (1) specify the particular features of the Guide at issue and (2) show the nexus of those features to safety at Shoreham.

The requirement of greater specificity is necessary to provide a fair opportunity for other parties to learn precisely what the issues are, what proof, evidence or testimony is required to meet the issues, and what the Intervenor intends to adduce for its allegations. *In the Matter of Gulf States Utilities Company* (River Bend Station, Units 1 & 2), ALAB-444, 6 NRC 760, 771 *et seq.* (1977). The parties are invited to review the teaching of the Appeal Board in that opinion. With regard to newly issued guides, the Board above stated, "To bring newly issued regulatory guides into play, it would have to be shown, *e.g.*, that the means adopted by the applicant (as reflected in the application) for satisfying a regulatory requirement are either not efficacious or significantly less satisfactory than those recommended in the guide." *Id.* at 773.

In the "motion" under consideration SOC submitted the following:

REVISED SOC CONTENTION 19

19. Application of Regulatory Guides

A major contributing factor in the TMI-2 accident has been that the old operating plants have not been required by the NRC Staff (Staff) to be in compliance with current regulatory practices (*i.e.*, Regulatory Guides, Branch Technical Positions, and Standard Review Plans). The TMI-2 accident has also demonstrated that the current regulatory practices, practices similar to those being applied by the Staff in their safety evaluation of the Shoreham Nuclear Station, were in a number of cases (*i.e.*, hydrogen generation, radiation shielding, source terms, and single failure criterion for example) not suitably conservative to properly protect the health and safety of the public.*

*A number of Regulatory Guides are related to the TMI issues and, the parties agree, might be more appropriately considered as part of SOC's TMI contention. SOC reserves the right to particularize a contention addressing the following Regulatory Guides as part of that TMI contention: 1.7, 1.26, 1.29, 1.52, 1.53, 1.98, 1.109-1.113.

Intervenors contend that the Regulatory Staff has not required that the Applicant incorporate measures to assure that the Shoreham Nuclear Station conforms with the standards or goals of safety criteria contained in recent NRC Regulatory Guides and as a result, the Regulatory Staff has not required that Shoreham structures, systems, and components be backfitted as required by 10 C.F.R. 50.55a, 10 C.F.R. 50.57, and 10 C.F.R. 50.109 with regard to: [see below]

In addition to the foregoing there were numerous subparts. The Board's specific determinations on sub-parts of the particularized Contention 19 follow the statement of each:

A. (Reg. Guide 1.2) The Applicant's general description of the pressure vessel fails to specifically describe how the Shoreham pressure vessel will behave in a non brittle manner under loss-of-coolant conditions and therefore does not comply with Appendix A, GDC 31.

The Intervenors have not stated what the required features of the specific Guide are nor how those features contribute to safety. The sub-part is rejected.

B. (Reg. Guide 1.6) The Applicant's design fails to provide adequate independence between redundant power as required by GDC 17 in that automatic transfer of power sources is provided for critical a-c valves in the RHR system (LPCI) and the reactor recirculation loops.

SOC has identified that feature of the latest Reg. Guide to which it believes Shoreham should conform. We will allow this subpart as a matter in contention with the understanding that SOC will show at the evidentiary hearing why it is necessary to safety. Hereafter this subpart shall be designated as Contention 19(a).

C. (Reg. Guide 1.7) The Applicant's proposed post-accident hydrogen control management is inadequate in that the Applicant complies with the measures described in Rev. 0, rather than Rev. 2, of the Guide and therefore does not comply with 10 C.F.R. 50.44.

This subpart duplicates, in large measure, Contention 12, which is still to be particularized by SOC. The subpart is rejected for that reason.

D. (Reg. Guide 1.8) Inadequacies in personnel qualification and training were noted by various reviewers of the TMI-2 accident. ANSI Std. 3.1-1978, the successor to ANSI 18.1-1971, is undergoing extensive revision in an effort to provide upgraded requirements for personnel

qualification and training. The Applicant complies with the 1971 version of the Guide (Rev. O) and the ANSI Standard, rather than the measures described in the February, 1979 and September, 1980 proposed Rev. 2 to the Guide.

A mere statement of a need for revision in training is not sufficiently particular so as to permit the Board to evaluate the factual issues involved. This subpart is rejected.

E. (Reg. Guide 1.9) The Applicant fails to describe the degree of compliance to Rev. 2 of the Guide addressing the selection, design, and qualification of diesel-generator units used as standby (onsite) electric power systems with regard to those requirements of IEEE Std. 387-1977, "IEEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies"; IEEE Std. 308-1974, "IEEE Standard Criteria for Class IE Power Systems"; IEEE Std. 323-1974, "IEEE Standard for Qualifying Class IE Equipment"; and IEEE Std. 344-1975, "Recommended Practices for Seismic Qualification of Class IE Equipment" included in the regulatory position of the guide. Rather, the Applicant commits to the diesel generator requirements described in Rev. O of the Guide dated March, 1971.

Since neither Applicant nor the Staff object, this subpart is accepted. Hereafter this subpart shall be designated **Contention 19(b)**.

F. (Reg. Guide 1.11) The instrument lines penetrating the primary reactor containment comply with Rev. O of the Guide. The Applicant has failed to address supplemental guidance for backfitting considerations presented in Rev. 1 of this Guide dated February, 1972.

This subpart is rejected because it fails to raise an issue of fact and lacks the requisite specificity and nexus.

G. (Reg. Guide 1.13) The spent fuel storage design basis has not been updated by the Applicant to comply with the regulatory position of Rev. 1 of the Guide dated December, 1975 and therefore does not comply with Appendix A, GDC 61 with regard to dropping of heavy loads, tornado missiles, and single failure-proof cranes.

We will admit this subpart to the extent that it alleges deficiencies in the fuel pool design with respect to providing protection against single failures in the crane, dropping of heavy loads and tornado missiles. Hereafter it shall be designated **Contention 19(c)**.

H. (Reg. Guide 1.23) The Applicant has failed to upgrade the meteorological measurement program to comply with the regulatory position of Draft Guide 1.23 dated September, 1980, and therefore does not comply with 10 C.F.R. 100.10(c)(2), 10 C.F.R. 50.36a(a)(2), Appendix I, and Appendix E in order to adequately measure and document basic meteorological data and to estimate potential radiation doses to the public.

This Reg. Guide, in draft form, is open for comment and under consideration by the Commission. Consequently it is not relevant at this time. This subpart is denied without prejudice to SOC submitting a new contention with respect to meteorological monitoring if Reg. Guide 1.23 is promulgated prior to the close of this record.

I. (Reg. Guide 1.26 and 1.29) The Applicant's general list of quality group classifications for safety-related components in FSAR Table 3.2.1-1 does not fully comply with the classifications contained in Rev. 3 of the Guide 1.26 dated February 1976 for safety-related components containing water, steam, or radioactive materials and therefore does not comply with Appendix A, GDC 1, and 10 C.F.R. 50.55a. The seismic design classifications, also generally listed by the Applicant in FSAR Table 3.2.1-1, do not comply with Rev. 3 of the Guide dated September 1978 and therefore do not comply with Appendix A, GDC 2 and 10 C.F.R. 100, Appendix A, with regard to control room habitability and radioactive waste systems.

This subpart lacks specificity and nexus and is rejected.

J. (Reg. Guide 1.31) The control of ferrite content in stainless steel weld metal by the Applicant complies with Rev. 1 of the Guide rather than Rev. 3 of the Guide dated April, 1978 with regard to verification of delta ferrite content of filler materials and to examination for ferrite content by a magnetic measuring instrument and therefore does not comply with Appendix A, GDC 1 and 14.

This subpart appears to cite the specific features, viz., the control of ferrite content in weld metal and the verification of delta ferrite content of filler materials, in sufficient detail to allow the parties to address themselves to it. SOC will be expected at the hearing to show the exact relevance to safety. This subpart is allowed and will be designated hereafter as Contention 19(d).

K. (Reg. Guide 1.32) The Applicant's criteria for safety-related electric power systems is based on IEEE Std. 308-1971 (Rev. 0 of Guide)

rather than IEEE Std. 308-1974 (Rev. 2 of Guide dated February 1977) and therefore does not comply with Appendix A, GDC 17 and 18, with regard to the off-site network, availability of offsite power, and battery charger supply requirements.

This subpart is rejected as lacking in specificity and nexus.

L. (Reg. Guide 1.44) The Applicant's control of the use of sensitized stainless steel does not fully comply with the regulatory position of the Reg. Guide and therefore does not comply with Appendix A, GDC 1 and 4.*

*SOC reserves the right to reparticularize this contention based on the new NRC position described in NUREG-0313 (Rev. 1).

This contention lacks specificity and nexus. The Board does not grant the right to SOC to reparticularize this contention. What Intervenor refers to as the new NRC position described in NUREG-0313 (Rev. 1) has been available since July 1980 and Intervenor has had sufficient time to complete this contention. We see no grounds to allow further time.

M. (Reg. Guide 1.48) The design limits and load combinations utilized by the Applicant for seismic category I fluid system components has not been analyzed and documented in accordance with Rev. 0 of the Guide dated May, 1973 and therefore does not comply with Appendix A, GDC 2.

This subpart lacks specificity and nexus and hence is rejected.

N. (Reg. Guide 1.52) The Applicant's proposed post-accident atmosphere clean-up complies only partially with Rev. 0 of the Guide (Reactor Building Standby Ventilation System and Control Room Air Conditioning filter trains are not removable as single units) rather than Rev. 2 of the Guide which was issued in 1978 prior to the TMI-2 accident and therefore the Applicant has failed to satisfy the habitability requirements of Appendix A, GDC 41, 42, 43, and 61.

This subpart notes a specific lack in Rev. 0 of the Guide and indicates it would affect control-room habitability. It is accepted for litigation. Hereafter it will be designated **Contention 19(e)**.

O. (Reg. Guide 1.56) The criteria for maintenance of water purity in the reactor coolant by the Applicant is in accordance with Rev. 0

rather than Rev. 1 of the Guide and therefore does not comply with Appendix A, GDC 13, 14, 15 and 31 in that the Applicant has failed to document the following measures:

1. Describe how resin transfers will be monitored in the reactor water cleanup system.
2. Table 5.2.3-2 of the FSAR specifies the conductivity and chloride concentration limits for the reactor water to be 2 umho/cm and 0.1 ppm, respectively, during reactor operation up to 10 percent of rated power. Table 1 of Reg. Guide 1.56, Rev. 1, specifies the same limits, but for power operation at steaming rate less than one percent of rated steam flow. The Applicant should verify that steaming rates will be less than one percent of the rated steam flow at power levels up to 10 percent of the rated power.
3. Describe and summarize the procedures for determining the pH, chloride concentrations, and conductivity in the reactor vessel water (regulatory position C.6 of Reg. Guide 1.56, Rev. 1).
4. The FSAR does not indicate that chemical analysis for suspended impurities will be performed in accordance with regulatory position c.1 of Reg. Guide 1.56, Rev. 1. The Applicant should verify that such analyses are to be performed and state the sampling and analysis frequency and established limits and the basis for such limits.
5. Describe the water chemistry control program to assure maintaining the condensate conductivity within the limits of Table 2 of Reg. Guide 1.56, Rev. 1. Include conductivity meter alarm set points and the corrective actions to be taken when the limits of Table 2 are exceeded.

While this subpart does not establish a clear nexus to safety, it points up the specific differences between earlier guides and the version SOC recommends. We will accept it with the proviso that SOC is expected to show at the hearing the effect on safety resulting from the Guide's alleged deficiencies. Hereafter this subpart will be designated **Contention 19(f)**.

P. (Reg. Guide 1.60 and 1.61) The design response spectra for the seismic design of Shoreham [are] not based on the standards in the Reg. Guide and, thus, the spectra [have] not been demonstrated to be appropriately conservative and therefore [do] not comply with Appendix A, GDC 2, and 10 C.F.R., Part 100, Appendix A. In addition, the

Applicant did not utilize the Reg. Guide 1.61 value of damping (4%) for the OBE analysis of Category I reinforced concrete structures, but rather utilized a higher value of damping (5%).

This subpart specifically criticizes non-conservative seismic design spectra and damping factors. The nexus of safety at Shoreham is self-evident. It is accepted and will be designated **Contention 19(g)**.

Q. (Reg. Guide 1.63) Shoreham has installed General Electric containment electrical penetrations which utilize epoxy as a pressure sealant and as an insulator. The GE-furnished epoxy has cracked and peeled due to aging and has reverted due to moisture absorption and therefore does not comply with Rev. 0 of the Guide. In addition, the electrical penetrations at Shoreham have been qualified to Rev. 0 of the Guide dated November, 1973 rather than the current revision (Rev. 2 dated July, 1978) of the Guide.

This subpart specifically mentions use of a pressure sealant which has deteriorated because it did not comply with Rev. 0 of the Guide. It is accepted and will be designated **Contention 19(h)**.

R. (Reg. Guide 1.68) The preoperational and initial startup test program described by the Applicant in Section 14 of the FSAR fails to document and describe how the Shoreham plant's initial test program will meet the measures described in Rev. 2 of the Guide dated August, 1978, particularly with regard to assuring compliance with the principal design criteria contained in Appendix A to 10 C.F.R., Part 50. Rather, the Shoreham program is based on the recommendations in Rev. 0 of the Guide published in November, 1973. The Applicant also fails to document in the FSAR the specific measures being implemented at Shoreham to meet the requirements of Reg. Guide 1.68.1 dated January 1977 for testing of feedwater and condensate systems and to meet the requirements of Reg. Guide 1.68.2 dated July 1978 for testing of remote shutdown capability.

This subpart lacks specificity and nexus. It is rejected.

S. (Reg. Guide 1.75) The design of the Shoreham electrical system fail[s] to comply with the regulatory position of Reg. Guide 1.75 for physical independence of electrical systems and therefore does not comply with 10 C.F.R., 50.55a, and Appendix A, GDC 3. 17, and 21. To minimize the potential for physical systems interactions, the electrical systems at Shoreham should be designed in complete

compliance with the measures in Rev. 2 of the Guide dated September, 1978.

SOC has not specified what features of the latest revision of Reg. Guide 1.75 are needed. The subpart is rejected.

T. (Reg. Guide 1.78 and 1.95) Main control room habitability measures during a hazardous chemical release have not been demonstrated by the Applicant in accordance with these Guides and therefore does not comply with Appendix A, GDC 4 and 19, in that the Applicant has not adequately documented the basis for the conclusion that there are no significant quantities of chemicals within five miles of the site.

This subpart is not a model of specificity. It does, however, state that the control room may be made uninhabitable because of the release of dangerous chemicals. We will admit it, confining it to the question of whether compliance with the latest Reg. Guide is necessary to forestall such a hazard. The subpart will be designated hereafter as **Contention 19(i)**.

U. (Reg. Guide 1.80) The preoperational testing of instrument air systems as required by Appendix A, GDC 2, and Appendix B, Criterion XI has not been demonstrated as prescribed in this Guide.

This subpart lacks specificity and nexus and is rejected.

V. (Reg. Guide 1.89) The Applicant has failed to adequately demonstrate qualification of Class IE electrical equipment as described in this Guide, as specified in IEEE Std. 323-1974, and therefore does not comply with Appendix A, GDC 1, 2, and 4, and Appendix B, Criterion III, with regard to deteriorating effects of component aging, accuracy of instrument setpoints, test documentation requirements, and tolerance margins.*

*SOC reserves the right to reparticularize this contention based on the Applicant's response to the new NRC position described in NUREG-0588.

This subpart covers too broad an area to be admissible. As to the "reservation" SOC expresses in its footnote, specific issues arising out of any recently issued Staff document may, of course, be considered for admission subject to the five factors of 10 C.F.R. § 2.714(a)(1).

W. (Reg. Guide 1.92 and 1.122) The Applicant has failed to adequately demonstrate that the methods utilized by the Applicant for combining

modes and spatial components in seismic response analysis presented in Section 3.7 of the FSAR are suitably conservative in all cases when compared with the methods described in Rev. 1 of Reg. Guide 1.92 issued in February 1976, and therefore does not comply with Appendix A to Part 50, GDC 2, and Paragraph (a)(1) of Section VI of Appendix A to Part 100. Further, the floor design response spectra developed by the Applicant has not been documented for compliance with paragraph B.3 of Reg. Guide 1.122, Rev. 1 dated February 1978.

This subpart lacks specificity and nexus. It is rejected.

X. (Reg. Guide 1.96) The design of the main steam isolation valve leakage control system has not been adequately demonstrated by the Applicant to be in accordance with the measures described in Rev. 1 of this Guide dated June, 1976, and therefore does not comply with Appendix A, GDC 54 with regard to the acceptability of the alternative control or limitation methods proposed by the Applicant and to the adequacy of the leakage control system interlocks.

This subpart lacks specificity and nexus. It is rejected.

Y. (Reg. Guide 1.100) The Applicant has failed to commit to conducting a seismic qualification program for Class IE electrical equipment as prescribed by Rev. 0 and Rev. 1 of this Guide and therefore does not comply with Appendix A, GDC 2 and Appendix B, Criterion III, with particular regard to the testing program, including multi-axis multi-frequency testing and the effects of aging prior to testing.

This subpart specifically mentions deficiencies in the seismic testing of Class IE equipment. It is accepted and will be designated **Contention 19(j)**.

Z. (Reg. Guides 1.109 through 1.113) The Applicant has not demonstrated that the dose and release measures prescribed in these five Guides (Reg. Guide 109, Rev. 1; Reg. Guide 110, Rev. 0; Reg. Guide 111, Rev. 1; Reg. Guide 112, Rev. 0; Reg. Guide 113, Rev. 1) have been utilized in the Staff's radiation effects analysis and therefore does not comply with Appendix I to 10 C.F.R., Part 50.

This subpart lacks specificity and nexus. It is rejected.

AA. (Reg. Guide 1.115) The turbine orientation with respect to safety-related structures is unfavorable in the Shoreham design and thus results in additional probability of a turbine missile accident endanger-

ing public health and safety. The Applicant's design for protection against low-trajectory turbine missiles, as described in Section 10.2.3. of the FSAR, is not in conformance with the latest procedures outlined in Rev. 1 of this Guide dated July, 1977 and therefore does not comply with Appendix A, GDC 4.

This subpart specifically mentions turbine orientation and its effect on probability of a low-trajectory turbine missile accident. It is accepted and will be designated **Contention 19(k)**.

BB. (Reg. Guide 1.116) The Applicant has not documented the extent to which the construction Q.A. program complies with the measures described in this Guide (ANSI Std. N45.2.8-1975 and 1978) concerning installation, inspection, and testing of mechanical equipment and systems, and therefore does not comply with 10 C.F.R., Part 50, Appendix B.

This subpart lacks specificity and nexus. It is rejected.

CC. (Reg. Guide 1.118) The Applicant and Staff have not adequately documented the extent to which the periodic testing of electric power and protection systems complies with Rev. 2 of this Guide dated June, 1978 and therefore does not comply with Appendix A, GDC 18 and 21.

This subpart lacks specificity and nexus. It is rejected.

DD. (Reg. Guides 1.124 and 1.130) The Applicant has failed to document in Sections 3.7, 3.8, and 3.9 of the FSAR that the design limits and loading combinations for Class 1 linear type component supports comply adequately with the regulatory position of Rev. 1 of Reg. Guide 1.124 dated January, 1978 and therefore does not comply with Appendix A, GDC 2. Similarly, the Applicant has also failed to document how the service limits and loading combinations for Class 1 plate-and-shell type component supports comply with the Subsection NF requirements as prescribed in Reg. Guide 1.130.

This subpart lacks specificity and nexus. It is rejected.

EE. (Reg. Guide 1.125) The Staff has failed to document the extent to which physical models for design of hydraulic structures and systems, such as the intake structure and diffusers, described in Rev. 1 of this Guide dated October, 1978 were assessed for Shoreham.

This subpart lacks specificity and nexus. It is rejected.

FF. (Reg. Guide 1.126) The Applicant and Staff have failed to document the extent to which the General Electric model and related statistical methods for analysis of fuel densification complies with the measures presented in Rev. 1 of this Guide and therefore does not comply with Appendix A to 10 C.F.R., Part 50.

This subpart is vague and overly terse. We have, however, examined the guide which it references, and we are led to observe:

1. The guide supplies late models for approximating fuel densification, the models being considerably more sophisticated than those previously used.
2. Use of the simple models might lead a designer to believe that 10 C.F.R., Part 50, App. K would be met throughout the reactor's life when in fact it might not be.
3. The Staff apparently views the guide as virtually universally applicable (Cf. Section D of the Guide).

We will therefore admit this subpart and accept evidence on whether Shoreham meets the guide or has proposed equally effective measures for assuring that fuel densification does not, in the course of operation, put the Shoreham reactor into a condition where its ECCS system no longer meets App. K. The subpart hereafter will be designated **Contention 19(1)**.

GG. (Reg. Guides 1.128 and 1.129) The Applicant and Staff have failed to document the extent to which the lead storage batteries comply with the current requirements presented in Rev. 1 to the two Guides. Further, in Table 8.1.7-1 and Section 8.3.2.1.2 of the FSAR, the Applicant commits to meet the requirements of IEEE Std. 450-1972 rather than the requirements of the 1975 version of the standard prescribed by the two guides and therefore does not comply with Appendix A, GDC 1 and 2.

This subpart lacks specificity and nexus. It is rejected.

HH. (Reg. Guide 1.139) The Applicant and Staff have failed to document the degree of compliance with the guidance for residual heat removal systems contained in the May, 1978 version of the draft Guide and therefore does not comply with Appendix A, GDC 19 and 34, with particular regard to the equipment to be utilized and qualified to bring the plant to a cold shutdown condition and to the testing of safety relief valves.

This subpart lacks specificity and nexus. It is rejected.

II. (Reg. Guides 1.140, 1.141, 1.143, 1.145) The Staff has failed to adequately document and confirm the degree to which the NRC review utilized the criteria contained in these four Guides (Reg. Guide 1.140, October, 1979; Reg. Guide 1.141, April, 1978; Reg. Guide 1.143, October, 1979; and Reg. Guide 1.145, August, 1979).

This subpart lacks specificity and nexus. It is rejected.

JJ. (Reg. Guide 1.144) The Applicant has failed to document the extent to which the auditing of the QA program during construction conforms to the measures stated in Rev. 1 of the Guide dated September, 1980, and therefore does not comply with Criterion XVIII of Appendix B to 10 C.F.R., Part 50.

This subpart lacks specificity and nexus. It is rejected.

ORDER

For all the foregoing reasons and based upon a consideration of the entire record in this matter, it is this 7th day of July 1981

ORDERED

That SOC's particularized Contention 19, including the subparts renumbered herein as Contention 19(a) through 19(1) is accepted for litigation. All other subparts proposed in SOC's particularization are rejected.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Louis J. Carter, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Michael A. Duggan
Robert M. Lazo
Ivan W. Smith, Alternate

In the Matter of

Docket No. 50-389A

**FLORIDA POWER &
LIGHT COMPANY**
(St. Lucie Plant, Unit No. 2)

July 7, 1981

The Licensing Board in this antitrust proceeding permits the resumption of discovery, establishes a schedule for the submission of briefs on various questions and matters identified by the Board, and schedules two prehearing conferences to consider those questions and matters.

MEMORANDUM AND ORDER

**CONCERNING FLORIDA POWER & LIGHT COMPANY'S
MOTION FOR RESUMPTION OF DISCOVERY, FLORIDA
CITIES' MOTION FOR SPECIAL PROCEDURES, FLORIDA
POWER & LIGHT COMPANY'S MOTION TO DEFER
CONSIDERATION OF MOTION FOR SUMMARY DISPOSITION
AND PARSONS AND WHITEMORE, INC.'S PETITION TO
INTERVENE**

I. MOTION TO RESUME DISCOVERY

On June 12, 1981, Florida Power & Light Company (FPL) moved to resume discovery. FPL stated that it expects to load fuel in the St. Lucie facility in October of 1982 and that Florida Cities (Cities) have not stipulated that it may load fuel pending the outcome of this proceeding. Consequently, FPL is concerned about possible delay of the opening of its power plant and requests that discovery be resumed.

In its answer of June 22, 1981, Cities urge that "the motion to complete discovery must be considered in light of other motions now before this Board." In particular, they request that discovery be delayed "pending meeting of counsel to limit the issues." To do otherwise, Cities argues, would cause unnecessary expense and delay. They also argue that further discovery should be permitted only under firm deadlines so that discovery will not continue indefinitely into the future. They suggest that a pretrial conference be convened prior to the resumption of discovery.

We grant FPL's motion to resume discovery. The possibility of delay in commencing the operation of St. Lucie outweighs the interim inconvenience and delay which Cities may experience while we gain increased control over the discovery process. Although we accept — for reasons stated below — Cities' suggestion that we hold a conference for the purpose of limiting issues, limiting further discovery, and setting discovery deadlines, we will not suspend discovery while the work of the conference is being finished.

II. MOTION FOR SPECIAL PROCEDURES

A. Position of Cities

Florida Cities filed a "Motion to Establish Procedures," on May 27, 1981. That motion contains several independent suggestions. First, Cities move for summary judgment pursuant to 10 C.F.R. § 2.749(b). They claim that the merits of the dispute have been resolved by the decisions in *Gainesville Utilities Department v. Florida Power & Light Company*, 573 F.2d 292 (5th Cir.), cert. denied, 439 U.S. 966 (1978) and *Florida Power & Light Company*, Opinion Nos. 57 and 57-A, 32 PUR 4th 313,340 (Federal Energy Regulatory Commission, 1979). Cities also claim that the discovery process has developed conclusive evidence, included in their motion, establishing the existence of a situation inconsistent with the antitrust laws.

Cities has also asked that we bifurcate the proceedings by concentrating on the merits of the case and reserving issues of relief for later. Cities argue that this would be expeditious because the parties could be expected to settle relief issues after the merits are resolved.

Finally, Florida Cities have asked that a prehearing conference be convened pursuant to 10 C.F.R. § 2.751a. The purpose of such a conference would be to limit the scope of further discovery and establish a discovery schedule.

B. Position of FPL

FPL has requested relief from the obligation to respond to Cities motion for summary judgment. It argues that "discovery has not yet progressed to

the point where FPL should be required to respond to a motion which, on its face, seeks disposition of all issues in the case other than relief." It also states that "it is unlikely that anything useful can be accomplished by consideration of the motion in its present form, particularly at a time when issues have not been clearly defined." FPL then points to a number of alleged defects in Cities' filing, including its inclusion of "sweeping, highly argumentative generalizations" and its alleged resemblance to a trial brief rather than a motion for summary disposition.

FPL urges that before it responds to Cities motion, Cities must submit a "clear and unambiguous statement of the issues and a specific statement of the additional relief which they seek."

C. Conclusion

We find considerable merit in arguments presented by both parties, and we have attempted to find a procedural solution which meets the needs of both.

FPL is correct in criticizing Cities motion for its lack of clarity. In its present form, we have had special difficulty in determining what issues Cities feels have been determined by previous judicial decisions and what issues have been determined as a result of discovery. In addition, Cities' motion is a narrative that does not consistently relate its allegations to a theory of recovery, garnered from previously decided cases.

However, we find that Cities motion was properly filed under § 2.749 and FPL has not suggested any authority for the proposition that it need not respond to a summary judgment motion either because it is not clearly written or because FPL would prefer to respond at a later time. Indeed, our evaluation of the current status of this case persuades us that a response to the motion could serve to crystalize the issues. Futhermore, we have resolved the apparent lack of clarity in Cities' motion by framing a series of questions which can serve as a framework for FPL's response and for the prehearing conference needed to discuss the motion and to guide the discovery process to a fair and efficient conclusion. (See Table 1.)

1. Board Questions

The framework we are suggesting for FPL's response should make it easier for it to respond to the Board's concerns; however, it does not relieve it of the obligation to admit or refute Cities allegations. While this may be cumbersome because of the form in which the facts are presented, FPL has already been granted one extension of time within which to respond and this order will provide further extension of time.

Since FPL has not completed its discovery, it may respond to factual allegations by indicating that certain facts may be refuted as the result of

TABLE 1

SUMMARY JUDGMENT QUESTIONS

Collateral Estoppel

(1) How are these proceedings affected by *Gainsville Utilities Department v. Florida Power & Light Company*, 573 F.2d 292 (5th Cir.), cert. denied, 439 U.S. 966 (1978) and *Florida Power & Light Company*, Opinion Nos. 57 and 57-A, 32 PUR 4th 313, 340 (Federal Energy Regulatory Commission, 1979)?

(2) Should the market definitions contained in *Gainsville* and *Florida Power & Light* bind us in this proceeding? (See FERC memorandum opinion at 11-13.)

(3) Is it necessary in this proceeding to determine whether there is a separate market for nuclear power?

Factual Issues

(4) To which of Cities assertions is FPL willing to stipulate?

(5) Which of Cities assertions does FPL believe to be rebutted by evidence that is already available to it? What evidence?

(6) Which of Cities assertions does FPL believe it can rebut through discovery it has not yet completed? (Please present a discovery plan indicating with particularity the issues to be covered by remaining discovery and the persons to whom it will be addressed.)

(7) Which of Cities assertions, whether or not they have been stipulated to or challenged, are considered irrelevant by FPL? Why are they considered irrelevant?

Relief

(8) Specifically, what additional relief does Cities seek?

(9) What are FPL's current policies concerning wholesaling, interconnection, wheeling, sales of unit power, and sales of interests in the St. Lucie plant to Cities?

Scheduling

(1) What is a reasonable schedule for the completion of discovery, including estimates of reasonable time periods in which others may be expected to respond to discovery requests which you expect to make?

(1) What special rules for this proceeding could expedite discovery or otherwise hasten its conclusion?

further discovery. However, such assertions should not be broad or sweeping. FPL should clearly indicate the questions it will explore in further discovery and should indicate the inquiries or category of inquiries which it believes will permit it to challenge Cities allegations. It should also indicate to whom those inquiries will be addressed.

Cities also should answer Board questions which are appropriate for it. This will help to crystallize the issues. Since some questions also require the parties to set forth their views concerning relief and concerning their present policies, answers to the Board's questions may improve the prospects for settlement.

2. Conference on Summary Judgment Issues

Because of the complexity and importance of the issues, we are convening a conference for the purpose of oral argument concerning the Board's questions. *See* 10 C.F.R. § 2.718(h). No later than ten days prior to the conference, parties may file written motions to add additional questions to the agenda. Replies to the required filings or to motions to add questions may be made in writing, providing that they are served on the parties and on the Board no later than the day of the conference. Responses also may be made orally at the conference.

It is anticipated that the parties will be permitted 15 minute opening statements and that they will then address specific questions asked by the Board or added to the agenda. The Board will fix a specific time limit for each question and parties will be permitted to exceed that limit only for good cause. Although the conference has been set for two days, every effort will be made to conclude it sooner. However, if speed proves impossible, the parties should be prepared for extended sessions.

III. Intervention of Parsons & Whitemore, Inc.

On April 24, 1981 Parsons & Whitemore, Inc. and Resources Recovery (Dade County), Inc. (hereafter "RRD") petitioned to intervene in this proceeding. Since that time, FPL has taken a variety of steps in opposition to that petition. FPL's most recent step, taken on June 26, 1981, was to file a "Partial Response" to the Petition for Leave to Intervene.

A. Specificity of RRD's Allegations

RRD's petition for Intervention incorporated its earlier petition to intervene in the Operating License proceeding for St. Lucie 2. In that document, RRD explained that:

Petitioners seek to intervene ... for the limited purpose of assisting the Licensing Board and the Commission to evaluate fully the consequences of implementing Section X of the proposed Settlement Agreement. In particular, Petitioners wish to be heard as to Section X's detrimental impact on the PURPA rights *and competitive interests* of Petitioners and other similarly situated Qualifying Facilities.

[Emphasis added.] In its brief in support of its petition in the operating license proceeding, RRD shows knowledge of the antitrust issues in this proceeding. It also indicates its support for the allegation that a situation inconsistent with the antitrust laws exists. (See, especially, page 12 of the "Brief.") Furthermore, it sets forth in detail actions of FPL which it contends are violations of the Public Utilities Regulatory Policies Act of 1978 (PURPA) and contends that "FP&L has used the settlement process as part of a calculated effort to diminish qualifying facilities' benefits under PURPA, thereby *weakening them competitively*." [Emphasis added.]

Under these circumstances, we are unable to accept FPL's argument that RRD "fails utterly to allege a situation inconsistent with the antitrust laws with the specificity required by NRC decisions...." (Partial Response of FPL, at 2.) In particular, we interpret RRD to be alleging that FPL refused to grant RRD its PURPA rights, thereby committing an act which was inconsistent with the antitrust laws. Unlike the circumstances in *Kansas Gas and Electric Company and Kansas City Power and Light Company (Wolf Creek Generating Station, Unit No. 1)*, ALAB-279, 1 NRC 559 (1975), we already have a proceeding in which it is alleged that the issuance of an operating license would maintain a situation inconsistent with the antitrust laws; and this specific allegation (buttressed by legal citations supporting the existence of such a situation) should be interpreted in light of those other, pending allegations. We also are aided in accepting the specificity of this contention because, unlike *Wolf Creek*, acceptance of this contention would add to an existing proceeding rather than providing grounds for an entirely new proceeding.

B. Good Cause for Late Intervention

FPL also contests the Intervention petition because it fails to meet the intervention criteria of 10 C.F.R. § 2.714(d) or the late intervention criteria of § 2.714(a)(1). It asserts that petitioner's showing of "good cause" is defective, that its rights can be protected in other proceedings, that its concern about purchasing power and gaining access to transmission facilities is not related to the possible effect of St. Lucie on competition, and that its participation would delay the proceeding.

C. Cognizable Interest to Support Intervention

Although we have delayed our discussion of FPL's principal argument concerning RRD's petition, we have not overlooked it. FPL contends that RRD lacks standing in this proceeding because RRD does not own the PURPA facility for which it is asserting PURPA rights and with respect to which it is alleging anticompetitive practices.

1. FPL's Allegations

The facts which FPL alleges are complex, and they could become more complex if we grant FPL's pending motion to discover additional facts concerning RDD's allegation that it owns the PURPA facilities. Since FPL's allegations are presented clearly and economically in its brief, we have decided to use the following extensive quotation (with footnotes and some parenthetical expressions deleted) to present the allegation:

Petitioner's assertion of interest in any licensing proceeding concerning St. Lucie Unit No. 2 rests on its representations to the effect that it lawfully owns and controls a solid waste processing facility in Dade County, Florida, as well as an electrical generator which will produce electricity from steam raised by the solid waste facility....Petitioner also alleges that it has sought assurance from FPL that it will transmit electricity for Petitioner to potential customers other than FPL.

What Petitioner has failed to disclose to the Commission is that contracts are in existence which defeat any legal right on Petitioner's part to title to the electric generator and to any right, title, or interest in the electric output from the facility. What follows is a brief account of the pertinent facts.

On May 11, 1976 the Black Clawson Parsons-Whittemore Organization submitted a "Proposal" to Metropolitan Dade County for a "Resource Recovery Plant." The Proposal encompassed the construction of a solid waste processing facility (SWPF) which would be owned by the County and operated by the contractor for an agreed upon fee, and an electrical generation facility (EGF) which would be owned and operated by FPL....

Ultimately, these arrangements became discrete formal contractual commitments, covering the SWPF and the generating facility, respectively. In the contract relating to the SWPF, Petitioner, through one of its subsidiaries, agreed to build the SWPF and vest title and ownership in it to Dade County....Even that contract, however, contains provi-

sions establishing that the electrical generating facility is to be owned and operated by FPL.

This commitment to vest ownership of the electric generating facilities in FPL was sealed by a contract between FPL and Dade County, executed in late 1977 [the EGF Agreement]. That contract provides that upon completion of construction and after certain technical tests have been satisfactorily completed, but before any electric energy has been produced by the facility, Dade County will transfer to FPL the title to the electric generator and those directly associated transmission lines required to connect the electric generator to the FPL grid. Thereafter, FPL will own and operate the electric generators and associated transmission facilities.... [T]he contract reflects that Dade County contemplates holding sufficient title to the site, the electric generator, and the transmission facilities to permit the County to perform unconditionally its obligations to transfer to FPL ownership of such facilities and a lease-hold interest in the underlying real estate.

Moreover, FPL has now been able to obtain from Dade County a copy of a "Restated Assumption Agreement." By that contract, Petitioners agree to assume all of the principal obligations of Dade County under its contract with FPL....

* * *

Under the Restated Assumption Agreement, Petitioner, by assuming the obligations of Dade County, has committed to vest in FPL the ownership and operation of the electric generating facility, and has itself confirmed that FPL has the valid legal right to the generating facility and its output. Yet it is that output which Petitioner now seeks to appropriate, in derogation of the rights of FPL (and the citizens of Dade County as well).

At the heart of the matter is the contractual dispute between Petitioner and Dade County. According to a Complaint filed by Dade County in the U.S. District Court in Miami, Dade County has placed in escrow the entire purchase price of the SWPF facility and equipment — \$128 million — to be paid upon adequate assurance of performance by Petitioner; however, Petitioner has failed to provide those assurances and has purported to repudiate its contractual commitments. ... FPL is informed that these contractual disputes between Petitioner and the County are now in arbitration. [At the same

time, FPL is engaged in settlement negotiations involving Parsons & Whitmore and Dade County.]

* * *

The burden is on the Petitioner to demonstrate the legitimacy of its claim of interest in any NRC proceeding in which it seeks to participate. Here, Petitioner's ability to do so depends upon its ability to demonstrate before this Commission the invalidity of solemn contractual commitments which, on their face, defeat Petitioner's claim. It is not the function of the NRC to resolve a commercial contractual dispute among private parties....

FPL Partial Response at 11-17.

2. Conclusions About Cognizable Interest

RRD has not yet had an opportunity to respond to the FPL allegations. Consequently, we are unable to determine whether those allegations are true. However, we shall assume that those allegations are true for purposes of this discussion.

FPL's allegation relates to 10 C.F.R. § 2.714(d)(2), which requires that a petitioner for intervention show "the nature and extent of the petitioner's property, financial, or other interest in the proceeding." It also relates to RRD's specific allegation that it owns the Electrical Generating Facility (EGF).

In the course of its Partial Response, FPL expressed chagrin that RRD did not fully disclose the nature of its interest in the alleged PURPA property. We share in that chagrin and feel that, unless RRD had strong contrary reasons of which we are unaware, it should have fully explained the nature of its interest.

However, even if we accept FPL's version of the facts, it appears likely that RRD has a sufficient interest to be affected by these proceedings. It appears to be in possession of the EGF, whose legal status is subject to litigation and arbitration. If it cannot sell power from the EGF during the pendency of litigation, then the facility will sit idle and the public will not benefit from its capacity to generate power from waste. On the other hand, if it does sell power and did not have any right to do so, FPL has not explained what harm will result. If the proceeds do not belong to RRD, the right to revenues from the sale of power can become an additional issue in the pending litigation.

Whether or not RRD has an interest, it must also show why it is inconsistent with the antitrust laws for FPL to refuse to sell power to the

possessor of a facility which it owns. This seems a difficult burden for RRD to carry. However, the Board is unsure of the proper resolution of this issue because it has not been briefed about whether FPL would be permitted to refuse to sell to RRD if that company's dispute was with a third party. The parties also have not briefed us concerning whether that refusal to sell might be inconsistent with the antitrust laws. In addition, we need to be briefed concerning whether FPL's refusal to sell should be treated differently because RRD's dispute is with it rather than with a third party.

The Board agrees with FPL that the Commission should not become embroiled in a pending contract dispute. On the other hand, it is not clear how we can best accomplish that goal. We are required to consider antitrust issues. If we decide that RRD must be the owner of the generating plant in order to become a party, then we must litigate its interest. If we decide that a lesser interest would support RRD's participation, then we may avoid the necessity for resolving a property dispute. In that case, if RRD is unjustly enriched, it will be up to a court to rectify the potential damage.

D. Conclusion

1. Development of a Sound Record

The Board believes that RRD's participation could lead to the development of a record which might otherwise be incomplete, providing that RRD meets other parts of the test governing the granting of late intervention. There is at present no PURPA entity represented in the proceedings, and it is possible that such entities could be affected by a condition inconsistent with the antitrust laws in different ways than Cities are affected. The principal contribution RRD might make, in this regard, would occur were we to decide that relief is appropriate. Then RRD could assist the Board in fashioning relief.

It does not seem that RRD would make extensive discovery demands in this proceeding. Its participation might be limited to briefs and arguments. Consequently, it is possible that its interests could be as well served by becoming *amicus curiae* as by being a party.

At the present time, a motion for summary judgment is pending in this proceeding. It is unclear whether RRD wants to participate in briefing and arguing that issue. However, if RRD wants to do so, it should file a Notice of Intention to Appear and then it may file a brief and participate in oral argument as *amicus curiae* at the Summary Judgment conference. After that, however, its status in this proceeding will be determined by further order.

2. Possible Misunderstanding

We consider that it is not yet appropriate to decide whether RRD can intervene. Although we agree with FPL's assessment of many aspects of the record in the proceeding, we are left with the uncomfortable feeling that RRD has better grounds for intervention than it has stated. While we can not be sure that these better grounds will support its intervention, we prefer not to act before we find out.

RRD should know that the Board agrees with the general tenor of the following passage from FPL's brief:

Petitioner's complaint is nothing more than that the settlement conditions do not provide it with significant advantages *in addition to* those it receives under PURPA regulations. The contention that an injunctive condition does not go as far as one would like is no basis for the allegation that activities under the license would create or maintain a situation inconsistent with the antitrust laws.

Thus, to the extent that the Petition may be read as complaining that the license conditions themselves create or maintain a situation inconsistent with the antitrust laws because they diminish Petitioner's rights under some other regulatory scheme, that contention is groundless as a matter of law.

* * *

If Petitioner has any claim that the NRC can entertain it must be based upon allegations of a situation inconsistent with the antitrust laws which pre-existed imposition of the settlement license conditions and which the conditions do not adequately cure. In showing good cause for extreme lateness, Petitioner must explain why it never came forward to complain of the *situation*, not why it only now complains of the breadth of remedial conditions.

[Emphasis in original.] ("Partial Response" at 19-20, 26.)

3. Need for a Conference

For the reasons we have just stated, we do not believe that the petition presented by RRD is satisfactory in its present form; but we also believe that RRD's participation in this proceeding could be helpful and that it has not yet stated its grounds for intervention in their strongest form.

To help us to determine whether RRD's petition should be granted, we have decided to convene a conference. The purpose of the conference will be to explore the questions raised in this memorandum and presented in Table 2. We expect that the parties will begin with 15 minutes each for opening argument. Then we will expect argument on each of the questions

to be kept within time limits set by the Board. Extensions of time will be granted only for good cause. Additional questions may be added to the agenda by written motion filed no later than three days before the conference.

ORDER

For all the foregoing reasons and based upon consideration of the entire record in this matter, it is this 7th Day of July, 1981

ORDERED

- (1) The motion of Florida Power & Light Company (FPL) to Resume Discovery, filed on June 12, 1981, is granted.
- (2) FPL's motion to defer consideration of Florida Cities' (Cities) Motion for Special Procedures, filed on May 27, 1980, is denied, except to the extent that specific times are set for responding to that motion in this Order.
- (3) On or before August 4, 1981, parties shall file brief addressing the questions asked by the Board in Table 1 to the Memorandum accompanying this Order.
- (4) The brief filed by FPL on or before August 4, 1981, shall include its complete response to Cities May 27 motion.
- (5) In the brief they file on or before August 4, 1981, parties also should indicate their complete discovery plans, described with enough specificity to know what factual conclusions might be affected by the remaining discovery and how much effort and time might reasonably be expected to be consumed in responding to planned discovery requests.
- (6) A conference shall be held at 9:30 am on July 20, 1981, in the Nuclear Regulatory Commission hearing room, on the 5th floor of East-West Towers, 4350 East West Highway, Bethesda, Maryland, for the purpose of addressing the Board's questions contained in Table 2 of the Memorandum accompanying this Order.
- (7) A conference shall be held at 9:30 am on August 17 and 18, 1981, in the Nuclear Regulatory Commission hearing room, on the 5th floor of East-West Towers, 4350 East West Highway, Bethesda, Maryland, for the purpose of addressing the Board's questions contained in Table 1 of the Memorandum accompanying this Order.

Table 2

PARSONS AND WHITEMORE QUESTIONS

1. What is the minimum interest required by law for Parsons & Whitmore to obtain standing?
 2. Are there serious unresolved questions concerning whether Parsons & Whitmore meets minimum standing requirements?
 3. Does FPL continue to request the issuance of a subpoena? Is the present request more limited? How burdensome would it be for Parsons & Whitmore to comply?
 4. Has Parsons & Whitmore alleged that licensing of St. Lucie would create or maintain a situation inconsistent with the antitrust laws?
 5. Has Parsons & Whitmore shown good cause for its late filing?
 6. Would it be appropriate to admit Parsons & Whitmore provisionally as a party, subject to subsequent discovery concerning its party status?
 7. Would the presence as a party of a PURPA entity be helpful: (1) to the determination of whether there is a situation inconsistent with the antitrust laws; (2) if necessary, to the fashioning of remedies?
 8. Would it be appropriate to grant Parsons & Whitmore the status of *amicus curiae*? Would that status fulfill its needs?
 9. If Parsons & Whitmore is *amicus*, would it be appropriate for Cities to propound interrogatories, at its suggestion, concerning whether Florida Power & Light's treatment of it (or other PURPA entities) constitutes a situation inconsistent with the antitrust laws?
 10. If Parsons & Whitmore is admitted as a party, are there conditions which should be attached to its participation in order to avoid undue complexity and delay?
-

- (8) Parsons & Whitmore may file, as *amicus curiae*, the brief described in paragraphs (3) through (5) of this Order and may appear for the purpose of oral argument at the Conference called in paragraph (7) of this order, providing that it signify its intention in a Notice of Appearance filed on or before July 13, 1981.
- (9) Written motions to add items to the agenda of the conferences called pursuant to this Order must be filed no later than four days prior to the conference provided for in paragraph (6) or ten days prior to the conference provided for in paragraph (7).

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE

July 7, 1981
Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges

Robert M. Lazo, Chairman
Gustave A. Linenberger
David R. Schink

In the Matter of

Docket No. 50-133-OLA
(Amendment to Facility
Operating License)

PACIFIC GAS
AND ELECTRIC COMPANY
(Humboldt Bay Power Plant
Unit No. 3)

July 14, 1981

Upon consideration of Licensee's motion to withdraw, without prejudice, its application for an amendment to its operating license for the facility designed to allow the Licensee to resume its operation upon satisfactory completion of certain modifications to the facility (it has been in shut-down state since 1976), the Licensing Board defers ruling on the motion and directs Licensee to provide it with additional information regarding the modifications.

MEMORANDUM AND ORDER

1. Pacific Gas and Electric Company (Licensee) has moved pursuant to the provisions of 10 C.F.R. 2.107 to withdraw its May 20, 1977 license amendment application to permit resumption of operation of Humboldt Bay Power Plant, Unit No. 3 and thereby to terminate the above-identified proceeding without prejudice.¹ The NRC Staff has no objection to the

¹"Motion to Withdraw Application For License Amendment", dated December 31, 1980.

withdrawal of the subject application nor the termination of this proceeding.²

Thomas K. Collins, Dr. Elmont Honea, Frederick P. Cranston, Wesley Chesbro, Demetrias L. Mitsanas, the Six Rivers Branch of Friends of the Earth, and the Sierra Club (Joint Intervenors) in an answer filed on January 15, 1981, have opposed the motion to the extent that it requests this Board to issue an order terminating further action on Licensee's amendment application without prejudice. Instead, Joint Intervenors urge the Board to terminate this proceeding with prejudice by issuing an order denying the application and ordering that Licensee's nuclear unit at Humboldt Bay be permanently shut down and decommissioned.

In a filing dated January 22, 1981, the State of California (California) also has opposed Licensee's motion to withdraw its amendment application.³ California asserts that Licensee's request to withdraw its May 1977 application, but with the option of filing another application sometime in the future, is unreasonable, and argues that the fate of the Humboldt Bay plant should be resolved within the context of this proceeding.

2. Humboldt Bay Unit No. 3 is a 63 Mwe boiling water reactor for which a Provisional Operating License was issued to Licensee on August 28, 1962. In connection with the Advisory Committee on Reactor Safeguards and Staff review of the Licensee's application for a Full-Term Operating License, the Licensee agreed to perform an updated seismic review to define the proper seismic accelerations and spectra applicable to the plant site and, if necessary, to perform a dynamic analysis of safety related components.

Following issuance of Full-Term Operating License No. DPR-7 on January 21, 1969, the Licensee submitted updated geologic and seismic studies in April 1969. A report on soil structure interaction was submitted in May 1971. During the course of the review of the Licensee's reports by the Staff several areas were identified which required further study. Based upon Staff review of the seismic studies performed for the Humboldt Bay plant through 1973, it was determined that a seismic event of 0.25g was appropriate as the Operating Basis Earthquake (OBE) for this site and that the dynamic response of the facility, as a result of a 0.25g event, could result in actual loads greater than those calculated for design purposes using a 0.25g static load factor. Accordingly, the Staff required that the Licensee update the seismic design analysis of safety related structures, systems and

²See Staff's January 21, 1981 response to the present motion.

³See "Notice of the People of the State of California and the Public Utilities Commission of the State of California of Participation as an Interested State", dated December 1, 1980. In the absence of opposition by any party, the Board hereby grants California's request to participate in this proceeding as an interested State pursuant to the provisions of 10 C.F.R. 2.715(c).

components for the Humboldt Bay plant. In addition, it was requested that more data be provided for geological and seismological determinations of the magnitude and location for the Safe Shutdown Earthquake (SSE), and for determining the geological significance of nearby faults.

Based upon its review an evaluation of the reports submitted during the conduct of the above programs, the Staff concluded in 1976 that the seismic qualification (to the 0.25g OBE) of the safety related equipment should be completed in a timely manner and that in the absence of seismic qualification of this equipment, operation of the Humboldt Bay plant should not be allowed beyond the next refueling outage. Thereupon, on May 21, 1976, the Commission issued an "Order for Modification of License" for the plant, which added the new provision as paragraph E to Licensee's operating license. Subparagraph E(1) required Licensee to upgrade the plant so as "to meet current regulatory requirements with respect to withstanding the effects of the Operating Basis Earthquake of 0.25g", and subparagraph E(2) required Licensee to conduct geologic and seismic investigations in order to demonstrate, in essence, that the plant is seismically safe.

In particular, among other specific items, the Commission ordered Licensee to locate accurately and assess the capability of the Bay Entrance and Little Salmon faults. With regard to the Bay Entrance fault, the Commission ordered that "If this fault cannot be shown to be noncapable within the meaning of Appendix A, Section IIIg(1), it must be demonstrated that movement on it cannot be expected to cause surface displacement within the plant area." Paragraph E(2)(a). With respect to the Little Salmon fault, the Commission ordered that "An upper limit for the age of the last movement must be established by reliable dating techniques sufficient to demonstrate that the fault is noncapable." Paragraph E(2)(b).

In June 1976, the Humboldt Bay nuclear plant was shut down for refueling and seismic modifications. It has not restarted.

3. The present proceeding was initiated by the May 20, 1977 filing by Licensee of an application for amendment of its operating license. More specifically, Licensee requested deletion of paragraph E and sought authorization to return the plant to power operation on July 15, 1977, on the basis of satisfactory completion of the requirements of the May 21, 1976 Order.

On June 9, 1977, the Commission issued a Notice of Proposed Amendment to Facility Operating License in this proceeding (42 *Fed. Reg.* 31847, June 23, 1977). Pursuant to that notice Joint Intervenors each filed petitions for leave to intervene which were granted by the Board on May 15, 1978. Meanwhile, the Staff on August 5, 1977, informed Licensee that it could not support the Company's application to resume operation based on

the information currently available to it concerning geologic and seismic issues pertaining to the facility.

Licensee then retained Woodward-Clyde Consultants ("WCC") to conduct a series of geologic and seismic studies designed to resolve the concerns expressed by the Staff. While these studies were in progress, Licensee sought and received several continuances in this proceeding to allow completion of these studies. The latest of these continuances was granted to October 1, 1980, in order to allow Licensee to receive, evaluate, and file with the Board the Report of WCC containing the results of its geologic and seismic studies. This Report (filed with the Board on October 6, 1980) concluded that the seismic and geologic issues raised by the Staff appear capable of resolution.

However, the WCC Report does not appear to imply that the resolution of these issues will necessarily be in favor of Licensee. The principal substantive findings that the WCC Report does make are that both the Bay Entrance and Little Salmon faults are in fact "capable", and that a previously unmentioned third fault, called the Buhne Point fault, lies within the immediate vicinity of the plant site, and is also "capable." Thus, the WCC Report serves to justify and underscore the Staff's concern that this plant is located in the middle of an active earthquake zone immediately adjacent to at least three capable faults.

At the time the WCC Report was filed with the Board Licensee asked the Board to delay further action on its application to December 31, 1980, to enable it to analyze the results of its studies and those of its consultant, Bechtel Power Corporation, relating to the costs and economics of returning the unit to operation. Those studies have been completed and indicate that the potential costs of additional equipment and operating personnel are high when measured against the size of the facility and its remaining useful life. However, a substantial portion of the potential costs contained in the Bechtel Report — some \$40-\$80 million — represent a judgment of potential costs of items that are not currently backfit requirements on operating plants, but which might become backfit items depending on future NRC policy. Licensee suggests that when NRC retrofit standards become better known, it may well be that the currently projected costs will turn out to be less than expected and it may then be economic to make the required plant modifications.

Using the conclusions of the WCC Report and the Bechtel studies, Licensee now asks that the Board allow it to withdraw its May 20, 1977 application to restart its nuclear plant at Humboldt Bay, "without prejudice", thus leaving the door open for a renewed application in the future. Meanwhile, the plant would remain in a shutdown condition as it

has been since the plant was closed in June 1976 pursuant to the Commission's May 21, 1976 Order.

4. The Staff has raised the question of jurisdiction and argues that this Board lacks the jurisdiction to grant the relief requested by the Joint Intervenors and California, namely, that the current proceeding should be the procedural vehicle which ultimately resolves the future of Licensee's Humboldt Bay nuclear facility. According to the Staff, whatever the disposition is of this proceeding, it cannot operate to terminate the operating license itself nor accelerate its expiration date. We are told that initiation of decommissioning procedures must be pursued in a separate context and in a separate forum and that all we can do is to deny the motion, which would leave the facility in an ambivalent status, or grant the motion, which would restore the status quo at the shutdown facility. We are not comfortable with this position of the Board with respect to a licensed, albeit non-operating reactor.

The Board, as noted by the Staff, derives its jurisdiction in this matter solely from the Commission's June 9, 1977 notice of opportunity for hearing in connection with the license amendment application which forms the subject of this proceeding. This amendment would delete requirements in the license relating to seismic upgrading of safety related equipment and resolution of geologic/seismic concerns based upon satisfactory completion of these requirements, and allow for the restart of Humboldt Bay Power Plant, Unit No. 3. Thus, the Board has been given certain responsibilities regarding the present geologic/seismic requirements of the license. By simply offering to withdraw its request that these requirements of its license be deleted, the Licensee cannot avoid the necessity of complying with them, nor can it relieve the Board of its responsibilities regarding same.

In our view, Licensee has in effect conceded that presently it is unable or unwilling to expend the funds necessary either to complete the seismic and geologic investigations ordered by the Commission more than five years ago, and to upgrade the plant as necessary, or to bring the plant into compliance with newly issued post-Three Mile Island safety regulations promulgated by the Commission. It is apparent that the design of Humboldt Bay Unit 3 has become deficient in a number of respects.

Since June 1976, License No. DPR-7 has been an "operating" license in name only. We understand that spent fuel is being stored in the spent fuel pool and that some spent fuel may reside in the reactor vessel. While we do not regard the presence of this fuel in the facility as an undue risk to the health and safety of the public, we are concerned about the lack of definitive plans and schedules for either upgrading of the facility or disposition of the spent fuel.

Since Humboldt Bay Power Plant, Unit 3 does not meet current operational requirements and, to our knowledge, no plans exist for bringing it into compliance with current requirements, this Board has under consideration the issuance of an order requiring Licensee to show cause why the operating authority provided in Facility Operating License No. DPR-7 should not be revoked and why Licensee should not submit a plan to decommission Humboldt Bay Power Plant, Unit 3. Accordingly, we will defer ruling on Licensee's motion to withdraw its application for a license amendment and at this time require Licensee to provide us with a definitive statement of its present intentions regarding required plant modifications and a schedule for completing them.

ORDER

For all the foregoing reasons upon consideration of the entire record in this matter, it is this 14th day of July, 1981

ORDERED

That within thirty days of the date of this Order, Licensee shall file a written statement under oath or affirmation setting forth its intentions regarding plant modifications required to bring Humboldt Bay Power Plant, Unit 3 into compliance with current NRC requirements. If Licensee desires to retain the operating authority provided in Facility Operating License No. DPR-7, such statement shall include a proposed schedule for completing the required plant modifications.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**Robert M. Lazo, Chairman
ADMINISTRATIVE JUDGE**

July 14, 1981
Bethesda, Maryland

Cite as 14 NRC 107 (1981)

LBP-81-21

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John F. Wolf, Chairman
Glenn O. Bright
Dr. Jerry Kilne

In the Matter of

Docket Nos. 50-275-OL
50-323-OL
(Low Power Test Proceeding)

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

July 17, 1981

The Licensing Board issues a partial initial decision (subject to review by the Commission pursuant to 10 C.F.R. 2.764) authorizing the issuance of a license for fuel loading and low-power testing up to 5% of rated power at the Diablo Canyon facility. The Board notes for Commission attention that issues relating to the security of the plant are still before the Appeal Board and that the partial initial decision will not be complete without their resolution.

EMERGENCY PLAN: CONTENT

Full compliance with the Commission's emergency planning standards in NUREG-0654 and Appendix E to 10 C.F.R. Part 50 is not required prior to fuel loading and low-power testing; however, emergency planning for fuel loading and low-power testing must be sufficient to confer the same level of protection to the public as afforded by full compliance with the regulations at full power operation.

TECHNICAL ISSUES DISCUSSED

Release of radioactive radon gas from uranium mining and milling for reactor fuel;

Quality assurance;

Unresolved generic safety issues;

Emergency planning requirements for fuel loading and low-power testing;

Risks of low-power operation;

Radiation exposures at the site boundary and low population zone (LPZ);

Risk of accidents during testing;

Emergency planning zones;

Radiological monitoring;

County emergency plans;

Relief, safety, and block valves.

APPEARANCES

Malcolm H. Furbush, Esq., Philip A. Crane, Jr., Esq., Richard F. Locke, Esq., Arthur C. Gehr, Esq., and Bruce Norton, Esq., for the Applicant

William J. Olmstead, Esq. and Bradley W. Jones, Esq., for NRC Staff

David S. Fleischaker, Esq., and Joel R. Reynolds, Esq., for Joint Intervenors

Herbert H. Brown, Esq., Byron S. Georgiou, Esq., Lawrence C. Lanpher, Esq., for the State of California represented by Governor Edmund G. Brown, Jr.

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PARTIAL INITIAL DECISION

I. INTRODUCTION

(1) Background

1. This matter, involving the Diablo Canyon Nuclear Plant, Units 1 and 2, is a contested operating license proceeding. The Licensing Board completed hearings in February, 1979 and the record was closed on March 12 of that year.

2. A partial initial decision was issued by the Board on June 12, 1978 which ruled on the environmental issues in the proceeding. (LBP-78-19). A further partial initial decision was issued on September 26, 1979. (LBP-79-26). This latter decision included, *inter alia*, the Board's rulings on seismic and security issues. The Joint Intervenors filed exceptions to both these rulings with the Appeal Board. They were joined by Governor Brown, who had been admitted to the proceeding on November 16, 1979 as an interested state after the record had closed.

3. The Appeal Board's response to Intervenor's pleadings on the security issue was to vacate the Board's ruling and to rehear testimony from all parties. (ALAB-580, 11 NRC 227 (February 15, 1980)). On the seismic issue, the Appeal Board granted a motion by the Intervenors to reopen the record for new evidence derived from a major earthquake which had occurred subsequent to the closing of the record. (ALAB-598, 11 NRC 876 (June 24, 1980)). The Appeal Board then conducted hearings on the new evidence.

4. In other actions contained in the Licensing Board's September 26, 1979 Partial Initial Decision the Board deferred several items necessary to the completion of an initial decision inasmuch as the potential impact upon them of the Three-Mile Island accident could not be determined. These issues, all of which were included in the proceedings at the Board's request, were quality assurance, generic safety issues and emergency planning. The radon, or Table S-3 issue, was deferred pending ongoing action by the Appeal Board.

5. On June 20, 1980, the Commission issued "Further Commission Guidance for Power Reactor Operating Licenses." The policy statement referenced a document entitled "TMI-Related Requirements for New Operating Licenses" (NUREG-0694) dated June 1980. On July 14, 1980, PG&E filed a motion before the Board requesting fuel loading and low power operation pursuant to 10 C.F.R. 50.57(c) and the Commission's policy statement. After receiving responses from the parties, the Board issued an order accepting the Applicant's motion and setting October 27,

1980, as the date for filing of any contentions. This date was subsequently extended to December 3, 1980.

6. In November 1980, the Commission issued a document entitled "Clarification of TMI-Action Plan Requirements" (NUREG-0737), which superseded NUREG-0694. This was followed by additional guidance to the Board by Commission Order CLI-80-42, dated December 18, 1980. On December 19, 1980, the Commission denied a Joint Intervenors' request for directed certification which was before it and stated that the Board had the authority to rule on the matters raised by Joint Intervenors.

7. The Board scheduled a prehearing conference for January 28 and 29, 1981 for the purpose of hearing argument on the twenty-seven contentions raised by Joint Intervenors. During this conference it became apparent that the parties had interpreted the Commission's policy statements in diametrically opposite ways: the Staff and the Applicant arguing that none of the contentions were admissible, principally on procedural grounds; the Joint Intervenors and Governor Brown alleging that all the contentions must be admitted as a result of the Commission's guidance.

8. The Board did not agree with either of these extreme positions, reasoning that the Commission could not have intended such a simplistic disposition of the issues. The Board, therefore, formulated its own interpretation of the Commission's intent, which is explained in detail in the Prehearing Conference Order of February 13, 1981. Under this interpretation, the Board admitted four of the contentions and deferred one on Class Nine Accidents.¹ Subsequently, on April 30, 1981, the Board granted summary disposition on two of these contentions, leaving two contentions at issue, one involving emergency planning and one concerning the testing of relief, safety and block valves.

9. On April 1, 1981, the Commission issued an Order, CLI-81-5, which provided additional guidance to the Board, consistent with its Memorandum and Order CLI-80-42, in its consideration of TMI-related matters. The Board reviewed this additional guidance to determine if its Order of February 13, 1981, which was based on CLI-80-42, was still in agreement with Commission policy. As a result of this review, the Board believes that its interpretation of the application of CLI-80-42, as set forth in detail in our Order of February 13, 1981, was in compliance with the intent of the Commission. In particular, the Board had decided that contentions concerning those matters directly addressed in NUREG-0737 would be considered as showing good cause for both reopening the record and for

¹The deferred contention on Class Nine Accidents was effectively denied in a Board Order on June 19, 1981, after the Appeal Board had affirmed the Licensing Board's earlier seismic findings.

untimely filing of contentions. Absent such direct relation to NUREG-0737, contentions would not be allowed without a full compliance with the requirements of 10 C.F.R. 2.714(a)(1) and the Appeal Board ruling in 7 NRC 320 (1978). Contentions would, of course, be required to comply with the basis and specificity requirements of 10 C.F.R. 2.714(b).

10. On April 6, 1981, the Board issued a Notice of Hearing on the motion of Applicant for fuel loading and low power testing, to be held in San Luis Obispo, California, beginning May 19, 1981. Subsequently, the hearing was held, beginning May 19, 1981 and lasting through May 22, 1981. The various issues and other matters of concern are discussed below.

(2) Findings by the Atomic Safety and Licensing Appeal Board

11. As discussed, *supra*, the Appeal Board vacated the Board's findings on the security issue and assumed jurisdiction for further hearings on the matter. Hearings have been held, but to date the Board is not aware of a decision having been issued. This Board finds that absent an Appeal Board decision it does not have the authority to make any kind of ruling on this issue. Our decision herein, therefore, is not complete without resolution of the issue. We hereby invite the attention of the Commission to this matter in their review of this decision.

12. The Appeal Board also reopened the record on the seismic issue to take new evidence obtained through analysis of an earthquake which occurred after the Board's decision had been rendered. The Appeal Board has rendered a decision on this matter in which it affirmed the Board's earlier decision. (ALAB-644, June 16, 1981). The Board considers this matter closed, barring further Commission action.

13. The Appeal Board has also reviewed the other matters contained in our Partial Initial Decisions of June 12, 1978 (LBP-78-19) and September 27, 1979 (LBP-79-26) and has affirmed said decisions (ALAB-644, June 16, 1981). Accordingly, we consider these matters to be closed.

II. FINDINGS OF FACT

(a) Decision on Issues Previously Held in Abeyance

(1) Radon

14. The Board held an evidentiary hearing on October 18-19, 1977 on a number of issues which included Revised Table S-3 values concerning the environmental effects of the Uranium Fuel Cycle. At the time of the hearing, the Board admitted into evidence a then current version of Table S-3. It deferred ruling in its initial decision of September 27, 1979 because

of the publication of ALAB-562 which raised doubts concerning the correctness of radon values which appeared in that Table.

15. At a conference of counsel held July 27, 1978 in preparation for further hearings, the Board advised Joint Intervenors that they would have an opportunity if they wished to submit a contention on radon as part of the Uranium Fuel Cycle. By letter of August 7, 1978 the Joint Intervenors stated that they would not submit a contention on radon. In this proceeding, therefore, neither Table S-3 radon values nor health effects of radon are contested issues.

16. Table S-3 was promulgated generically by the Commission to enable consideration of the environmental effects of the Uranium Fuel Cycle in individual reactor licensing cases without the necessity of holding separate repetitive trials in a large number of individual cases. Subsequent to a Commission decision on April 11, 1978 that the then current radon values in Table S-3 were incorrect the Appeal Board consolidated a number of cases and scheduled hearings for the purpose of determining more accurate values of radon emissions associated with the Uranium Fuel Cycle.

17. The Appeal Board issued its decision, ALAB-640, on May 13, 1981. That Board found that a composite mine and mill would together release radon at the rate of 6600 Ci/AFR (Curies per annual fuel requirement). (AFR is defined as the amount of uranium fuel needed to operate a 1000 MWe power plant at 80% capacity for one year). The Appeal Board also examined three alternatives for determining long-term release rates after mining and milling have ceased. The Board found radon releases as follows: Case 1, sealed and reclaimed mines with covered tailings; 21 Ci/AFR per year. Case 2, unsealed and unreclaimed mines with covered tailings; 91 Ci/AFR per year. Case 3, unsealed and unreclaimed mines with uncovered tailings; 230 Ci/AFR per year. These findings give this Board sufficient information to determine the radon releases attributable to the fuel needed for operation of the Diablo Canyon Nuclear Power Plant.

18. The two unit Diablo Canyon Power Plant is designed for a combined net steady state electrical power level of 2190 MWe. Full power operation will therefore require 2.19 AFR. In order to determine the radon releases attributable to Diablo Canyon under full-power 2-unit operation we need only multiply the values found by the Appeal Board by the factor 2.19. These results are shown in Table 1.

Table 1

Radon Release for Diablo Canyon Units 1 and 2 Fuel Cycles
Rating (MWe): 1084 (Unit 1); 1106 (Unit 2); 2190 (combined)

Annual Fuel Requirement	2.19 AFR
Annual Release of Radon	14454 Ci/yr
Lifetime fuel requirement (30 years)	65.7 AFR
Lifetime release of radon	433620 Ci
Continuing Releases Case 1	1350 Ci/yr
Continuing Releases Case 2	5979 Ci/yr
Continuing Releases Case 3	15111 Ci/yr

19. The radon emission values attributable to the fuel cycle at Diablo Canyon are similar in magnitude to those of other operating reactors which were considered in ALAB-640. The Board has found nothing novel or unusual about radon emissions associated with Diablo Canyon which would cause us to alter the cost benefit balance which was performed in LBP-78-19, 7 NRC 989 (1978). There being no contested issues on this matter we include the radon values herein only to complete the record and find no cause to reconsider the environmental cost-benefit balance previously performed.

(2) Quality Assurance

20. On April 29, 1977, the Intervenors submitted a motion to the Board requesting admission of a new contention regarding quality assurance. Oral arguments were heard on May 12, 1977. In its order of May 25, 1977, the Board denied the contention on QA on the bases of untimeliness, not required by law or regulation, lack of specificity and unconscionable delay in the proceeding. The Board, on its own motion, further directed Applicant and Staff to present testimony on the QA program at Diablo Canyon by having knowledgeable witnesses at a subsequent hearing. The Board further stated that its primary interest was in obtaining, for inclusion in the record, a brief description of the DCNP QA program, its chronology and current status.

21. On October 18 and 19, 1977, further hearings were held on non-seismic health and safety matters. In response to the Board's request for testimony on the DCNP quality assurance plan, the Applicant presented Dr. Russel P. Wischow, their Director of Quality Assurance (Prefiled testimony following Tr. 3458; direct examination Tr. 3597-3610). Dr. Wischow set forth the background and history of the Quality Assurance Department of PG&E, and explained the operational relationships between officers and staff of Applicant who are responsible for implementation of

the quality assurance program for plant operation in compliance with 10 C.F.R. 50, Appendix B. He further testified that Applicant has constantly upgraded its quality assurance program to meet AEC (NRC) requirements, and detailed the mechanics of the program used to correct imperfections discovered in the construction phase of the facility. (Tr. 3603-05).

22. At the conclusion of the Board's questions of Dr. Wischow, the opportunity for cross examination as extended to all parties. The offer was refused. (Tr. 3609).

23. The Staff presented a panel of three witnesses, Alfred M. Garland, from the Quality Assurance Branch of the Office of Nuclear Reactor Regulation, and Talbert Young, Jr. and William G. Albert, from the Office of Inspection and Enforcement, Region V. After providing a description of the Diablo Canyon quality assurance programs for both the construction and operation phases, they further offered evaluations of the numerous allegations which had been put forth in statements made by one of the Intervenor's consultants over a period of time (Garland, Albert and Young testimony following Tr. 3614, p. 2-62).

24. Based on their evaluation of both the construction and operation quality assurance programs, the allegations made by Intervenor's consultant and on numerous inspections of the facility, the Staff witnesses concluded that (1) the Design and Construction Quality Assurance Program implementation was consistent with the status of the project, and that (2) Applicant has satisfactorily demonstrated that quality-related activities can be conducted in accordance with the requirements of Appendix B of 10 C.F.R. 50 during the operations phase of the facility. (Testimony at 62-63). In reply to questions from the Board, the witnesses testified that none of the quality assurance matters mentioned in a Government Accounting Office report (July 22, 1977) were substantial, and that no significant areas of concern had been revealed in the Diablo Canyon quality assurance implementation by either Intervenor or the GAO. (Tr. 3616-18).

25. After the Board completed its questions, the opportunity to cross-examine the Staff witnesses was extended again to all parties. The opportunity was again refused. (Tr. 3618).

26. When the Board issued its Partial Initial Decision (Operating Licensing Proceedings), on September 27, 1979, the Board review of the Quality Assurance Program was not included in order to see if the investigation of the Three-Mile Island accident would occasion the proposal of a significant revision of required quality assurance procedures. This has not happened, as evidenced by the Staff's update of its review of the Diablo Canyon quality assurance program for the operations phase as of April, 1981. They have provided a current description of the plan, and

state that their review of the program description for the operations phase has verified that the criteria of Appendix B to 10 C.F.R. 50 have been addressed satisfactorily. Accordingly, the Staff concludes that PG&E's description of the quality assurance program is in compliance with applicable NRC regulations, and, therefore, is acceptable for full power operation. (Staff Ex. 24, SER Supp. No. 13, pp. 17-1 through 17-4).

27. Based on the uncontroverted testimony of both Applicant and Staff, the Board finds that the Diablo Canyon quality assurance programs for both the Design and Construction phase and the Operations Phase have been and are in compliance with the requirements of 10 C.F.R. 50, Appendix B, and that the implementation of both programs is acceptable to the Board.

(3) Unresolved Generic Safety Issues

28. The Atomic Safety and Licensing Appeal Boards have issued two decisions which provide guidance to both the NRC Staff and the Atomic Safety and Licensing Boards in their consideration of unresolved safety items, or "generic safety issues." These decisions are *Gulf State Utilities Company* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977), and *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2) ALAB-491, 8 NRC 245 (1978). We note that the Staff's evaluation of these matters must be in the public record, and that the Board's review of these matters must "...entail an inquiry into whether the Staff review satisfactorily has come to grips with any unresolved generic safety problems which might have an impact upon the operation of the nuclear facility under consideration."

29. The Board brought these decisions to the attention of the parties in these proceedings in a memorandum dated September 18, 1978. On February 13, 1979, shortly before the record was closed on the seismic issue, the Board received a submittal from the Staff on generic safety issues. Staff Exhibit 13 (Aycock Professional Qualifications), Staff Exhibit 14 (Crocker Professional Qualifications) and Staff Exhibit 15 (Affidavit of Aycock, Crocker and Allison Relating to the Status of NRC Staff Activities Regarding Generic Safety Issues) were marked for identification (Tr. 10,176). Staff Exhibits 13, 14 and 15 were admitted into evidence by Board Order of February 26, 1979.

30. The Board deferred its consideration of the documentation until after the record was closed. After reviewing the Staff exhibits an Order Relative to Generic Safety Issues was directed to the NRC Staff which stated that the documentation was adequate for all issues, except for Generic Safety Issue A9 (Anticipated Transients Without Scram, or ATWS). On March 2, 1979, the Staff submitted its testimony on the status

of ATWS in the form of an affidavit of Dennis P. Allison and Ashok C. Thadani dated March 1, 1979. The Staff moved that the Affidavit and NUREG-0460, Vol. 3 be placed in evidence as Staff Exhibit No. 16. By Memorandum of March 12, 1979, the Board granted Staff's motion.

31. When the Board issued its Partial Initial Decision (Operating Licensing Proceedings) on September 27, 1979, the Generic Safety Issues review by the Board was not included in order to see what effect, if any, the investigation of the Three-Mile Island accident might have on the issues which must be considered. With the issuance of NUREG-0737 and the guidance provided by the Commission on TMI-related matters contained in CLI-80-42 and CLI-81-5, the Board can find no explicit impact of the TMI accident on the Generic Safety Issues.

32. In June, 1980, the Staff reviewed the list of class A generic safety issues and provided the record an update. (Staff Exhibit No. 20, SER Supplement No. 9, pp. B-1 to B-5). They found that additional information should be provided with respect to four of the generic tasks. Additional information was presented on A-44—Station Blackout, (SER Supp. No. 9, p. B-3, 5), A-9—ATWS, (SER Supp. Sections 15.0), A-11—Reactor Vessel Material Toughness (SER Supp. Sections 5.2) and A-24—Qualification of Class IE Safety-Related Equipment, (SER Supp. Sections 7.8).

33. With the documentation described above, the Board now has a sound record to review in order to evaluate the present situation. The Staff has provided a thorough description of its extensive program for dealing with generic issues in Staff Exhibits 13-16. From them, we learn that, as unresolved safety issues are identified, a high-level Staff group determines whether immediate action is necessary to assure continuing safety or whether the safety significance of the issue is such that operations and licensing actions may continue while a longer term generic review is underway. To date, an extensive list of such issues have been identified from various sources such as the ACRS, Staff members, operating experience and research results. The Staff has screened all of these generic issues and placed them into one of four categories, A, B, C, or D, according to their potential safety significance and urgency.

34. Staff Exhibit 15 (and its Appendix A), Staff Exhibit 16, the SER, and SER supplements fully discuss Category A tasks perceived by the Staff to be of some applicability to Diablo Canyon. In its discussion of each of the Category A tasks applicable to Diablo Canyon in Staff Exhibits 15 and 16 and Appendix A to Staff Exhibit 15, the Staff submits a detailed description of each issue, details of the plan for resolving the particular issue, or an indication that the issue is resolved, or a discussion of why it believes that licensing may proceed pending resolution of any issue. We conclude that the Staff has set forth these problems, programs, and bases

clearly and rationally and the public record of the proceeding now reflects the Staff's views and perception of these elements.

35. In each instance, the Staff has concluded that one or more of the following bases for continued licensing applies: (1) the problem has been resolved for the reactor under study, (2) a resolution can reasonably be expected before operation, (3) there will be no safety implications until after years of operation and alternative means will exist to avoid undue risk to the public, (4) current standards are adequate but confirmatory studies are desirable while licensing continues, (5) a problem is so unlikely to occur as to be an incredible event, (6) the task is for the purpose of resolving unclear, conflicting, or impractical requirements of the regulations, or, (7) presently adequate criteria can be improved. The Board has determined that the documentation furnished by the Staff with respect to Category A generic safety issues has satisfied the Board's concern on all issues.

36. The Staff did not deal with the B, C, and D Category problems in Staff Exhibit 15; responding to *River Bend* explaining that:

"Of those remaining Category B, C, and D tasks that are related to plant safety and that are applicable to the Diablo Canyon facilities, we have identified none that could not be resolved either by system alterations using available techniques and equipment or by operational modifications in the event that the Staff's review of the issue revealed that current criteria required upgrading during operation. On this basis and the Steering Committee's judgment that the remaining Category B, C and D issues are of lesser safety significance than Category A issues and that not even all of the Category A issues qualify as "Unresolved Safety Issues," detailed information on the remaining Category B, C and D tasks is not, in our judgment, necessary and we have not included any such information for the remaining Category B, C and D tasks." (Staff Exhibit 15, pp. 6-3, 6-4)

37. The Staff defines Category B tasks as those tasks not having the "potentially significant public safety implication(s)" referred to in *River Bend*. We accept the Staff's conclusion because it is also a working conclusion which must be made by the Staff in the discharge of its responsibilities. It is within the Staff's discretion to determine in the first instance which tasks require resolution before others and whether licensing may safely proceed without a program for resolution of the tasks.

38. The Board concludes that the Staff's evidence on generic safety problems is not inconsistent with *River Bend*. The evidentiary record demonstrates that Category B tasks can be resolved, if necessary, by system alterations using available techniques or operational modifications. (Staff

Exhibit 15, p. 6-3). The record also demonstrates that no Category B task requires resolution to remedy significant defects in facility design. (Staff Exhibit 15, pp. 6-3 and 6-4). The Staff has thoroughly explained its program for the review of the generic tasks to determine whether a plan for resolution is required. And most important, the Staff has explained why licensing can safely proceed in the face of the problem.

39. With these elements, the Staff has met the substantive requirements of *River Bend*. We have undertaken to ascertain whether the Staff dealt appropriately with the "unresolved" issues in this operating license proceeding. We have looked to see whether the generic safety issues have been taken into account in a manner that is reasonable from a regulatory point of view and would be adequate to justify operation. We have searched the entire record to see if there are adequate explanations on all the issues pertinent to the Diablo Canyon facility, and have found that there is a basis for the Staff's decision to allow operation to go forward.

40. Accordingly, there is nothing with respect to the generic safety problems in either Category A or B which prevents this Board from finding under 10 C.F.R. § 50.35(a) that the proposed Diablo Canyon facility can be operated without undue risk to the health and safety of the public.

(b) Decision on Issues Considered at Evidentiary Hearing

(1) Emergency Planning

Contention 4 reads:

Numerous studies arising out of the accident at TMI Nuclear Power Plant have shown the need for upgrading emergency response planning. Based upon these studies, the Commission promulgated revised emergency planning regulations effective November 3, 1980. The Applicant has failed to demonstrate that the combined Applicant, State and local emergency response plans for Diablo Canyon comply with those revised regulations ("Final Regulations on Emergency Planning," 45 Fed. Reg. 55402 (August 19, 1980)).

(i) Discussion

41. The Board accepted this contention in its prehearing conference order of February 13, 1981 "insofar as it pertains to issues related to fuel loading and low power testing." There is no dispute in this proceeding as to whether the current combined Applicant, State and local emergency plans comply with the Final Regulations on Emergency Planning (10 C.F.R. 50.47 and Appendix E to Part 50 of the Commission's regulations). All parties agree that the current emergency plans do not comply with these regulations. Applicant and Staff argue that full compliance is not necessary

for the purpose of fuel loading and low power testing. Joint Intervenors and Governor Brown argue that the regulations do not specifically exclude low power testing from compliance, that NUREG-0737 specifically requires compliance, and in any event if an exemption from the regulations is justified it must be based on the demonstration specified in 10 C.F.R. 50.47(c)(1), which the applicant has not adequately done. The Board reads contention 4 as consisting of two issues: (1) whether full compliance with the current regulations is needed for fuel loading and low power testing or whether some lesser standard is appropriate; and (2) if a lesser standard for emergency planning for low-power testing is permissible what should the requirements consist of for this case?

42. The development of requirements for emergency planning for both low-power testing and full-power operation followed a complicated pathway after the TMI accident. This contributed to uncertainty and delay in this case. The board believes that a review of these developments will aid in understanding the decision it reaches herein.

(ii) Development of Emergency Planning Requirement After the Accident at TMI

43. The Board held hearings on non-seismic issues which included the current Diablo Canyon Emergency Plan on October 18-19, 1977. Before an initial decision could be issued the accident at Three-Mile Island occurred. After further hearings on other matters, the Board issued a partial initial decision on a limited number of issues on September 27, 1979. In that decision it deferred ruling on emergency planning because of its uncertainty as to how the Lessons Learned from Three-Mile Island-2 would affect that activity.

44. A number of changes in regulation and guidance on emergency planning later materialized as a result of the TMI accident. These changes contributed in part to the Board's decision to reopen the record in its February 13, 1981 prehearing conference order and to its ruling in an order dated April 6, 1981 that the record in this case was inadequate. As part of the change which occurred in the wake of the TMI-2 accident, responsibility for offsite emergency planning around nuclear power plants was transferred from NRC to the Federal Emergency Management Agency (FEMA) by presidential decision. A Memorandum of Understanding between NRC and FEMA was issued January 11, 1980 which detailed lead responsibilities of FEMA and of NRC and cooperative efforts between the two agencies. While the overall responsibility for licensing nuclear power plants remains with NRC the memorandum specifies that FEMA has lead responsibility for review of State and local emergency plans and NRC has lead responsibility for review of Applicant's onsite emergency plans.

45. In one of its early actions under its new responsibility, FEMA concurred on February 14, 1980 with NRC's plan to license the Sequoyah nuclear power plant for low-power testing based on NRC's statement of minimal hazard and on FEMA's knowledge of the condition of Tennessee's State and local emergency plans. (Brown Ex. 4 and 5).

46. On March 12, 1980 FEMA recognized that there were three other plants including Diablo Canyon which would soon seek authorization for low power testing. (Brown Ex. 1). The FEMA/NRC Steering Committee determined that on an interim basis:

Public health and safety is adequately protected if such a facility is located in a state which had received a concurrence under the previous voluntary concurrence program administered by the NRC and based on evaluation by a multiagency Federal Regional Advisory Committee. In addition operator plans at individual sites must be consistent with both the existing NRC appendix E to 10 C.F.R. Part 50 and NRC Regulatory Guide 1.101(Brown Ex. 1.)

47. The NRC stipulated in the interim agreement that facility operator plans "... are in compliance with Appendix E and are consistent with Regulatory Guide 1.101." (Brown Ex. 1).

48. In June 1980, NRC published NUREG-0694, "TMI-Related Requirements for New Operating Licenses." NUREG-0694 adopted the above-referenced standard for emergency preparedness for low power testing which had been developed by the FEMA/NRC steering committee.

49. In August 1980, the Commission published its upgraded final rule on emergency planning with an effective date of November 3, 1980.

50. In November 1980, the Commission published NUREG-0737, "Clarification of TMI Action Plan Requirements." Also in November 1980, the final version of NUREG-0654, FEMA-REP-1, REV-1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," was published.

51. On December 18, 1980, the Commission published a revised statement of policy in which it stated that NUREG-0737 supersedes NUREG-0694 and that the requirements of NUREG-0737, together with existing regulations, formed the basis for issuance of new operating licenses. NUREG-0737 required that emergency preparedness for nuclear power plants be upgraded to Appendix E to 10 C.F.R. Part 50 standards prior to fuel load.

52. As the Board then saw matters, the lessons from TMI-2 had finally been learned as regards emergency planning because of the adoption of 10 C.F.R. 50.47, New Appendix E to Part 50, the publication of NUREG-0654

and the issuance of NUREG-0737. The Board stated in an order dated April 30, 1981 that these regulations and guidance now control emergency planning for nuclear power plants.

53. In so stating, the Board was not unmindful of the flexibility in the regulations afforded by 10 C.F.R. 50.47(c)(1). That flexibility would permit an applicant ... "an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question." The Board perceived that the application for a license to load fuel and conduct low power testing at Diablo Canyon might reasonably be a candidate for the exercise of that flexibility if the appropriate demonstration could be made.

54. The Board therefore informed the parties at the opening of the evidentiary hearing on May 19, 1981 that:

We're guided by the regulations, as you gentlemen know: Part 50.47, Appendix E to Part 50 and the implementing document NUREG-0654. (Tr. 10,578).

and later the Board stated that:

If there are any of the sixteen points listed in NUREG-0654 for which an exemption is sought under 50.47(c), we would like to know the reasons you have for believing that one or another of those points do not apply for low-power testing. (Tr. 10,578-79.)

55. In the course of the evidentiary hearing (May 21), Staff counsel delivered to the Board a Commission-approved policy paper entitled, "Emergency Preparedness," SECY-81-188, dated April 22, 1981, which changed the schedule for compliance with Appendix E as shown in NUREG-0737 from fuel loading to full power operation. The Board had had no previous knowledge of this Commission action.

56. In the light of this new policy guidance the Board concludes that a point by point examination of the planning standards of NUREG-0654, which would be necessary to obtain an exemption from full compliance with 50.47 under 50.47(c)(1), is no longer needed. Indeed the conclusion is now inescapable that the Commission clearly intends that full compliance with the 16 planning standards in NUREG-0654 and the provisions of Appendix E are not required for fuel loading and low power testing at Diablo Canyon and the Board so finds.

57. In opposition to this view, Governor Brown argued that 10 C.F.R. 50.47 is a regulation of the Commission which cannot be altered by a Commission approved staff paper in the absence of further rulemaking. Thus in spite of the promulgation of SECY-81-188, the full weight of 10

C.F.R. 50.47 and Appendix E to 10 C.F.R. Part 50 still applies and any relief therefrom must be sought under 50.47(c)(1).

58. The applicant, however, points out correctly that it is not the substance of part 50.47 which has been altered but only the schedule for implementation. The regulation itself gives no such schedule. It is contained in NUREG-0737 which does not have the status of regulation.

59. Thus the Board finds that SECY-81-188 simply establishes new policy to replace old policy which was, as explained by the staff, inadvertently promulgated in NUREG-0737. The Board sees no reason why the Commission cannot correct errors in its policy statements when they are discovered. Accordingly, it must be concluded that Governor Brown's arguments are without merit and must be rejected. The Commission's policy of emergency planning for low power testing as currently stated must prevail. Full compliance with Appendix E prior to fuel loading and low power testing is not required.

60. In view of the foregoing conclusion the Board finds that emergency planning for fuel loading and low power testing must be sufficient to confer the same level of protection to the public as afforded by full compliance with the regulations at full power operation.

(iii) Risks for Low Power Operation

61. The Applicant has proposed eight tests to be conducted on the Diablo Canyon reactors. None of the tests will exceed 5% of the rated power of the reactors. In actuality four of the tests would be conducted at approximately 3% power, two at about 1.5% power, and two at zero power levels (Tr. 10727). The proposed testing would last for no more than one month and in actuality would probably take about eighteen days. (Tr. 10726-10728).

62. Two witnesses, Dr. Brunot for the Applicant and Mr. Lauben for the Staff, testified as to the factors which result in reduced risk at low-power operation as compared to full power operation.

63. Dr. Brunot testified that the risk of exposure to radiation for any member of the public is directly proportional to the core inventory of the isotope or isotopes which could contribute to that exposure. During low-power testing the core inventory of fission products is a factor of from 20-400 less than it would be for full power operation. (Brunot, testimony following Tr. 10595, p. 11).

64. One consequence of reduced fission product inventory in the reactors is that the exposure which could occur at the site boundary and low population zone (LPZ) in the event of a release are proportionally lower than could occur at full power and are well within prescribed exposure

limits. Dr. Brunot calculated potential exposures at the site boundary and LPZ and compared them to limits set by regulation (10 C.F.R. 100.11). These comparisons are shown in Table 2. (Dr. Brunot pointed out that numerous analyses have previously been made for full power operation and these show that Diablo Canyon would meet the exposure limits shown in Table 2 at full power).

Table 2

Location	Period	Exposure Limit (REM)	Calculated Exposure (REM)
Site Boundary: whole body thyroid	2 hours	25	1.25
	2 hours	300	15
LPZ: whole body thyroid	30 days	25	1.25
	30 days	300	15

65. The calculated values in Table 2 are conservative (upper limits) because: 1) only minimum reduction in fission product inventories were used to compute the exposures; 2) there are many other risk reduction factors at low power which reduce the risk more than the factor of 20 reduction used in the Table (Brunot, p. 12); and 3) the actual power profile for low power tests results in lower actual fission product generation than the profile used to calculate the values. (The values used for calculation were 5% power for a period of 1 month while actual values would range from 0 to 3% power for a period of about 18 days).

66. Dr. Brunot presented further detail on additional risk reduction factors associated with low-power testing. In addition to reduced fission product inventory these include:

- 1) Reduced decay heat after shutdown leading to risk reduction by a factor of 1-5;
- 2) Increased time available to take emergency actions leading to risk reduction by a factor of 5-10;
- 3) Reduced hydrogen production rate leading to risk reduction by a factor of 2-20;

- 4) Reduced risk of a spent fuel accident since there is no spent fuel in the facility. Dr. Brunot estimated a factor of 100 risk reduction as applied only to spent fuel accidents rather than a zero risk because after startup there is, of course, a small amount of spent fuel present;
- 5) Lack of activated corrosion products leading to risk reduction by a factor of 1-2;
- 6) Lack of radioactive inventory in waste systems leading to risk reduction by a factor of 20-500 for accidents involving leaks or ruptures in those systems;
- 7) Lack of radioactive inventory in steam generators and secondary systems leading to risk reduction in the range of 20 to 40 for accidents involving steam line breaks, feedwater system breaks, steam tube ruptures, and other secondary system accidents;
- 8) Few failures due to wearing out of pumps, valves, seals, and other components since they are in the early stages of their useful life, leading to risk reduction factors in the range of 1-2.

67. Dr. Brunot also considered factors which could lead to increased risk of accident during the testing period. The factors he considered were: 1) Break-in failures in which greater than normal outages would be expected because the testing will constitute the first challenge to systems and components; 2) Increase in risk due to the fact that some features of the emergency plan are not complete and; 3) Uncertainties in performance parameters for components and systems because final testing will still be done during the low power period. These items contributed to increases in risk by factors in the range of 1-5.

68. Dr. Brunot concluded from his analysis that 1) the factors tending to decrease risk are much greater than those tending to increase risk at low-power operation, and 2) the overall risk of events leading to accidental releases as well as the quantity of radioactive materials involved is greatly reduced. (Brunot testimony following Tr. 10595, pp. 6-9).

69. Dr. Brunot examined the risk to the public for a TMI equivalent - accident, taking into account the low population density in the vicinity of the plant. Estimated maximum and average (0-5 mile) individual radiation doses were 4 and 0.6 millirem respectively. These were compared to a background of 150 mrem/yr. and Environmental Protection Agency (EPA) protective action guides 1000-5000 mrem. He also estimated population doses of 16 person rem (10-50 miles) and total radiation-induced cancer

deaths of 0.008 as compared to natural cancer deaths in the population of 42,000. (Brunot Tables II and III). Dr. Brunot stated that in comparing accidents emergency planning zones could be smaller for low-power testing than those required for full-power operation and achieve the same standard of protection of the public. This was based only on the reduced fission product inventory at low power. (The fission product inventory ranges from a factor of 20-400 lower than that at full power. The factor of 20 was used to reach conclusions on emergency planning zones).

70. Using documented tables of dose versus distance or air concentration versus distance he concluded that:

- 1) Any dose criteria which can be met at 10-30 miles for accidents at full power operation can be met at less than 6 miles (the LPZ distance) for the same accident at low power. (This encompasses the plume exposure planning zones of the State of California and the Federal government;
- 2) Any dose criteria which can be met in the 50 mile distance recommended for ingestion pathways at full power can be met in less than 10 miles at low power.

Furthermore, planning for ingestion pathways is in actuality not needed beyond the LPZ because the core inventory of long-lived isotopes is reduced up to 400-fold rather than by a factor of 20. (Brunot, Table 1). Planning for iodine exposure through the milk pathway is not needed since no dairies exist within the LPZ. (Brunot, pp. 19-20).

- 3) At low power, exposures within the LPZ would not exceed any dose criteria for emergency planning which had been established for full power out to 30 miles.

71. Mr. G. Norman Lauben provided additional testimony on risk reduction of low-power testing as compared to full power operation. Mr. Lauben stated on cross-examination that his analysis was based on estimates of relative risk as contrasted with probabilistic risk analysis in which absolute probabilities of specific accident events are calculated using fault trees or event trees. In relative risk analysis only the change in risk which is associated with a change in operating mode (i.e. low power compared to full power operation) is calculated. Relative risk analysis is insensitive to possible errors in assessment of absolute risk and remains valid even if such errors exist. (Tr. 11100-11101).

72. Mr. Lauben testified that the NRC Staff has examined the risk of low-power testing in the Diablo Canyon SER Supplement 10 (NUREG-0675). The Staff found that there are three major factors which contribute to a substantial reduction in risk for low-power testing as compared to continuous full-power operation. First, there is additional time available for the operators to correct the loss of important safety systems needed to mitigate relatively high risk events, or to take alternate courses of action. Secondly, there is reduction in risk associated with the significant postulated events during the low power testing program. Third, there is a reduction in required capacity of mitigating systems at low power. (Lauben testimony following Tr. 11014, p. 2),

73. Mr. Lauben testified further that the dominant events that could occur during low-power testing are: 1) small break LOCAs with loss of the emergency core cooling system (ECCS), 2) transients with total loss of feedwater, and 3) failure of double check valves between the reactor coolant system (high pressure) and the residual heat removal system (low pressure) which results in a LOCA (inter-system LOCA) outside containment, i.e., the interior of the reactor vessel communicates directly with the environment.

74. Mr. Lauben estimated the reduction in probability of occurrence for a number of postulated events. Modeling studies show that for small (4-inch coldleg break) LOCAs with loss of ECCS, boiloff would not begin for one hour and core uncover would be delayed until about three hours at low power. Severe core damage would not begin until after 15 hours. The coolant flow required to dissipate decay heat at ten hours following a LOCA would be only eight gpm which is within the capacity of the centrifugal charging pump used for normal make-up operations. He concluded that the probability of a small LOCA resulting in excessive fuel damage and significant radiological release is reduced by a factor of 400-1600 for low-power operation as compared to full-power operation. (Lauben, p. 7).

75. Mr. Lauben also considered other transients including loss of feed water, steam line break, steam generator tube rupture, rod ejection and ATWS. Risk reduction associated with loss of feed water events is lower by a factor in the range of 1,000 to 20,000 for low power as compared to full power since it would take 2 1/2 days for the steam generators to boil dry, thus allowing time for corrective action. Risk reduction for other transients is similar and these transients do not become dominant at low power. The worst ATWS event is total loss of feed water followed by failure to scram. Complete boiloff would occur in 45 minutes. However, the operator could initiate boron injection to terminate the event. He would also have time to diagnose and correct failure to scram. This event has a probability of occurrence of 10^{-7} per year and cannot be considered credible. Based on his

review of the fuel load and low-power test program, which took into account reduced fission product inventories at low power and additional response time available to plant operators, Mr. Lauben stated that the reduction in risk is a factor of 400-1500 as compared to full power. If account is taken of the fact that the test program will be performed at a maximum of 4% power for 20 days (instead of 5% power for six months) an additional factor of 2 improvement is gained resulting in risk reduction estimates in the range of 400-3000.

76. Joint Intervenors and Governor Brown take issue with the "reduced risk" testimony of Dr. Brunot and Mr. Lauben. Both assert that for the purposes of emergency planning one must assume that a serious accident will occur and one must be prepared to respond. It is impermissible to treat emergency planning as of virtually no concern on the basis of "reduced risk".

77. The definition of risk contributes in part to this controversy as well as does the sometimes careless use of the term in testimony. Mr. Lauben defined "risk" (to the public) as the product of the probability of an event occurring and the consequences of that event. Thus risk reduction can occur if either the probability of an event or the consequences of an event is reduced or if, as considered by the witnesses both factors are reduced simultaneously during low power testing.

78. The definition of risk using a conceptual equation based on the definition ($\text{Risk} = \text{Probability} \times \text{Consequences}$) clarifies how risk may be reduced and how the witnesses attempted to demonstrate reduction. Dr. Brunot's testimony showing reduced fission product inventory clearly relates to the reduction of consequences of release to the public simply because there is at least a 20-fold smaller inventory of fission products relative to full power. That portion of the testimony does not address probabilities of events. Nevertheless, risk is reduced from that factor alone. Other factors cited also appear to address predominantly the consequences of accidents due to lesser amounts of radioactivity present in the reactor at low power.

79. Mr. Lauben, on the other hand, emphasized a different approach. His testimony, while considering reduced fission-product inventory, explicitly addressed the probabilistic aspect of the risk definition. His estimate of reduced risk is based upon reduced probabilities of events occurring at low-power testing relative to full-power operation. In Mr. Lauben's approach, even if the consequences of a fission-product release were the same at low power as at full power, the risk to the public would be reduced by the amount of reduction in the probability of the events.

80. The testimony of the two witnesses combined, however, demonstrates that both terms of the risk equation diminish substantially at low

power: the consequence term by a factor of at least 20 and the probabilistic term for transients by factors in the range of 400-1500.

81. Both witnesses admitted that their risk reduction and analyses involved engineering judgment on their part. This is evident in the ranges of probabilities of events cited which represent uncertainty in the estimates. The Board finds it unnecessary and perhaps impossible to reach a decision on the exact reduction in risk associated with low-power testing. All parties agree that risk is reduced. It is adequate for the purposes of emergency planning to conclude that the risk to the public is several hundred fold below that of full-power operation

82. Both Joint Intervenors and Governor Brown find several flaws in the risk analysis actually performed. Mr. Lauben's risk reduction estimates are said to be overestimated because he compared 10-20 days of low-power operation with 30-40 years of full-power operation. Mr. Lauben made such a comparison in oral testimony and concluded that there was a 1,000,000-fold reduction in risk when so compared. However, his estimate of 400-1500 fold reduction is based on risk per unit time (5% power for six months). He stated that had he considered the actual power profile (3-4% power for 18 days) the risk reduction would be even greater. His estimates are therefore conservative and not inappropriate. The actual risk will be less than his estimate.

83. Both parties object to the use of relative risk assessment (i.e. the calculation of risk reduction relative to full power) on the basis that it is meaningless if the absolute risk of full power operation is not stated or estimated. Witnesses Brunot and Lauben did in fact rely on relative risk analysis in their testimony and neither attempted to estimate either the absolute risk of full power or the absolute risk of low-power operation. The weight of testimony from both witnesses was simply that low-power testing for a relatively few days is substantially less risky to the public than is full-power operation.

84. That conclusion, however, is not without meaning. First, safety analyses for full-power operation have been performed by both Applicant and Staff and the results have been published in a number of documents, including the PSAR, FSAR, the environmental report, and the Staff FES and SER. (Brunot at 10). These analyses cover operation up to full power and therefore include risks of low power operation. Second, the absolute estimates, if they existed, would not be helpful to a decision in this case since risk estimates are an intermediate, not final, result. A license for full-power operation will be granted if full compliance with the regulations is demonstrated. A license for operation at less than full power can be granted with less than full compliance with the regulations governing emergency planning under 10 C.F.R. 50.47(c)(1). Relative risk estimates are therefore

useful for the purpose of determining the relative degree of emergency planning which is needed to protect public health and safety at reduced power. We, therefore, do not find the relative risk methodology employed by applicant and staff inappropriate or fundamentally flawed. Governor Brown objected to Mr. Lauben's analyses, which appeared to be based on extrapolation of WASH-1400 methodology which had been rejected by the Commission. Mr. Lauben further stated that WASH-1400 was used to identify dominant accident scenarios and not for numerical conclusions. Furthermore, Mr. Lauben explained that the staff had analyzed accident sequences to be sure that additional transients did not become dominant at low power. (Lauben, p. 8). Mr. Lauben stated further that current use of probabilistic analyses is based on development of the methodology which has taken place since WASH-1400 was published and this use is not "extrapolation" as suggested by Governor Brown. (Tr. 11104 and 11109).

85. Governor Brown presented an analysis of thyroid doses from hypothetical iodine-131 releases of 1% and 0.1% which could occur during low power testing. His results show doses in excess of Part 100 limits. (Brown proposed findings 21-24, p. 79). The Governor did not disclose an accident sequence or any failure mechanism which might lead to such doses but instead simply postulated an immediate release to the environment. This is contrary to 10 C.F.R. 100.11, footnote 1, which states that an applicant should assume a fission product release no greater than that which would be expected from any accident considered credible.

86. The Board finds little merit in Governor Brown's analysis. Further, this analysis underscores the fallacy in Governor Brown's argument that emergency planning requires that the Staff and Applicant must simply postulate a serious accident to begin with. The Board disagrees. Reactor safety and emergency planning must be rational. To be so risk estimates must take account of safety features design, siting, containment, reasonable operator actions and credible accident sequences. To do otherwise would permit unbounded speculation as to the magnitude and consequences of accidents. Furthermore, it does not follow from the above that taking rational account of safety features leads to "the absurd conclusion that no emergency preparedness is necessary even during full-power operation". (Brown proposed findings, p. 22). Neither staff nor applicant witnesses registered an intent to ignore emergency preparedness for low-power testing. The risk assessments serve to permit reasoned determination of emergency planning requirements which are needed to protect the public from radiation exposure at low power as compared to full-power operation.

(iv) The State of Emergency Planning at Diablo Canyon

87. Written testimony on emergency planning was prepared on behalf of the Applicant by J. D. Shiffer, W. B. Skidmore, W. B. Kaefer and R. Patterson. Mr. John R. Sears testified and submitted written testimony for the Staff. Three witnesses, Robert E. Paulus, Howard W. Mitchell and Jeffrey Jorgensen submitted written testimony and testified for Governor Brown. Joint Intervenors presented no witnesses but conducted active cross examination of Staff and Applicant experts.

88. Mr. Shiffer and his associates (PG&E Panel) described emergency planning for Diablo Canyon going back to 1974. A recent revision to the emergency plan, Revision 2, was submitted to the Staff in February 1980. This revision grew out of a post-TMI review by the NRC of all site emergency plans and, in the case of Diablo Canyon, included a site visit and a public meeting during the week of November 27, 1979. (Panel Testimony following Tr. 10604, p. 2). Additional information on emergency planning was submitted to the Staff in documents dated January 13, 1981 and February 27, 1981. (Sears Testimony following Tr. 11035, p. 2).

89. The additional information was reviewed by the Staff for conformance to the criteria of the 16 planning standards of 10 C.F.R. 50.47. It was also evaluated against the requirements of section III.A.1.1 and III.A.1.2 of NUREG-0694 which was later superseded by NUREG-0737. The Staff's evaluation and conclusions are reported in Appendix B, "Emergency Preparedness Evaluation Report," to Supplement No. 14 to the Safety Evaluation Report. (NRC Staff Exhibit 25)

90. The Staff found deficiencies in the plan which it required to be corrected prior to full-power operation. The principal deficiency is that the fast alerting system has not been installed, although PG&E has purchased sirens and now awaits local permits before installation can begin. (Sears Testimony following Tr. 11035, pp. 3-4). A second deficiency of significance is that the public information system has not yet been implemented. (Sears, p. 4). There are other deficiencies in the plan which PG&E has documented in Joint Intervenor's Exhibit 111. The Applicant has committed to correct all deficiencies prior to full-power operation. (Tr. 10660).

91. Mr. Sears testified that the fast alert system was not significant for low-power testing because it is designed to give notice within 15 minutes of situations in which offsite radiation release might occur in less than 30 minutes. At low power, release of radioactive material during a LOCA would not take place for at least 15 hours and a fast alert system would not be needed. Since the public information system is only needed to inform the public on the fast alerting system it also would not be needed until the fast alert system was installed. (Sears, p. 4).

92. The PG&E panel testified that public notification on emergency procedures to be in effect during low-power testing would be issued as soon

as it was determined whether the fast alert system could be installed prior to fuel load. (Tr. 10800).

93. PG&E is now preparing revision 3 to the site emergency plan. This will address all remaining criteria of NUREG-0654 as they relate to full-power operation. The State of California and San Luis Obispo County are also revising their nuclear emergency plans to meet the requirements of NUREG-0654. (PG&E Panel, p. 3).

(v) Applicant's Emergency Preparedness

94. The PG&E Panel provided detailed evidence on the applicant's emergency preparedness in their prepared testimony. (PG&E Panel, p. 1-42).

95. The onsite organization for dealing with emergencies is headed by a Site Emergency Coordinator. He has specific assigned responsibilities which include assessment, corrective, and protective actions to be taken by company personnel prior to activation of the Corporate Emergency Response Plan. This position is initially assumed by the shift foreman. Later in an emergency the position will be assumed by a senior member of the plant staff such as the plant manager. However, command of the control room will remain with the shift foreman or other senior reactor operator. The site has a reservoir of personnel, many of whom are graduate engineers, to deal with emergencies. At a minimum there will be two Westinghouse engineers and three PG&E engineers on each shift in addition to the normal shift crew during fuel loading and low-power testing. Key corporate officials will be deployed to the offsite emergency operations facility to coordinate and direct the overall company response in the event of an emergency.

96. The company has established 1) an Onsite Technical Support Center (TSC), 2) an Onsite Operation Support Center (OSC), 3) an Offsite Emergency Operations Facility (EOF), and 4) a Corporate Incident Response Center (CIRC) in San Francisco.

97. The permanent TSC is completed and will be operational prior to fuel loading. The witnesses described the facility with respect to seismic design, space accommodations, ventilation systems, lighting equipment, computer monitoring of plant parameters, closed-circuit TV monitoring of the control room and a radiological counting laboratory. The staff reviewed the TSC in SER Sup. 10 (Staff Exhibit 21) and concluded that it had reasonable assurance the facility would meet its requirements.

98. The OSC has been established in the existing plant security building. The OSC is provided with communication facilities, radiological monitoring equipment, emergency kits, and evacuation kits. (Tr. 10676). It serves as

a staging area for personnel during an emergency. The Staff review in SER Sup. 10 concludes that the facility meets NRC requirements.

99. The EOF is an interim facility consisting of a trailer located adjacent to the San Luis Obispo County Sheriff's Operations Center about 11 miles northeast of the site. It provides for management of the overall company response to an emergency. The interim facility has been approved by NRC for fuel loading and low-power testing.

100. No direct evidence was presented by opposing parties showing that the TSC, OSC or EOF did not meet NRC regulations or requirements for low-power testing.

101. The PG&E Panel described the onsite emergency communications system. Telephone communication consists of three normal business telephone lines, four unlisted telephone lines and a recently installed computer branch exchange (CBX) direct dial system. The CBX system has a number of ties throughout the plant to provide independent pathways. Special features include one-way trunks from the plant to the company's San Francisco offices and limited-access trunks to insure availability and executive override features on high priority phones. Dedicated phones link the control room to NRC, the State Office of Emergency Services, and the County Emergency Operations Center.

102. Radio communication systems were also described which provide for short range (onsite) and long range communications to several offsite locations and communication with mobile units. A second radio system for health physics use was described. This system is used in the field by mobile units and utilizes mountain top radio sites for extended coverage. A third radio system has been provided for plant security.

103. The post-LOCA radiological monitoring program consists of 32 sampling stations (15 onsite and 17 offsite). All stations have thermoluminescent dosimeters (TLD's) and 6 have air sampling equipment (3 onsite and 3 offsite). Two "real time" instruments (instruments which give an immediate reading of dose rate) are installed offsite and 9 others are awaiting installation (2 onsite and 7 offsite). The offsite monitoring stations are arranged in a ring around the plant beyond the LPZ. (Applicant Exhibits 66, 67, 68, 69). The real-time instruments will initially be read at their field location but later they will transmit data to a central computer. County as well as Company personnel will be able to read these instruments at their field location.

104. Additional monitoring capability is provided by a mobile van which is equipped with special sampling and nuclear measurement systems. Instrumentation in the van can be used to analyze air, water, milk, food and other materials for radioactivity. The van has been delivered and testing is near completion. Training is being conducted for both company and

County Health Department Personnel. A meteorological tower and computer is in operation to provide real-time atmospheric dilution factors to a downwind distance of 50 Kilometers.

105. An interim post-LOCA sampling system is being installed at the plant and will be operational prior to fuel load. It is designed to collect radioactive samples from plant process streams without exposing workers. The system provides for remote sample collection and manipulation. Both radiological and chemical analyses can be performed on samples. This system will be replaced by an improved permanent system in July of this year.

106. Diablo Canyon has first aid and decontamination areas for handling minor injuries. It also has several local physicians on its panel and medical facilities on its panel for handling industrial injuries. Arrangements with the San Luis Obispo ambulance service and French Hospital have been made for transport and treatment of seriously injured contaminated persons. The hospital has facilities and procedures for treating contaminated persons. Ten members of the hospital staff have received training in handling of radiation accidents by emergency personnel given at Oak Ridge, Tennessee. Additional training has been conducted at the French Hospital by the company radiological medical consultant. Drills for transport and treatment of simulated accidents victims were conducted at the hospital in 1977, 1979, and 1980. Backup medical support at St. Francis Memorial Hospital in San Francisco exists through agreements in existence since 1979.

107. The public warning system now consists of warning by house-to-house contact and loudspeaker equipped vehicles. Emergency instructions will be broadcast by an Emergency Broadcast System (KVEC in San Luis Obispo). This warning system will be in effect until it can be replaced by some 85 radio controlled sirens which will be located throughout the State of California Emergency Planning Zone. The sirens are available for installation but all permits for installation have not been obtained. The system could be functional by August 1981 if the permits are obtained.

108. Fire brigades formed from plant operating personnel provide self sufficiency in the ability to fight fires. Members of the shift crew form one brigade and there are two others made up of maintenance personnel. Training sessions for brigade members are held monthly and fire drills are held quarterly. Sixty personnel were given experience in fighting oil, gasoline and simulated electrical fires in a special program held in January 1981. The plant is equipped with automatic sprinkler systems, hose-reel systems, CO₂ systems, a halon system and portable fire extinguishers.

109. The California Department of Forestry is expected to provide backup fire protection. Their assistance is needed for fighting brush fires

onsite. They are not the primary fire-fighting group for in-plant fires; however, their assistance would be requested for any fire which could not be controlled within 10 minutes by plant fire brigades.

110. The California Department of Forestry (CDF) rescinded its agreement to fight fires at Diablo Canyon in a letter dated April 20, 1981. Mr. Robert E. Paulus, Deputy Director of the California Department of Forestry for Fire Protection and Technical Services testified on this matter for Governor Brown. The agreement was rescinded because inadequate equipment and inadequate training existed to enable CDF personnel to fight fires at Diablo Canyon. (Paulus Testimony following Tr. 10895, p. 2, and Joint Intervenors' Exhibit No. 116).

111. On cross examination Mr. Paulus stated that his concern for inadequate equipment (primarily radiological monitoring equipment and self-contained breathing apparatus) was now resolved. (Tr. 10937). His concerns about CDF personnel training were also resolved because a radiation training course for 60 CDF employees then being conducted would meet their needs. (Tr. 10908). All that remains to satisfy CDF concerns is to complete review and testing of a pre-fire plan. Mr. Paulus estimated that this could be done by early July. Upon completion of those items a new agreement between PG&E and CDF would be executed. (Tr. 10909).

112. The PG&E panel described a number of drills and training exercises conducted by the company. These have involved both site and county personnel and included tests of ability to transport an accident victim to the hospital, mobilization of site personnel, evacuation of site personnel, field monitoring, radio communication and coordination with county personnel.

113. A full scale exercise of company, State and local emergency plans is planned for August 1981.

114. The PG&E panel presented a detailed description of their methods for determining the size of the emergency planning zone for plume exposure pathway. The method is based on a mathematical dilution model for radioactive releases to the atmosphere. Based on the fact that the core inventory of radionuclides is reduced by a factor of 20 at low power it was calculated that the size of the plume emergency planning zone would be reduced by a factor of about 10 relative to full power. Thus a dose that would occur for a given release at full power out to 10 miles would occur at 1 mile for low power. Doses to thyroid or whole body at the site boundary (800 meters) for all analyzed accidents are computed to be below exposure criteria contained in the 1978 State of California Emergency Response Plan. Doses at the boundary of the LPZ (6 miles) would be well below the exposure criteria. The panel concluded that it is extremely unlikely that

offsite protective action would ever be required beyond the LPZ due to an accident at low power. (PG&E Panel p. 35-37). In oral testimony Mr. Schiffer stated that the LPZ is in fact the zone being used by the company for emergency planning at low power. (Tr. 10838).

(vi) County Emergency Plans

115. The Panel testified that San Luis Obispo County Emergency Plans provide for evacuation of the LPZ in the event of an emergency. There are approximately 65 permanent residents of the LPZ. In addition there may be up to 1500 visitors to Montana de Oro State Park which is in the northern portion of the LPZ. (PGandE Panel p. 38-39).

116. The Sheriff of San Luis Obispo County has the lead role in conducting an evacuation of the LPZ. He has the authority to order an evacuation based on a recommendation of the Plant Emergency Coordinator and he has the responsibility to conduct the evacuation. He would use a house-to-house notification for residents of the LPZ. This could be completed in several hours. (Tr. 10839-10841).

117. Evacuation of the State Park would be coordinated with State Park personnel. Persons in remote sections of the park can be notified by personnel on foot or using horses. (San Luis Obispo County Nuclear Power Plant Emergency Evacuation Plan, 1976, p. 35). Mr. Sears also testified that the Sheriff has an agreement with Hunter Liggett Air Force Base for use of a helicopter which, when equipped with bullhorns could be used to warn persons in the park. The helicopter can fly in adverse weather. (Tr. 11068).

118. Sheriff Whiting of San Luis Obispo County testified that his department has an emergency plan for evacuation of the LPZ and he believes it can be executed. (Tr. 11323, 11337). The plan was admitted as Board exhibit number 5. (Tr. 11328).

119. The Board has examined the plan entitled Standard Operating Procedures for Nuclear Power Plant Emergency Response (San Luis Obispo County Sheriff's Department, dated March 1977). It contains descriptions of agency responsibilities, an organization chart, the Sheriff's personnel assignments, alerting procedures, departmental functions, coordination with other agencies, and details of available manpower, materials and equipment, and supporting systems. Instructions for activating and terminating emergency response are contained. Numerous attachments provide additional check lists, procedures, resident lists (deleted from the plan submitted to the Board, Tr. 11331),² agency notification lists and evacuation maps. The plan gives this Board reasonable assurance that the

²We note that the list of residents in the LPZ and their home numbers need to be updated prior to low-power testing. (Tr. 11337).

Sheriff has the authority and capability to carry out an evacuation of the LPZ in the event of a radiological emergency.

120. The Staff has requested PG&E to address protective action and implementation during an earthquake in the revised site plan for full-power operation. FEMA has made a similar request covering areas around the site as part of their review of State and Local emergency plans for full power. (SER Sup. 14, Staff Exhibit 25). This plan has not been requested for low-power testing. Mr. Sears testified that PG&E has committed to provide the requested analyses. A contractor report was due in mid-May but had not yet been provided to the parties. The applicant will revise the emergency plan to include the contractor's recommendations. (Sears, p. 7).

121. Mr. Jeffery Jorgensen, a member of the County Board of Supervisors, testified for Governor Brown that the County Emergency Response Plan is deficient in a number of ways. His objection is based on a view that although the County board adopted a plan in 1976 it has never been implemented and that it is essentially a paper plan. (Tr. 10917). His affidavit lists a number of items in the current plan which are in his view inadequate. These include deficiencies in training of county personnel, communications and equipment, lack of emergency exercises and public information program and inadequate medical preparedness. (Jorgensen affidavit following Tr. 10901, p. 2).

122. On direct examination Mr. Jorgensen stated that after TMI the county had put no effort into its 1976 plan to upgrade it but had decided to await the development of new regulations and then use its resources to develop a new plan. The county has hired a consultant to develop the new plan which will not be adopted till December 1981. (Tr. 10918-10921). A draft administrative plan was available on May 1, 1981. (Tr. 10976).

123. Mr. Jorgensen's concerns were primarily for the status of county-wide planning and he stated he was unfamiliar with the Sheriff's specific implementing plan for the LPZ. (Tr. 10973).

124. The Board finds little reason to doubt that the 1976 county emergency plans might be found defective for full-power operation by current standards. Mr. Jorgensen's past efforts to persuade the county to improve its plans appear to the Board to be well founded in view of the development of post-TMI regulations and guidance previously discussed in this decision. Without comment on the likely adequacy of the plans under current development it appears to the Board that undertaking that development is a reasonable response to the promulgation of new regulations. Mr. Jorgensen's testimony, however, does not specifically address defects in planning related to low-power testing nor does it take into account testimony about the Sheriff's plan, the justification for the

designation of reduced planning zones or the overall reduced risks associated with low-power testing.

125. Dr. Howard Mitchell, who is Health Officer of San Luis Obispo County, testified as a witness for Governor Brown. Dr. Mitchell is concerned that the county does not have adequate radiological monitoring equipment or communication equipment and that the County Health Office is inadequately staffed to respond to an emergency at Diablo Canyon. He is also concerned that the county has inadequate medical facilities for treatment of persons injured in a radiological emergency and that the county has never attempted to evacuate persons from the LPZ. (Mitchell affidavit following Tr. 10898, p. 1-2).

126. Dr. Mitchell testified that he was pleased with the PG&E radiological monitoring equipment and its training of county employees. However, he has inadequate monitoring equipment for use by his department. (Tr. 10910). He also does not have communications equipment for his staff although he agrees that the PG&E mobile van has excellent communications equipment. His staff is being trained in use of the mobile van. (Tr. 10958-10961).

127. Dr. Mitchell expressed a concern for the ability to evacuate bedfast persons by ambulance; however, he stated that there were no such persons in the LPZ. Within one mile beyond the LPZ there are about 25 such persons. (Tr. 10964).

128. Dr. Mitchell's remaining concerns are that he would like more hospital facilities and physicians, more staff and more ambulances for handling of emergencies. (Tr. 10910, 10912). He did not provide any additional data on these perceived needs relative to low-power testing.

129. The Board does not doubt that the County Health Department could productively use more monitoring and communications equipment than it has in the event of an emergency. Dr. Mitchell's concerns as a responsible health officer not only for equipment but also for health care facilities is understandable. His testimony, however, provides no additional factual information related to low-power testing. It does not take account of reduced risk, reduced consequences of release, the small population within the LPZ or the small size of the emergency planning zone for low-power testing.

(vii) Conclusions on the Adequacy of Emergency Planning

130. From the testimony and evidence presented in this case, the Board finds that the risks from fuel load and low-power testing are considerably reduced from that of full-power operation of the Diablo Canyon reactors. This risk reduction is based upon several factors which include a lower fission-product inventory, a greater amount of time for operator response to

mitigate and/or terminate an accident condition, and a reduced likelihood of the occurrence of serious sequences leading to radiological release.

131. These factors reduce the size of the area which might be affected by a radiological emergency and for which emergency planning measures must be taken and the level of emergency response preparedness which would have to be in place. The choice of the six-mile LPZ as the basic area around the plant for emergency planning is justified and reasonable because of the reduced risk.

132. The Board finds that the current level of emergency planning on the part of the Applicant and the county provides substantial radiological protection to the public which is at least equivalent to the protection which would be afforded by full compliance with emergency planning regulations at full power operation. These plans are sufficient to respond effectively to any radiological emergency which might reasonably be expected to occur during low-power testing.

133. The Board also finds that the current level of emergency preparedness is consistent with NRC requirements as set forth in 10 C.F.R. 50.47 and NUREG-0737 as recently changed by the Commission on April 22, 1981 in SECY 81-188. The deficiencies in the PG&E, local and state plans are not significant for operation of Diablo Canyon at power levels not to exceed 5 percent of full power.

(2) Relief, Safety and Block Valves

Contention 24 reads:

Reactor coolant system relief and safety valves form part of the reactor coolant system pressure boundary. Appropriate qualification testing has not been done to verify the capabilities of these valves to function during normal, transient and accident conditions. In the absence of such testing and verification, compliance with GDC 1, 14, 15, and 30 cannot be found and public health and safety are endangered.

(i) Discussion

134. The Board accepted this contention in its prehearing conference order of February 13, 1981 only to the extent it addressed the issue of when the testing of the block valves must be completed. In the Board's April 30, 1981 Memorandum and Order (Granting PG&E's and NRC Staff Motions for Summary Disposition of Joint Intervenors' Contentions 5 and 13; Denying their motions as to Contentions 4 and 24), the Board put the parties on notice that it was not appropriate in this proceeding to go beyond the Contention to attack the Electric Power Research Institute (EPRI) testing program itself. The Board did indicate that the significance of some

reputed block valve failures experienced during EPRI testing might be addressed by the parties.

135. Candee L. Gottshall, Richard A. Muench, John L. Carey and Thomas E. Auble presented testimony on this contention on behalf of PGandE. Frank C. Cherny presented testimony on behalf of the NRC Staff. Joint Intervenors and Governor Brown did not present any direct testimony on this contention.

136. In Diablo Canyon's reactor coolant systems the pressurizer of each unit is equipped with three Masoneilan 20,000 Series (2NPS) power operated relief valves (PORVs), three Crosby HB-BP-86 (6M6) safety valves and three Velan #B10-3054B013M block valves. (Cherny Testimony following Tr. 11216, p. 10 and Muench-Gottshall Testimony following Tr. 11157, pp. 1, 3 and 5).

137. The PORVs are designed to be the first valves to respond to relieve steam to limit the maximum pressure in the reactor coolant system during full-load rejection transients without reactor trip. The PORVs are the first valves to respond because the set point for the PORVs is lower than the set point for the safety valves. Under normal conditions, the PORVs remain closed. (Muench-Gottshall Testimony following Tr. 11157, p. 3 and Tr. 11174). The safety valves also remain closed under normal operating conditions. If the PORVs function as designed, the safety valves will not open. However, if the safety valves were required the capacity of two safety valves is sufficient to mitigate system overpressure; the capacity of the third safety valve provides redundancy. (Id., p. 1). Upstream of the PORVs are the block valves which are provided to isolate the inlets of the PORVs for maintenance and testing.³ (Id., p. 5).

138. Candee L. Gottshall and Richard A. Muench from Westinghouse Electric Corp. testified on the reliability of the original design and testing of safety valves, relief valves and block valves for Diablo Canyon. The three types of valves were designed in accordance with USAS-B16.5-1968, Steel Pipe Flanges and Flange Fittings. (Id., p. 2, 4 and 6). In the case of the safety valves, they were also designed to meet the requirements of the ASME Boiler and Pressure Vessel Code, Section III. (Id., p. 1-2). Additionally, the safety valves, relief valves and block valves were qualified to withstand seismic loadings equivalent to 3.0g in the horizontal direction and 2.0g in the vertical direction and to withstand loading due to the Hosgri seismic event accelerations in addition to normal operating and deadweight loads. Prior to shipment to the Diablo Canyon plant, the three types of

³Although the Board finds no explicit statement to this effect in the record it is implicit in the test program requirements that the PORV block valves must also be capable of isolating a PORV which fails to close after relief of a pressure transient.

valves successfully completed liquid penetrant inspection and a hydrostatic test. (Id., p. 2, 4 and 6). Safety valves of the same design as Diablo Canyon were successfully pressure tested at Pacific Gas and Electric's Contra Costa plant in a configuration that was representative of the actual Diablo Canyon plant configuration. (Id., p. 2). After the relief valves were installed at Diablo Canyon, the relief valves were successfully tested during hot functional testing. (Id., p. 5).

139. NRC Staff witness Frank Cherny presented testimony on the safety standards for the PORVs, safety valves and block valves. PORVs and safety valves must comply with General Design Criteria 1, 14, 15 and 30. In reviewing for compliance with the criteria, the NRC Staff used the following standards: (a) Standard Review Plan (SRP) 3.9.2 "Dynamic Testing and Analyses of Systems, Components, and Equipment;" (b) SRP 3.9.3 "ASME Code Class 1, 2 and 3 Components, Component Supports, and Core Support Structures;" (c) Regulatory Guide 1.48 "Design Limits and Loading Combinations for Seismic Category 1 Fluid Systems Components;" and (d) Regulatory Guide 1.68 "Pre-operational and Initial Startup Test Programs for Water-Cooled Power Reactors." (Cherny Testimony following Tr. 11216, p. 3). The NRC Staff has found that the Applicant has demonstrated compliance with GDC 1, 14, 15 and 30 except for qualifying the PORV and safety valves with respect to loadings which result from transition flow from steam to water or solid fluid flow. (Id., p. 6 and 7).

140. In response to the requirements in Item II.D.1 of NUREG-0737, a test program to cover loadings which result from transition flow from steam to water and solid fluid flow for PORV and safety valves has been developed by the EPRI and was submitted to the NRC on December 17, 1979. A revised version with modifications was submitted on July 8, 1980. (Id., p. 6 and Carey-Auble Testimony following Tr. 11159, p. 1 and 2).

141. John J. Carey, of EPRI and Thomas E. Auble, on loan to EPRI from Westinghouse, participated in developing the EPRI test program. They explained the status of the on-going testing. A Masonilan Model No. 20,000 PORV and a Crosby HB-BP-86 (6M6) safety valve which are representative of the PORVs and safety valves at Diablo Canyon were selected for testing. (Carey-Auble Testimony following Tr. 11159, p. 3 and 4). The test conditions for these valves include steam, subcooled water, water seal, and steam to water transition discharge conditions. (Id., p. 4). EPRI testing has not been fully completed on the PORVs and safety valves. However, the PORVs have successfully passed the steam test that have been performed. (Id., p. 6). The remainder of the test program for the PORVs and the safety valves at Diablo Canyon is presently scheduled to be completed by July 1, 1981. (Id., p. 2 and 3).

142. The EPRI panel noted that, although not part of the EPRI test program scope, seven PORV block valves were preliminarily steam tested. Among those seven valves was the block valve type and model used in the Diablo Canyon Plant. (Id., p. 7). Although three of the various models of block valves which were tested failed to fully close, those models are not utilized as block valves in the Diablo Canyon Nuclear Power Plant. The Diablo Canyon block valve models successfully completed the preliminary test. (Id., p. 7 and 8). At the present time it is not clear what, if any, additional block valve testing will be required to meet Item I.D.1 of NUREG-0737. Although the block valve testing to date has not been under water and transition flow conditions, Mr. Cherny noted that it is possible that the testing completed to date on block valves may envelope the conditions of concern. (Cherny testimony following Tr. 11216, p. 12-13, Tr. 11236, 37).

143. The testimony in this proceeding indicated the Staff's belief that the EPRI program, upon proper documentation, will meet the requirements of NUREG-0737 as it addressed relief and safety valve testing. (Cherny Testimony following Tr. 11216, p. 6). In the event there is a failure of either the relief or safety valves during the remainder of the EPRI program, the necessary corrective actions will be ordered by the NRC. (Id., p. 6).

144. NRC Staff witness Norman Lauben, who testified on the low risk associated with low-power operation, also pointed out that the safety significance of block valve failure during low power is negligible. This is due to the fact that if the relief valves are not challenged the block valve position has no significance. The only condition causing such a challenge are transients involving loss of feedwater which are not of particular concern at low power. Even if both the relief valve and block valve stuck open, this would only amount to a small loss-of-coolant accident (LOCA) which is not a significant concern at low power. In fact, it would be a smaller LOCA than the one used in the analysis of risk reduction for small break LOCAs discussed previously in Lauben's testimony (Lauben Testimony following Tr. 11014, p. 9, 10).

145. Westinghouse has performed analyses of postulated LOCAs in the pressurizer vapor space for a plant substantially identical to the Diablo Canyon Plant. These analyses were performed for 100% power level. (Gottshall-Muench Testimony following Tr. 11157, p. 7; Tr. 11189-11191). The analyses assumed that the three PORVs stuck completely open and that the block valves failed to close. Similar analyses enveloped the extremely unlikely case that the three pressurizer safety valves were stuck completely open. In all instances, no core uncover was predicted to occur (Id., pp. 7, 8; Tr. 11189-11191). In short, even if all three of each type of valve were postulated to fail completely open the public health and safety

would not be endangered. Thus, according to the witness completion of additional testing of safety valves, PORVs, and block valves is not required prior to fuel load, low power testing, or full power operation at Diablo Canyon (Id., p. 8; Cherny Testimony following Tr. 11216, pp. 13, 14).

146. Westinghouse has conducted a survey of Westinghouse-designed operating plants in the United States. This survey covered plants with a total of 181 reactor years of operation through October 1980, and included valves of the type used at Diablo Canyon. No instances of failure of safety, PORV, or block valves were reported by the owners of these plants and none has been reported since the time of the survey. (Id., pp. 3, 5, 6; Tr. 11189).⁴

(ii) Conclusion

147. The Licensing Board, in their prehearing conference order of February 13, 1981, admitted the contention on valves only to the extent that the Joint Intervenors and Governor Brown wished to argue that the testing program must be completed prior to fuel load. This interpretation of the contention was reinforced by the Licensing Board in their Memorandum and Order of April 30, 1981 which denied Summary Disposition of the valve contention. In that order, however, the Board did express some concern over the significance of the failure of three block valves during the EPRI testing program.

148. Under NUREG-0737, Subsection II.D.1, the testing of relief and safety valves must be completed by July 1, 1981 and testing of block valves must be completed by July 1, 1982. Joint Intervenors essentially argue that all the testing programs must be completed prior to fuel load and low-power testing of the Diablo Canyon Nuclear Power Plant.

149. As discussed above, the testing of relief and safety valves will be completed by July 1, 1981, which will predate the fuel load at Diablo Canyon. Thus, the only remaining issue under Contention 24 is whether the block valve testing should also predate fuel loading. The evidence discussed above presents no basis for requiring a testing program be conducted for block valves other than on the schedule provided in NUREG-0737.

150. The reliability of the relief and safety valves, demonstrated through design and testing, and which will be supplemented by further testing prior to July 1, 1981, demonstrates there is little risk of their failure, resulting in a challenge to the block valves, during low power testing.

151. The test in which three block valves failed only serves to reinforce the lack of necessity of altering NUREG-0737 compliance dates. Not only

⁴There has been one instance of a PORV valve failure to close in a foreign plant which was associated with the failure of a yoke. The yoke which failed is not the same as those used at Diablo Canyon and has no bearing on the Diablo valves. (Tr. 11185, 11189, 11212).

were the three valves which failed not of the type used at Diablo Canyon, but the block valve which will be used at Diablo Canyon passed those tests. In addition, it is possible the testing of the block valves which has already taken place envelopes the conditions of concern and no further testing will be required.

152. Finally, the consequence of failure of the block valve during low-power testing was shown to be a manageable event in terms of both reaction time and consequences.

153. In sum, the totality of evidence presented failed to show any urgency requiring the Licensing Board to change the requirements of NUREG-0737. Accordingly, after considering all of the evidence above in evaluating the reliability of the Diablo Canyon reactor coolant system valves for low-power operation, and in particular the following factors: the design of the valves, factor testing, seismic qualification, postulated valve failure, compliance with GDC 1, 14, 15 and 30, the safety and relief valves qualification by the EPRI test program prior to fuel load, and the safety significance of the block valve during low-power operation, the Board concludes that fuel loading and low-power testing can commence at Diablo Canyon with no adverse effect on the health and safety of the public, prior to any additional testing of the block valves.

III. CONCLUSIONS OF LAW

154. The Board has considered all the documentary and oral evidence produced by the parties. Based upon our review of the entire record in this proceeding and upon the foregoing findings of fact, the Board concludes, in all respects except resolution of the security issue, as explained in paragraph 11 of this decision, as follows:

(a) Construction of the facility has been substantially completed in conformity with the construction permit and the application as amended, the provisions of the Atomic Energy Act of 1954, as amended, and the rules and regulations of the Commission; and

(b) The facility will operate in conformity with the application as amended, the provisions of the Act, and the rules and regulations of the Commission; and

(c) There is reasonable assurance (i) that the activities authorized by the fuel load and low-power testing (up to 5%) license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations; and

(d) PGandE is technically and financially qualified to engage in the activities authorized by the fuel load and low-power testing license in accordance with the Commission's regulations; and

(e) The applicable provisions of 10 C.F.R. Part 140 will be satisfied prior to fuel load; and

(f) The issuance of a fuel load and low-power testing license will not be inimical to the common defense and security or to the health and safety of the public.

IV. ORDER

155. WHEREFORE, IT IS ORDERED in accordance with the Atomic Energy Act of 1954, as amended, and the Commission's regulations, and based on the findings and conclusions set forth herein, that the Director of Nuclear Reactor Regulation is authorized to issue a license, consistent with the terms of the Partial Initial Decision, to authorize fuel load and low power testing up to 5% of rated power generally in the form submitted by PGandE in support of the motion.

156. IT IS FURTHER ORDERED, in accordance with Sections 2.760, 2.762, 2.764, 2.785 and 2.786 of the Commission's Rules of Practice, that this Partial Initial Decision shall not become effective until 10 days from the date this decision is transmitted to the Commission and shall constitute the final action of the Commission subject to review thereof under the above-cited rules. Exceptions to this Partial Initial Decision may be filed by any party within 10 days after the service of this Partial Initial Decision. A brief in support of the exceptions shall be filed within 30 days thereafter (40 days in the case of the staff). Within 30 days after the service of this brief of

the appellant (40 days in the case of the staff), any other party may file a brief in support of, or in opposition to, the exceptions.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**John F. Wolf, Chairman
ADMINISTRATIVE JUDGE**

**Glenn O. Bright
ADMINISTRATIVE JUDGE**

**Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland
this 17th day of July 1981.**

APPENDIX A

Exhibit No.	PGandE	In Evidence
66	View Graph - On Site Monitoring Stations	10772
67	View Graph - Off Site Monitoring Stations	10772
68	View Graph - Real Time Instruments on Site	10772
69	View Graph - Real Time Instruments Off Site	10772

Exhibit No.	Joint Intervenors	In Evidence
111	PGandE Supplemental Answers to J.I. Interrogatories 9A, 11A	10619
112	FES pp. 7-1 through 7-7	
113	Proposed forms of low power licenses for Units 1 and 2	
114A	Kemeny Com. Report § "Overview"	
114B	Kemeny Com. Report § "Commission Findings and Recommendations"	
115	Rogovin Com. Report pp. 147 through 152	
116	Misc. Agreements with State and Local Agencies	

117	Letter R.L. Tedesco to M.H. Furbush 12/16/80	11059
118	Risk Assessment Review Group Report pp. viii through x	11107

Exhibit No.	Governor Brown	In Evidence
1	Memo - J.W. Macy to J.W. McConnell 3/12/80	11078
2	Letter and Report entitled "EPRI PWR Safety and Relief Valve Test Program"	
3	FEMA-NRC Memo of Understanding 1/11/80	11276
4	Letter to Harold Denton from John McConnell dated February 14, 1980	11276
5	Letter from Harold Denton to John McConnell dated February 14, 1980	11276
6	Letter to Harold Denton from John McConnell dated March 12, 1980	11276

Exhibit No.	NRC Staff	In Evidence
18	SER Supp. 7	11050
19	SER Supp. 8	11050
20	SER Supp. 9	11050

21	SER Supp. 10	11050
22	SER Supp. 11	11050
23	SER Supp. 12	11050
24	SER Supp. 13	11050
25	SER Supp. 14	11050

Exhibit No.	ASLB	In Evidence
5	Sheriff's LPZ Evacuation Plan entitled "Standard Operating Procedures for the Nuclear Power Plant Emergency Response	11329

In addition, the Board took official notice of a document entitled "SECY-81-188-Emergency Preparedness" transmitted from S.J. Chilk to William Dircks, dated April 22, 1981 (Tr. 10649), the report of the Kemeny Commission (Exhibits 114A and B) (Tr. 10595), and the Rogovin Report (Exhibit 115) (Tr. 10648).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Forrest J. Remick
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-445 OL
50-446 OL
(Application for Operating License)

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

July 23, 1981

The Licensing Board grants in part and denies in part applicants' motion to strike three contentions propounded by an intervenor in this proceeding, denies the intervenors' requests for a protective order and oral argument, and issues instructions to the parties concerning the future conduct of discovery.

MEMORANDUM AND ORDER

The Applicants filed a motion to strike CFUR Contentions 2, 7 and 8 for default on May 26, 1981. A response was filed by CFUR on June 10, 1981, opposing the motion, asking for a protective order, and requesting oral argument. The Staff in view of the fact that the severe sanction of striking contentions was sought, filed an answer on June 12, 1981 expressing an opinion on discovery matters or motions to which it is not a party.

This motion to strike is essentially based upon the Board's Memorandum and Order entered April 13, 1981. That Order consisted of two parts. In part (1), CFUR was ordered to "file complete responses" to 60 interrogatories filed by the Applicants. Part (2) ordered CFUR to

"supplement its responses" respecting 44 interrogatories "as soon as the information requested is developed or obtained" (Order, pp. 13-14).

CFUR filed its "Supplement to Answers to Applicants' First Set of Interrogatories to CFUR and Requests to Produce" on May 8, 1980. The Applicants argue that these responses by CFUR fail to comply with the Board's Order, and constitute a default under 10 C.F.R. § 2.707, for which Contentions 2, 7 and 8 should be stricken. The Staff takes the position that although CFUR has "failed to comply fully" with the Order, the better practice would be to impose the lesser sanctions of limiting CFUR's participation with respect to those contentions to which any inadequately answered or unanswered discovery requests are directed. We will first review the cited interrogatories and CFUR's responses in the context of the April 13, 1981 Order.

I. CONTENTION 2

Contention 2 states:

One or more of the reports used in the construction of computer codes for the CPSES/FSAR have not been suitably verified and formally accepted; thus conclusions based upon these computer codes are invalid (CFUR 2A).

With respect to Contention 2, CFUR was ordered to provide complete answers to 26 interrogatories. The CFUR supplement contains answers to all of these interrogatories, but Applicants contend that 15 of those answers are not responsive. The Staff essentially agreed with the Applicants' assessment of the responses, but it believed that 12, rather than 15, of the answers failed to comply with the Order. However, with the exception of the answers to Interrogatories 30, 32 and 33, which the Staff believes arguably satisfy the Order,¹ the Staff does not itself discuss or point out any alleged deficiencies in CFUR's supplemental answers. In weighing a motion for the outright dismissal of contentions for a discovery default, or even the somewhat more limited sanctions suggested by the Staff, the grounds for such motion will be carefully scrutinized. A general statement that twelve rather than fifteen answers fail to comply with an Order,² is not very persuasive.

¹NRC Staff Answer to Applicants' Motion to Strike CFUR Contentions for Default (6/12/81), pp. 4-5, fn. 4.

²*Id.*

The Applicants first argue that nine responses to Contention 2, which state that requested information is "[u]nknown at this time" because of "[i]nadequate discovery at this time,"³ constitute noncompliance with and default of the Order. The April 13 Order did direct that "straightforward answers" be given to these interrogatories (p. 5). However, the second part of that Order also recognized that many of CFUR's responses state that the requested information is not available "at this time," or it "must conduct discovery in order to supply an answer" (p. 10). The Order then directed CFUR to "supplement its answers to certain interrogatories as soon as supplemental information becomes available" (*Id.*). It therefore appears that the supplemental answers that the information is "unknown at this time" and references to incomplete discovery, are consistent with that portion of the April 13 Order.

In the instant motion, the Applicants next contend that a refusal to answer based on a claim of awaiting further discovery is not sufficient unless the discovery requests are specified. We would agree with that principle, and have so held in a recent order.⁴ However, the instant motion does not seek to compel CFUR to provide the lacking specificity, and that subject was not discussed as to CFUR or the listed interrogatories in the April 13 Order. It cannot therefore be said that CFUR has refused to comply with a Board order under circumstances that would justify the imposition of the sanction of dismissal of this contention.

The Applicants next refer to six other interrogatories dealing with Contention 2, the answers to which are alleged to constitute a default of the prior Order.⁵ We agree with the Staff that at least three responses arguably comply with prior directives.⁶ Interrogatory 30 refers to getting certain reports and computer codes "suitably verified and formally accepted." CFUR's supplement refers to its answers to Interrogatories 24 and 27, which sufficiently state its position in this regard. Interrogatory 32 seeks the basis of an answer to a previous interrogatory. CFUR's supplemental answers to Interrogatories 26 and 29 sufficiently set forth the requested basis. Interrogatory 33 concerns "conclusions" based upon the computer codes which CFUR claims are "invalid". The supplemental answer satisfies the prior directive. In addition, the supplemental responses to Interrogatories 27, 29 and 35 are sufficient when read in the context of the somewhat repetitive series of questions. The Applicants' motion is denied as to these responses to interrogatories based upon Contention 2.

³Interrogatories 15, 20, 23, 39, 46, 52, 54, 56 and 62.

⁴Memorandum and Order, entered July 20, 1981, p. 2.

⁵Interrogatories 27, 29, 30, 32, 33 and 35.

⁶NRC Staff Answer etc., p. 5, fn. 4.

II. CONTENTION 7

Contention 7 states:

Applicants have failed to adequately evaluate whether the rock "overbreak" and subsequent fissure repair using concrete grout have impaired the ability of Category I structures to withstand seismic disturbances (CFUR 6).

Applicants' motion alleges that under the prior Order CFUR was required to file 21 complete responses, but that 14 of its answers are in default of the Order.

Eight responses indicate that CFUR cannot provide answers because it has conducted "inadequate discovery at this time."⁷ For the reasons set forth at pages 151-152, *supra*, with reference to Contention 2, these responses are not contrary to the Order of April 13, 1981 and do not constitute grounds for dismissal of Contention 7.

The Applicants next contend that six responses fail to comply with the prior Order.⁸ These are responses to a series of bases questions related to support problems allegedly resulting from the overexcavation of bedrock and the placing of foreign material in the foundation. The answers of CFUR are arguably sufficient and do not constitute a basis for the imposition of sanctions.

III. CONTENTION 8

Contention 8 states:

Applicants have failed to adequately evaluate the impacts of the drawdown of the groundwater under CPSES during and as a result of plant operation (CFUR 7).

The April 13 Order directed CFUR to provide complete responses to 13 interrogatories which were directed at Contention 8.⁹ In its supplement dated May 8, 1981, CFUR stated:

"CFUR is unable to proceed further at this time with responses to Applicants' Interrogatories addressed to Contention 8. If it becomes able to proceed, CFUR will provide responses to Applicants' Interrogatories addressed to Contention 8 as soon as practicable" (p. 8).

⁷Interrogatories 108, 111, 112.c., 114, 125, 127, 129 and 132.

⁸Interrogatories 105, 112.f., 116, 118, 121 and 123.

⁹Interrogatories 133, 138, 143.c., 145, 147, 149, 150, 151, 155, 160, 163, 165 and 167.

This response is wholly inadequate and unacceptable. No intervenor can keep contentions alive at its own whim, and then provide ordered discovery only if it determines that it desires to proceed. The Board has the power under 10 C.F.R. § 2.707 to impose sanctions for defaults arising out of discovery orders. The Commission has also clearly indicated that the presiding officer has the necessary authority to "impose appropriate sanctions on all parties who do not fulfill their responsibilities as participants."¹⁰ In a recent policy statement, the Commission has also discussed the spectrum of sanctions available to licensing boards to assist in the management of proceedings.¹¹ Unjustified failures or refusals to comply with discovery orders have resulted in the dismissal of parties or contentions.¹²

CFUR has not even attempted to comply with the discovery provisions as to Contention 8 contained in the April 13, 1981 Order. In its Response to the Applicants' motion to strike, CFUR merely stated that "[w]ith respect to Contention 8, CFUR will defer to the efforts of the Staff on the issue of drawdown due to use of groundwater by CPSES" (p. 5). These statements by CFUR and its total failure to answer interrogatories relating to Contention 8, are tantamount to an abandonment of Contention 8 and a default of our discovery orders. Accordingly, Contention 8 will be dismissed.

IV. DISCOVERY DIRECTIVES TO CFUR AND OTHER PARTIES

In view of the overall responsibility of the Board to regulate the course of the hearing and the conduct of the participants,¹³ we are not willing to leave the discovery issues involving CFUR and others in their present posture. We are also mindful of the Commission's recent policy statement on the efficient conduct of all phases of the hearing process, and its encouragement of individual boards to expedite that process by using appropriate management methods.¹⁴ The following Commission statement regarding

¹⁰Commission's Statement of Consideration, 37 *Fed. Reg.*, 15127-28 (July 28, 1972). See also 10 C.F.R. § 2.718.

¹¹"Statement of Policy on Conduct of Licensing Proceedings", CLI-81-8, 13 NRC 452 (May 20, 1981).

¹²Pennsylvania Power and Light Company and Allegheny Electric Cooperative, Inc. (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 322, 339 (1980). See also Metropolitan Edison Company (Three Mile Island Station, Unit No. 1), LBP-80-17, 11 NRC 893 (1980); Northern States Power Company, *et al.* (Tyron Energy Park, Unit 1), LBP-77-37, 5 NRC 1298, 1301 (1977); Offshore Power Systems (Manufacturing License for Floating Nuclear Power Plants, LBP-75-67, 2 NRC 813, 817 (1975); Public Service Electric & Gas Company (Atlantic Nuclear Generating Station, Units 1 and 2), LBP-75-62, 2 NRC 702, 705-6 (1975).

¹³10 C.F.R. § 2.718(e).

¹⁴Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 NRC 453-454 (May 20, 1981).

the purposes of and reasonable limitations upon discovery, is brought to the attention of all parties to this proceeding:

“Board Management of Discovery

“The purpose of discovery is to expedite hearings by the disclosure of information in the possession of the parties which is relevant to the subject matter involved in the proceeding so that issues may be narrowed, stipulated, or eliminated and so that evidence to be presented at hearing can be stipulated or otherwise limited to that which is relevant. The Commission is concerned that the number of interrogatories served in some cases may place an undue burden on the parties, particularly the NRC staff, and may, as a consequence, delay the start of the hearing without reducing the scope or the length of the hearing.

“The Commission believes that the benefits now obtained by the use of interrogatories could generally be obtained by using a smaller number of better focused interrogatories and is considering a proposed rule which would limit the number of interrogatories a party could file, absent a ruling by the Board that a greater number of interrogatories is justified. Pending a Commission decision on the proposed rule, the Boards are reminded that they may limit the number of interrogatories in accordance with the Commission’s rules.

“Accordingly, the boards should manage and supervise all discovery, including not only the initial discovery directly following admission of contentions, but also any discovery conducted thereafter. The Commission again endorses the policy of voluntary discovery, and encourages the boards, in consultation with the parties, to establish time frames for the completion of both voluntary and involuntary discovery. Each individual board shall determine the method by which it supervises the discovery process. Possible methods include, but are not limited to, written reports from the parties, telephone calls, and status report conferences on the record. In virtually all instances, individual boards should schedule an initial conference with the parties to set a general discovery schedule immediately after contentions have been admitted.”¹⁵

The large number of motions and disputes relating to interrogatories and discovery lead the Board to conclude that the matter has almost gotten out

¹⁵*Id.*, at 5-6.

of hand. It is similar to the "farrago of motions, objections and rulings" described by the Appeal Board in *Susquehanna, supra*.¹⁶ Such a blizzard of paper reflects a lack of understanding that discovery is intended by our rules of procedure to be conducted by the parties, usually without Board involvement. Those rules, like their judicial counterparts, "attempt to minimize involvement by the trial board."¹⁷

To clarify and expedite further discovery in this proceeding, the Board adopts the following measures:

1. All parties are directed to confer directly with each other regarding alleged deficiencies in discovery before resorting to motions involving the Board. To this end, voluntary discovery and disclosure are highly encouraged. All motions involving discovery controversies shall describe fully the direct efforts of the parties to resolve such disputes themselves.
2. We reaffirm a rule previously adopted,¹⁸ requiring that pursuant to the provisions of 10 C.F.R. § 2.740(e)(3), all interrogatories filed by any party to this proceeding, past or future, shall be deemed to be continuing in nature, and the party to whom they are addressed shall be under a continuing duty to supplement the responses as necessary to keep them currently accurate.
3. Objections to interrogatories or document requests shall be set forth in an appropriate motion for protective order, accompanied by points and authorities sufficient to enable the Board to rule immediately upon receipt of the opposing party's answer to be filed within the (10) days (10 C.F.R. §§ 2.718, 2.730, 2.740, 2.740b, 2.741).
4. All filings scheduled by the Board shall be physically lodged with the Board and parties on or before the due date, not merely mailed on that date. Expedited or following day delivery shall be employed when necessary.
5. The sheer number, volume and complexity of interrogatories should be substantially reduced. Boiler plate formulas involving unnecessary and redundant details should be avoided. The Board will consider limiting the number of interrogatories in accordance with the Commission's suggestion above, to achieve a smaller number of better focused interrogatories.

¹⁶12 NRC at 337.

¹⁷*Id.*, at 322.

¹⁸Memorandum and Order entered July 20, 1981, pp. 4-5.

6. A failure to furnish requested information based upon a claim of awaiting further discovery is unresponsive unless precise information is given as to the nature and status of pending discovery, and a specification of the relevancy of such facts to the requested information.
7. All discovery shall be expedited to the maximum extent reasonably possible, to accommodate an accelerated hearing schedule that will be issued shortly.
8. A party who files a motion shall not have a right to reply to an answer in opposition thereto, unless prior leave is obtained from the presiding officer (10 C.F.R. § 2.730(c)). Such leave be granted sparingly, and then only upon a strong showing of good cause.
9. The parties are reminded that interrogatories are not the sole discovery method established by our Rules of Practice (10 C.F.R. §§ 2.740-2.742). A well-timed deposition can often accomplish more than six months of back-and-forth fencing over interrogatories and answers.

ORDER

For all the foregoing reasons and based upon a consideration of the entire record in this matter, it is this 23rd day of July, 1981

ORDERED

(1) That CFUR's requests for a protective order and for oral argument are denied.

(2) That the Applicants' motion to strike Contentions 2 and 7 is denied.

(3) That the Applicants' motion to strike Contention 8 is granted, and Contention 8 is hereby dismissed.

(4) CFUR is directed to supplement forthwith all of its answers to interrogatories which fail to furnish information because of incomplete discovery, by describing precisely and in detail the status of such pending discovery and the reasons why it is essential to making responsive answers.

(5) The nine rules to manage and limit discovery, interrogatories, objections, motions and the like set forth on pages 156-157, *supra*, are incorporated herein by reference, and they shall be strictly observed by all parties to this proceeding.

THE ATOMIC SAFETY AND
LICENSING BOARD

Dr. Forrest J. Remick
ADMINISTRATIVE JUDGE

Dr. Richard F. Cole
ADMINISTRATIVE JUDGE

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Forrest J. Remick
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-445-OL
50-446-OL

(Application for Operating License)

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

July 24, 1981

The Licensing Board (1) grants an intervenor's motion that it be permitted to withdraw from the proceeding; (2) dismisses as moot all pending motions by or against the intervenor; (3) designates new lead intervenors for those jointly-sponsored contentions of which the withdrawing intervenor was previously so designated; (4) explains the basis for its raising of those questions *sua sponte* (in compliance with the Commission's June 2, 1981 directions relating to issues raised *sua sponte* by Licensing and Appeal Boards); and (5) rules on the admissibility of those contentions solely sponsored by the withdrawing intervenor, dismissing certain of the contentions and adopting others as Board questions.

OPERATING LICENSE HEARINGS: *SUA SPONTE* ISSUES

In an operating license hearing, matters not put into controversy by the parties will be examined and decided by the presiding officer only where he or she determines that a serious safety, environmental, or common defense and security matter exists. 10 C.F.R. 2.760(a).

OPERATING LICENSE HEARINGS: *SUA SPONTE* ISSUES

The Commission has directed that when a Licensing Board or an Appeal Board raises an issue *sua sponte* in an operating license proceeding, it shall issue a separate order making the requisite findings, briefly state its reasons for raising the issue, and forward a copy of that order to the Office of the General Counsel and to the Commission.

OPERATING LICENSE HEARINGS: *SUA SPONTE* ISSUES

In an operating license proceeding, the power of the staff alone to decide whether any other matters (beyond those contested issues admitted by the Licensing Board) need to be considered prior to the issuance of an operating license arises only after the Board has resolved the question of potential *sua sponte* issues.

MEMORANDUM AND ORDER

I. ACORN'S MOTION FOR VOLUNTARY DISMISSAL

The Intervenor Texas Association of Community Organizations for Reform Now (ACORN) filed its motion for voluntary dismissal from this proceeding on June 16, 1981. ACORN stated in its motion that it "has limited funds and cannot afford to pay" what it deemed to be the "massive" costs involved in paying "the consultants and expert witnesses who are necessary to continue this litigation." ACORN further indicated that "in initiating and carrying out this litigation", it assumed that necessary experts and consultants would be made available free of charge. The assumption proved false.

Texas Utilities Generating Company, *et al.* (Applicants) responded on June 24, 1981, supporting the motion for dismissal as a party, and urging the Board to dismiss ACORN's contentions. The Applicants also requested that a prehearing conference scheduled for July 8-9, 1981 in Fort Worth, Texas be cancelled as unnecessary in view of ACORN's withdrawal as a party intervenor. The Staff filed its response on July 6, 1981, not opposing ACORN's motion for voluntary dismissal and suggesting that each contention previously sponsored solely by ACORN be dismissed. The Staff also suggested that a new "lead party-intervenor" be designated for contentions sponsored jointly by ACORN and others.

The Board sent a telegram on June 26, 1981, to all parties which read as follows:

Comanche Peak prehearing conference scheduled July 8-9, 1981 is cancelled/Order concerning all pending motions will be issued shortly/Expedited schedule for termination of discovery and early commencement of evidentiary hearing on NEPA and selected issues will be included.

ACORN's motion for its voluntary dismissal will be granted, as no intervenor can be compelled to remain a party against its will. All pending motions by or against ACORN are dismissed as moot.

On June 16, 1980, the Board ruled on the admissibility of contentions and it admitted 17 of ACORN's contentions.¹ Those contentions were somewhat modified and combined, in part, with contentions filed by the other two Intervenor, CFUR and CASE. ACORN's renumbered and accepted contentions for which it was solely responsible then became Contentions 10 and 12 through 21. Subsequently ACORN was designated as the "lead party-intervenor" for those contentions which it alone had sponsored.² ACORN was also designated lead party on several other contentions (5 and 23) which it had sponsored jointly with other Intervenor (*Id.* at 13).

As to the jointly sponsored contentions, CFUR is designated as the lead party on Contention 5, and CASE as the lead party on Contention 23. If either party is unable or unwilling to lead on these contentions, they shall so advise the Board within 20 days from the date of this Order. The disposition of the contentions asserted solely by ACORN (10 and 12-21), is discussed *infra* in our consideration of *sua sponte* jurisdiction.

II. *SUA SPONTE* CONSIDERATION OF CONTENTIONS AND ISSUES

Prior to November 23, 1979, 10 C.F.R. § 2.760a provided that in a contested operating license proceeding, findings of fact and conclusions of law should be made:

¹Order Subsequent to the Prehearing Conference of April 30, 1980, entered June 16, 1980, pp. 6-8, 10-17.

²Memorandum and Order, entered December 31, 1980, pp. 12-13.

“on the matters put into controversy by the parties to the proceeding and on matters which have been determined to be the issues in the proceeding by the Commission or the presiding officer.”³

In its prior form, § 2.760a further provided that:

“Matters not put into controversy by the parties will be examined and decided by the presiding officer only in extraordinary circumstances where he determines that a serious safety, environmental, or common defense and security matter exists. This authority is to be used sparingly.”⁴

In 1979 certain changes were made in the second paragraph of § 2.760a quoted above, which now reads as follows:

“Matters not put into controversy by the parties will be examined and decided by the presiding officer only where he or she determines that a serious safety, environmental, or common defense and security matter exists.”⁵

Although the former requirements relating to a finding of “extraordinary circumstances”, and the *sua sponte* authority being “used sparingly” were deleted by this amendment of the regulations, it is nevertheless still necessary to make a finding that a “serious safety, environmental, or common defense and security matter exists.”⁶

Finally, the Commission has recently reviewed licensing procedures used by its adjudicatory boards, including the application of the *sua sponte* rule. The latest action taken by the Commission in this regard is described in a memorandum issued by its Secretary on June 30, 1981, as follows:

“On June 2, 1981, the Commission requested that henceforth:

- (1) When a Licensing Board or an Appeal Board raises an issue *sua sponte* in an Operating License proceeding, it shall issue a separate order making the requisite findings, briefly state its reasons for raising the issue; and it shall forward a copy of that order to the Office of the General Counsel and to the Commission and

³40 Fed. Reg. 2974, Jan. 17, 1975. This regulation had its genesis in the Commission's decision in Consolidated Edison Company of New York (Indian Point Nuclear Generating Unit 3), CLI-74-28, 8 AEC 7, 9 (1974). The Commission's regulations, in accordance with the express direction in that decision, were conformed to the construction embodied in that memorandum and order by means of amendments effective February 18, 1975 (40 Fed. Reg. 2973).

⁴*Id.*

⁵44 Fed. Reg. 67088, Nov. 23, 1979.

⁶*Id.*

- (2) when a Licensing Board or an Appeal Board has raised an issue *sua sponte*, the Office of the General Counsel shall, as part of its regular monitoring of adjudicatory proceedings, make a prompt report on the matter to the Commission.

“The Commission made clear that in so requesting, it was not altering in any way the provisions of the Commission’s rules regarding the raising and consideration of issues *sua sponte*. Accordingly the Boards shall continue to make the initial determination of whether a Board question is an exercise of *sua sponte* authority or a question asked to ensure the completeness of the record on an admitted contention. Furthermore, the fact that an issue has been raised *sua sponte*, and that the Commission will be advised of that action by the Office of the General Counsel through its monitoring of adjudicatory proceedings, would not provide a basis for any party to fail to meet its obligation to respond expeditiously to the Board’s questions.”

In applying the foregoing principles of *sua sponte* jurisdiction to this proceeding, the Board will next consider two groups of contentions or admitted issues. The first group deals with three questions which the Board in its June 16, 1980, Order⁷ directed the Applicants and the Staff to address during the forthcoming evidentiary sessions. The second group of potential issues revolve around the previously admitted contentions sponsored solely by ACORN (10 and 12-21), in light of the voluntary dismissal of ACORN as an intervening party.

A. Board Questions Propounded June 16, 1980

By its Order subsequent to the April 30, 1980, Prehearing Conference, the Board ruled on the admissibility of contentions. Certain contentions led the Board to propound questions which it directed the Applicants and the Staff to address during the forthcoming evidentiary sessions. Although these questions might be considered as follow-up to issues raised by the parties, in honoring the spirit of the Commission’s recent directives the Board will regard them as exercises of the Board’s *sua sponte* authority.

The Board questions were propounded in the June 16, 1980 Order as follows:

Board Question No. 1: Describe in detail the planned methods for handling any hydrogen gas in the CPSES containment structure.

⁷Order Subsequent to the Prehearing Conference of April 30, 1980, entered June 16, 1980, pp. 4-6.

Board Question No.2: Applicant and Staff should describe in detail the operating quality assurance program for CPSES. A description of the provisions for conduct of QA audits should be provided, including a description of how reactor operations and reactor operator training will be audited.

Board Question No. 3: Describe the status of resolution of Safety Issue TAP A-9 (ATWS) as it relates to CPSES 1 and 2.

Board Question 1 could be construed as necessary to ensure the completeness of the record on admitted contentions.⁸ However, the wording of the admitted contention is such that the issue of handling hydrogen gas in the containment structure might not have been included in the evidentiary responses.^{8A} The Board finds that the methods and plans of the Applicants for handling any hydrogen gas in the containment structure are important and have significant implications from a health and safety viewpoint.

Board Question No. 2 was propounded as the result of the reformulation of a proposed contention which was denied as lacking adequate basis and specificity (Proposed CFUR Contention 4B). The Board believed that the most forthright and expeditious way to handle the issues raised was to phrase it in the form of a specific question or request for information, more focused on issues than in the form of generalized allegations of inadequacy. This question could also be considered a logical extension to admitted Contention 5, which deals with quality assurance and quality control during the construction stage. The Board considered operational QA to have the potential for serious health and safety implications, particularly as related to reactor operator training, and accordingly raised the question under its *sua sponte* authority.

Board Question No. 3 was propounded as the result of the denial of a proposed contention. CFUR Contention 9 concerning hardware modifications and Anticipated Transients Without Scram (ATWS) was denied as being too speculative, and because it was beyond the Board's jurisdiction insofar as it suggested that the Board override any possible future

⁸Contention 4. Some accident sequences heretofore considered to have probabilities so low as to be considered incredible, based, in part, upon the findings of WASH-1400, are in fact more probable in light of additional findings, such as those of the Lewis Committee and should be evaluated as credible accidents for CPSES. This evaluation should include a hydrogen explosion accident. In order to insure conservatism, the probabilities associated with such accident sequences should be the highest probabilities within the specified confidence band (CFUR 3a, 3b and ACORN 11).

^{8A}See discussion in Order entered June 16, 1980, p. 4 (fn. 1, p. 161, *supra*).

Commission-granted exemptions for ATWS-related hardware modifications. The Board considered the ATWS issue to have significant health and safety implications, and therefore directed the Applicants and Staff to describe its status as related to Comanche Peak.

In compliance with the Commission's June 2, 1981 directives regarding *sua sponte* issues (*supra* pp.162-163), this Order and especially pages 163-164 thereof will be forwarded to the Office of the General Counsel and to the Commission. This section of our Order is deemed to satisfy the above requirements for the Board to issue an "order making the requisite findings, briefly stat[ing] its reasons for raising the issue" (*Id.*)

B. ACORN's Solely Sponsored Contentions

Because this is one of the first proceedings in which the Commission's recent *sua sponte* directives have been construed and applied, the Board will carefully consider the status, following its voluntary dismissal, of the 11 contentions that were solely pleaded and sponsored by ACORN. The Board does not entirely agree with the Staff's position in this regard, which it described as follows:

"The Staff believes that ACORN's failure to provide virtually any information in response to legitimate discovery requests, which would support or elucidate its contentions — notwithstanding the fact that it was ordered to do so by the Licensing Board — effectively precludes the Licensing Board — 'from being able to 'determine that a serious safety, environmental, or common defense and security matter exists' (10 C.F.R. § 2.760a), and precludes the Staff and the Applicant from being able to litigate the merits of ACORN's contentions. *Cf. Tyrone Energy Park, supra*, 5 NRC at 1301. Accordingly, the Staff believes that each of the contentions which were sponsored solely by ACORN — i.e., contentions 10, 12, 13, 14, 15, 16, 17, 18, 19, 20 and 21 — should be dismissed from this proceeding.¹³

* * *

¹³In an operating license proceeding where a hearing is convened as a result of intervention, the Licensing Board will resolve all issues raised by the parties and any issues which it raises *sua sponte*. 10 C.F.R. § 2.760a; *Consolidation Edison Co. of New York* (Indian Point Nuclear Generating Station, Units 1, 2, & 3), ALAB-319, 3 NRC 188, 190 (1976). The decision as to whether any other matters need to be considered prior to issuance of the operating license is the

responsibility of the NRC Staff alone. *Indian Point, supra*, 3 NRC at 190; *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-181, 7 AEC 207, 209 n.7 (1974). In the event that ACORN's Motion for Voluntary Dismissal is granted, the contentions solely advanced by ACORN would no longer be issues raised by a party and for the reasons stated in the text above, the Board lacks sufficient information to make the determination necessary to exercise its *sua sponte* jurisdiction. Accordingly, the contentions sponsored solely by ACORN should be dismissed."⁹

The Staff correctly states that where a hearing is triggered in an operating license proceeding by an admitted intervention, the Board will then resolve all cognizable issues (1) properly raised by the parties, and (2) any issues raised by the Board *sua sponte*.¹⁰ In this regard, the Staff cites *Consolidated Edison Company of New York, Inc.* (Indian Point, Units 1, 2 & 3), ALAB-319, 3 NRC 188, 190 (1976). That case was decided when the earlier (1975) version of the *sua sponte* regulation was still in force, requiring that such "authority is to be used sparingly" (§ 2.760a). Nevertheless, even with the former language then in effect regarding "extraordinary circumstances" and "used sparingly" (now deleted, *supra* pp. 161-162), the Appeal Board's discussion of *sua sponte* principles is helpful:

"To be sure, the board in an operating license case does have the residual power to delve into any serious matters which it uncovers, even if no party has put them in issue. This power is, however, to be exercised sparingly; an operating license board is neither required nor expected to pass upon all the items which the staff must consider and resolve before it approves the license. The upshot is that, once an operating license board has resolved any contested issues and any issues raised *sua sponte*, the decision as to all other matters which need to be considered prior to the issuance of the requested license is the responsibility of the staff and it alone. On the other hand, the staff may not issue an operating license while the licensing board presiding at the operating license hearing still has any unresolved issues under consideration, even if the staff is satisfied as to all the subjects committed to it for decision." (Footnotes omitted) (3 NRC at 190).

It is therefore clear that the power of the Staff alone to decide whether any other matters need to be considered prior to the issuance of an operating license, arises only *after* the Board has resolved the question of potential *sua sponte* issues, and it does not qualify or limit the Board's jurisdiction in that regard.

⁹NRC Staff's Response to ACORN's Motion for Voluntary Dismissal (7/06/81), p. 5 and fn. 13.

¹⁰*Id.*

The Staff further argues that "the Board lacks sufficient information to make the determination necessary to exercise its *sua sponte* jurisdiction," and hence that the ACORN contentions should be dismissed. This result was allegedly required by ACORN's prior failure to provide discovery information on those contentions, although ordered to do so. Such failure, the Staff argues, "effectively precludes the Licensing Board from being able to 'determine that a serious safety, environmental, or common defense and security matter exists' (10 C.F.R. § 2.760a), and precludes the Staff and the Applicant from being able to litigate the merits of ACORN's contentions. Cf. *Tyrone Energy Park*, *supra*, 5 NRC at 1301."¹¹

The Staff's position might be tenable if this were a purely adversary proceeding and the only cognizable issues were those resulting from admitted contentions. An intervenor's failure to provide ordered discovery information could then result in sanctions extending as far as dismissal of a party and issues. However, the Staff's argument ignores the other possible source of litigable issues, namely, those raised *sua sponte* by the Board. The possible imposition of sanctions such as dismissal of an adversarial party, would not of itself impair or preclude the consideration of a "serious safety" or other issue under § 2.760a.

The Staff cites *Tyrone Energy Park*, *supra*, a construction permit proceeding, to show that intervening parties and their contentions have been dismissed where they have been in default of discovery orders and they have failed to provide necessary information. As there stated, to "permit a party to make skeletal contentions, keep the bases for them secret, then require its adversaries to meet any conceivable thrust at hearing would be patently unfair, and inconsistent with a sound record."¹² However, it is also important to note that after dismissing certain parties and their contentions following default, the Licensing Board in *Tyrone Energy Park* then expressly stated that "[t]he Board *retains* Contention 11.A.(2) as its own contention." (Emphasis supplied.)¹³ This illustrates the different criteria that there governed the treatment of issues raised by adversarial parties, and those same issues when adopted by the Board "as its own contention."

Finally, the Staff argues on this point that because of ACORN's failure to provide discovery information, "the Board lacks sufficient information to make the determination necessary to exercise its *sua sponte* jurisdiction."¹⁴

¹¹NRC Staff's Response etc., *supra*, p. 5, fn. 13.

¹²5 NRC at 1301.

¹³*Id.*, at 1302.

¹⁴NRC Staff's Response etc., p. 5, fn. 13.

This argument overlooks the Board's inherent power to obtain whatever information is reasonably necessary to determine "that a serious safety, environmental, or common defense and security matter exists" under § 2.760a. If serious safety matters are potentially involved in an operating license hearing, the public interest would not condone a Licensing Board having its hands tied by being wholly dependent upon an intervenor furnishing discovery information or retaining the status of a party. The situation is comparable to that described by the Court in *Scenic Hudson* as follows:

"In this case, as in many others, the Commission has claimed to be the representative of the public interest. This role does not permit it to act as an umpire blandly calling balls and strikes for adversaries appearing before it; the right of the public must receive active and affirmative protection at the hands of the Commission."¹⁵

Undoubtedly, the Board could require the remaining parties, particularly the Applicants and the Staff, to supply such information or data as might reasonably be required for the analysis and possible exercise of *sua sponte* authority.¹⁶ If the safety or other issues involved were sufficiently serious and significant, the Board could probably take reasonable steps to obtain indispensable information on the record from independent experts, subject to notice to the parties and an opportunity to be heard.¹⁷ A Board can also use the expertise of its own members in making a *sua sponte* analysis of issues.

Accordingly, the Board will review the ACORN contentions and make an independent judgment as to *sua sponte* issues, in accordance with the provisions of 10 C.F.R. § 2.760a, as amended, and in compliance with the Commission's directives of June 2, 1981.

The Board has carefully reviewed each of ACORN's eleven solely sponsored contentions. Part of that review involved a study of pertinent portions of Applicant's Final Safety Analysis Report (FSAR)¹⁸ and NRC

¹⁵*Scenic Hudson Preservation Conference v. Federal Power Commission*, 354 F.2d 608, 614, 620 (2d Cir. 1965). See also *Greene County Planning Board v. Federal Power Commission*, 455 F.2d 412, 419 (2d Cir. 1972); *Calvert Cliffs Coordinating Committee v. AEC*, 449 F.2d 1109, 1119 (D.C. Cir. 1971); *Michigan Consolidated Gas Co. v. FPC*, 283 F.2d 204, 226 (D.C. Cir. 1960).

¹⁶*Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2)*, ALAB-491, 8 NRC 245, 247, 249 (1978).

¹⁷10 C.F.R. §§ 2.718, 2.722.

¹⁸*Comanche Peak Steam Electric Station Final Safety Analysis Report (as amended)*. [CPSES FSAR]

Staff's recently completed Safety Evaluation Report (SER) — NUREG-0797.¹⁹ The Board notes that the Staff listed 30 outstanding issues in its SER.²⁰ Nine of ACORN's eleven contentions are directly related to these open issues. In addition to those areas where the Staff has not completed its review, the SER lists 14 unresolved safety issues applicable to Comanche Peak. The SER also indicates that the Staff has issued NUREG reports providing its proposed resolution to five of these issues.²¹ Two of the NUREG reports (NUREG-0609 and NUREG-0612) relate directly to ACORN contentions.²² Only one of ACORN's contentions (#20) is not associated with either an outstanding SER issue or an applicable generic safety issue.

The ACORN contentions and the Board's disposition of them are as follows:

Contention 10. The CPSES design fails to adequately account for the effect of asymmetric loading resulting from a pipe break in the areas between the reactor vessel and the shield wall.

The issue of asymmetric blowdown loads on PWR primary coolant systems was first identified as a problem with generic implications in 1975.²³ The NRC Staff initiated a generic investigation (Task Action Plan A-2) which concluded in December 1980. The NRC Staff resolution of this issue is described in a report, "Asymmetric Blowdown Loads on PWR Primary Systems — Resolution of Generic Task Action Plan A-2 (NUREG-0609 published January, 1981). The report provides acceptance criteria and guidelines for use in plant-specific analyses. Staff SER § 3.9.2.3 discusses the status of the Staff's application of these acceptance criteria and further states that the final results of the review will be reported in a supplement to the SER.

Absent any showing to the contrary, the Board considers this issue sufficiently resolved so that the issue need not be raised under the Board's *sua sponte* authority. However, the Board will expect the Staff to report on the ultimate resolution of this issue in a subsequent supplement to the SER. Barring an unfavorable ultimate resolution report, Contention 10 is not an issue in this case.

¹⁹Safety Evaluation Report related to the operation of Comanche Peak Steam Electric Station Units 1 and 2, NUREG-0797, July 1981. (SER)

²⁰*Id.* at 1-7 through 1-10.

²¹*Id.* at 1-12 and Appendix C.

²²*Id.* at Appendix C-5.

²³Task Action Plans for Unresolved Safety Issues Related to Nuclear Power Plants (NUREG-0649, page A-2/1, February, 1980).

Contentions 12 through 19 are related to issues which the Staff is still reviewing. These contentions and the Staff's open item identification numbers are as follows:²⁴

- Contention 12.** Neither the Applicants nor the Staff has reliable methods for evaluating and insuring that structures, systems and components important to safety are designed to withstand the affects [sic] of the safe shutdown earthquake without losing the capability to safely shutdown the plant; thus, General Design Criterion 2 has not been satisfied. — SER Open Item #9: Seismic and dynamic qualification of mechanical and electrical equipment (SER § 3.10), and SER Open Item 12(a): Low-temperature overpressure protection system (SER § 5.2.2.2), (a) Power-operated relief valve (PORV) operators not qualified to be functional after seismic loads (SER § 5.2.2.2).
- Contention 13.** Present fire protection measures proposed by Applicants are not adequate to minimize the probability and effect of a fire from disabling the electric cables for all redundant safety systems; thus, General Design Criterion 3 has not been satisfied. — SER Open Item #24: Fire protection program (SER §§ 8.4.6, 9.5.1 and 9.5.3).
- Contention 14.** The D C Power System for the CPSES plant fails to meet the single failure criterion as defined in 10 C.F.R. Part 50, Appendix A. — SER Open Item #12(b): Low-temperature overpressure protection system, (a) PORV not single-failure proof for loss of vital dc bus power (SER § 5.2.2.2).
- Contention 15.** The CPSES design does not provide adequate, reliable instrumentation to monitor variables and systems affecting the integrity of the reactor core, the pressure boundary of the containment after an accident, in violation of General Design Criterion 13 of Appendix A of 10 C.F.R. Part 50. — SER Open Item #21: Environmental qualification of control systems for a harsh environment associated with a high-energy line break (SER § 7.7.2), and SER Open Item #30(f): TMI Action Plan — (f) Instrumentation and controls.

²⁴SER at 1-7 through 1-12.

II.F.1 Additional accident monitoring instrumentation, attachments 1, 2 and 3.

II.F.2 Instrumentation for detection of inadequate core cooling.

Contention 16. The CPSES design does not provide adequate equipment outside of the control room to promptly put the reactor in hot shutdown and so maintain it until attaining cold shutdown (also from outside the control room) as required by General Design Criterion 19 of Appendix A to 10 C.F.R. Part 50. — SER Open Item # 19: Remote shutdown capability (SER § 7.4.2).

Contention 17. Neither the Applicants nor the Staff has adequately considered the effects of aging and cumulative radiation on safety-related equipment which must be seismically and environmentally qualified, thus, General Design Criterion 4 has not been satisfied. — SER Open Item #4: Fracture-toughness properties of Unit 2 reactor vessel materials (SER §§ 5.3.1.2 and 5.3.3).

Contention 18. The CPSES design fails to present a means for dealing with pressure transients produced by component failure, personnel error, or spurious valve actuation which exceed the pressure/temperature limits of the reactor vessel. — SER Open Item #10: Environmental qualification of safety-related electrical equipment (SER § 3.11) and SER Open Item #30(a), (b), (f), (g) and (h): TMI Action Plan (§ 22),

(a) Operating and support personnel

I.A.1.2 Shift manning

I.B.1.2 Evaluation of organization and management improvements of near-term operating license applicants.

(b) Operating Procedures

I.C.1 Guidance for evaluation and development of procedures for transients and accidents

I.C.8 Pilot monitoring of selected emergency procedures for near-term operating license applicants.

(f) Instrumentation and controls

II.F.1 Additional accident monitoring instrumentation, attachments 1, 2 and 3

II.F.2 Instrumentation for detection of inadequate core cooling.

(g) Measures to mitigate small-break loss-of-coolant accidents (LOCAs) and loss of feedwater accidents

II.K.2.13 Thermal mechanical report — effect on high-pressure injection on vessel integrity for small-break LOCA accident with no auxiliary feed-water

II.K.2.17 Potential for voiding in the reactor coolant system during transients

II.K.3.1 Installation and testing of automatic PORV isolation system

II.K.3.2 Report on overall safety effect of PORV isolation system

II.K.3.11 Justifications of use of certain PORVs.

(h) NRC and license preparedness

III.A.1.1 Upgrading emergency preparedness

III.A.1.2 Upgrading emergency support facilities

III.A.2 Improving licensee emergency preparedness, long term.

Contention 19. The CPSES design fails to protect against corrosion within the steam generators which causes cracking of pipes and leakage of radioactive water. — SER Open Item #15: Steam generator secondary side water chemistry program (SER § 5.4.2.3).

The Board prefers to retain Contentions 12 through 19, at least until the Staff arrives at a position via supplements to the SER. Accordingly, the Board exercises its *sua sponte* authority to retain these issues, which may have significant health and safety consequences.

Contention 20. The CPSES design does not adequately insure that safety-related water supplies will be available for plant operation in the event of ice buildup at the service water intake structure.

ACORN Contention 20 concerning ice buildup at the service water intake was accepted as a contention under the *Allens Creek* umbrella.²⁵ Mean monthly temperatures in the area of the proposed site range from 45° F in January to 81° F in July and August.²⁶ On-site measurements during the month of January during the period 1972-1976 showed average daily maximum and minimum temperatures of 12.8° C and 2.0° C (55° F and 36° F).²⁷ Absent more specific information concerning the potential for ice problems at the station intake, this issue does not appear to this Board to reach the status of a problem requiring *sua sponte* adoption.

Contention 21. The CPSES design fails to protect against accidents involving the movement and handling of heavy loads in the vicinity of spent fuel at the facility.

ACORN Contention 21 is a restatement of Task No. A-36, "Control of Heavy Loads Near Spent Fuel." In July 1980, a report "Control of Heavy Loads at Nuclear Power Plants" (NUREG-0612) was issued. This report describes the Staff's review and provides the criteria that should be satisfied to assure safe handling of heavy loads. Absent any information to the contrary, the Board considers this issue resolved and declines to raise it *sua sponte*. The Board does however take note that this issue is listed as an open item in Staff's SER (Open Item #23): Handling of heavy loads in conformance with the guidelines of NUREG-0612 (SER § 9.1.4). Barring an unfavorable resolution report by the Staff in its SER supplement(s), Contention 21 is not an issue in this case.

ORDER

For all the foregoing reasons and based upon a consideration of the entire record in this matter, it is this 24th day of July, 1981

ORDERED

- (1) That ACORN's motion for its voluntary dismissal as a party is granted.
- (2) All pending motions by or against ACORN are dismissed as moot.

²⁵Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).

²⁶SER § 2.3.2.

²⁷CPSES FSAR Table 2.3-16 Sheet 1 of 13.

(3) With regard to jointly sponsored contentions, CFUR is designated as the lead party on Contention 5, and CASE as the lead party on Contention 23. If either party is unable or unwilling to lead on these contentions, they shall so advise the Board in writing within twenty (20) days from the date of this Order.

(4) Board Questions 1-3, as propounded in the June 16, 1980 Order, shall constitute issues to be addressed in this proceeding. Copies of this Order dealing with those matters shall be treated as *sua sponte* issues, and copies of this Order shall be forwarded to the Commission and to the Office of the General Counsel in compliance with the Commission's June 2, 1981 directive regarding *sua sponte* issues.

(5) Contentions 10, 20 and 21 shall not constitute issues in this proceeding by *sua sponte* action of the Board, and they are dismissed as contentions.

(6) Contentions 12 through 19 are retained as issues at this time by the Board's exercise of its *sua sponte* authority. Copies of this Order dealing with Contentions 12 through 19 shall be forwarded to the Commission and to the Office of General Counsel, in compliance with the Commission's June 2, 1981 directive.

THE ATOMIC SAFETY AND
LICENSING BOARD

Dr. Forrest J. Remick
ADMINISTRATIVE JUDGE

Dr. Richard F. Cole
ADMINISTRATIVE JUDGE

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

**CLEVELAND ELECTRIC
ILLUMINATING COMPANY, *et al.***
(Perry Nuclear Power Plant, Units 1 & 2)

July 28, 1981

The Licensing Board issues a special prehearing conference order concerning the admission of parties, motions to dismiss and to stay, admissibility of contentions, and the adoption of special discovery procedures.

RULES OF PRACTICE: JURISDICTION

The Commission has jurisdiction to license nuclear facilities located within the United States. The fact that some emergency planning activities required for licensing may take place in Canada does not deprive the Commission of jurisdiction.

RULES OF PRACTICE: STANDING

An organization whose claim to have standing to intervene is based on residence of members 125 miles from the reactor site is not entitled to standing as a matter of right.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

When the board has required applicant and staff to file briefs concerning the admissibility of contentions, intervenor must give reasons or authority for rejecting arguments presented in the required briefs.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

In ruling on the admissibility of a contention, licensing boards should not reach the merits and should not require the introduction of underlying evidence, provided that the basis for the contention is identified with reasonable specificity.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

The degree of specificity required of a contention depends on many factors. One is the nature of the challenge to its admissibility. Another is whether intervenor has provided bases for a claim for which relief can be granted.

RULES OF PRACTICE: COLLATERAL ESTOPPEL

The doctrine of collateral estoppel traditionally applies only when the parties in the case were also parties (or their privies) in the previous case. A limited extension of that doctrine permits "offensive" collateral estoppel; *i.e.*, the claim by a person not a party to previous litigation that an issue had already been fully litigated against the defendant and that the defendant should be held to the previous decision because he has already had his day in court. *Parkland Hosiery Co., Inc. v. Leo M. Shore*, 439 U.S. 322 (1979). In operating license proceedings, estoppel may also be applied defensively, to preclude an intervenor who was not a party from raising issues litigated in the construction permit proceeding.

SPECIAL PREHEARING CONFERENCE MEMORANDUM AND ORDER CONCERNING PARTY STATUS, MOTIONS TO DISMISS AND TO STAY, THE ADMISSIBILITY OF CONTENTIONS, AND THE ADOPTION OF SPECIAL DISCOVERY PROCEDURES

A Special Prehearing Conference was held in Painesville, Ohio on June 2 and 3, 1981. The purposes of this Memorandum and Order are: (1) to discuss a number of motions resolved at that Conference, including the admission of parties and disposition of motions to dismiss and stay, (2) to

determine if the intervenors' contentions are admissible as issues in this proceeding, and (3) to adopt special discovery procedures.

I. STATUS OF PARTIES

A. Summary of Status

A previous order in this case, issued on April 9, 1981, granted party status to all but five of the petitioners for intervention. Subsequently, three of these parties asked to withdraw. Those petitions to withdraw were granted in the course of the Special Prehearing Conference. In addition, we granted four of the intervention petitions that had not yet been granted. Only the Toledo Coalition for Safe Energy was denied party status. As a result, the following are parties to this proceeding:

Sunflower Alliance, Inc. (Sunflower), Northshore Alert, Citizens for Safe Energy, Ohio Citizens for Responsible Energy (OCRE), Evelyn Stebbins, Richard Sering, David Nash, Gail Caduff Nash, Linda Qualls, David Qualls, Wes Gerlosky, Margaret Gerlosky, William Brotzman, Cumings Homsted Park Corp., the Lake County Board of Commissioners (Lake County), The Lake County Disaster Services Agency, and Tod J. Kenney.

B. Petition of Toledo Coalition for Safe Energy

In the course of the Special Prehearing Conference, the Petition for Intervention of the Toledo Coalition for Safe Energy (Coalition) was denied for lack of standing. (Tr. 120-123.) Two witnesses for the Coalition, Mr. Terry Lodge and Mr. Albert J. Waldorf, were permitted to testify. (Tr. 79-102.)

Mr. Lodge, who is attorney for the Coalition, testified that there is no member of the Coalition who lives closer than 125 miles from the Perry Nuclear Power Plant (Perry). (Tr. 83.) The Coalition also asks that it be granted either permissive intervention or standing of right because it will suffer substantial environmental economic injury even though its members reside more than 50 miles from the Perry Plant.

At the close of Mr. Lodge's testimony, the Board was informed that "a member of the audience has come forward who is a member of the Toledo Coalition who does live well within 50 miles of the plant." (Tr. 86.) That alleged member, Mr. Waldorf, then testified that he was a member of the Coalition and had participated in a variety of its activities. (Tr. 88-102.)

The Board credits Mr. Waldorf's belief that he is a member of the Coalition and that he lives within ten miles of the Perry Plant. (Tr. 90.) However, Mr. Lodge testified that he did not know whether Mr. Waldorf is on the membership role of the organization. (Tr. 103.) Mr. Lodge also indicated that he had asked members of the steering committee of the

Coalition for the names of members residing in the part of the State near Perry, and no such members had been suggested. (Tr. 116.) In addition, Mr. Lodge stated that one of the persons to whom he spoke about membership status had specifically mentioned Mr. Waldorf as a person whose membership might not be current. (Tr. 116.)

We conclude that membership is a reciprocal relationship. Considering both Mr. Lodge's testimony and his assertions as counsel, the Board finds that the Coalition did not consider Mr. Waldorf a member. Consequently, he was not a member and the Coalition failed to demonstrate that any of its members reside closer than 125 miles from the Perry Plant.

We find that the failure to prove that a member resides within 50 miles of Perry is fatal to the Coalition's assertion of a right to intervene. Our order of April 9, 1981, admitted as parties each individual and business petitioner "located no further than 50 miles from the Perry Nuclear Plant" and stated that "each petitioner may file an amended petition ... accompanied by one or more affidavits stating the place of residence of members on whom standing is based ..." (P. 6.) That Order was authorized by 10 C.F.R. § 2.718(1) and is consistent with the "U.S. Nuclear Regulatory Commission Statement of Policy on Conduct of Licensing Proceedings," May 22, 1981. Intervenor acknowledged that the April 9 Order indicated that the Coalition was expected to prove that it had a member who lived within 50 miles of Perry. (Tr. 118-119.)

Although residence within 50 miles is not an explicit requirement for intervention by right; that limit is consistent with precedent and was the standard the Board used in its order. *See Houston Lighting and Power Company, et al., (South Texas Project, Units 1 and 2), LBP-79-10, 9 NRC 439 (1979), 445-449; appeal struck, ALAB-545, 9 NRC 634 (1979).* Intervenor now disputes the residence requirement fixed in our order (Tr. 117-118), but the time to do that has passed. Given the potential legal importance of the issue the Coalition raises, the Board finds that petitioner had to promptly notify the parties of its intention to challenge the Order of the Board. This would have placed parties on notice of the need to be prepared to argue an issue that had apparently already been decided. (*See* Tr. 83-84 concerning Applicant's reliance on the Board's order.) It also would have permitted the Board to require briefs to assist it in the orderly determination of the issue. However, the coalition merely waited. Indeed, it waited for more days than the regulations permit for the far more onerous task of objecting to an initial decision in an operating license case. (*See* 10 C.F.R. § 2.762.) Under these circumstances, we have determined that it was not proper for the Coalition to question the 50-mile standard applied by the Board.

Even were the validity of the 50 mile requirement legitimately raised, standing based on residence beyond a 50 mile limit is not a sufficient

interest to establish standing in this proceeding. The further a person lives from a plant the weaker the claim to adjudicatory standing and the more similar that person's objections to the interests of all citizens. Those general interests need not be protected in litigation. They can be pursued in rulemaking proceedings before administrative agencies and in lobbying before Congress.

Without a showing that a plant has far greater than ordinary potential to injure those outside a 50 mile limit, a person living further away has a weak claim to the costly protection of a full adjudicatory proceeding. Those who are more directly affected can intervene as they have in this case and assert issues that will affect the petitioner. Petitioners living further away should not have the right to further complicate a proceeding. They may petition for permissive intervention. *Portland General Electric Co. (Pebble Springs Nuclear Plant, Units 1 and 2)*, CLI-76-27, 4 NRC 610, 613-14 (December 13, 1976); *Tennessee Valley Authority (Watts Bar Nuclear Plant, Units 1 and 2)*, ALAB-413, 5 NRC 1418, 1422 (1977). Or, they can legitimately be left to their rulemaking and legislative remedies. Compare *Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 & 2)*, ALAB-522, 9 NRC 54 (1979) (an appeals board decision discussing whether an organization could intervene if it had one member who lived 35 miles from the plant and another member who canoed in the vicinity of the plant); see also *Virginia Electric and Power Company (North Anna Power Station, Units 1 & 2)*, ALAB-146, 6 AEC 631, 633-34 (1973).

In this proceeding, permissive intervention is not appropriate because the Toledo Coalition's remote interest on behalf of ratepayers of Toledo Edison Co. and residents of northwestern Ohio are economic interests that are not cognizable. Other intervenors who joined with the Coalition in the Sunflower petition can represent its legitimate interests. (See *Pebble Springs* at 616; *Watts Bar* at 1421 (1977)). The Toledo Coalition did not persuade us to grant it discretionary intervention because of a valuable contribution it alone might make.

II. MOTIONS TO DISMISS AND STAY

On May 22, 1981, Sunflower Alliance filed a motion to dismiss the operating licensing proceeding on the ground that 42 USC § 2133(d) deprives the Nuclear Regulatory Commission of jurisdiction over the action. That section of the Atomic Energy Act states:

No license under this section may be given to any person for activities which are not under or within the jurisdiction of the United States ...

Sunflower argues that one of the "major activities" of operating a nuclear power plant is emergency planning and that a portion of those activities

must take place outside the United States because Eriean, Ontario is a Canadian town located within 50 miles of Perry.

In the course of the Special Prehearing Conference, the Board denied Sunflower's motion on the ground that emergency planning is merely a factor to be considered in granting a license. It is not an activity for which a license may be granted. (Tr. 2629). The activity which may be licensed as a result of this proceeding is the operation of a power reactor. That activity takes place primarily within the containment and contiguous facilities. We also might conclude that the activity extends to the boundary of the limited access areas required by 10 C.F.R. § 73.45. However, we do not interpret the use of the terms "license" and "activities" in § 2133(d) to include anything occurring farther away from the plant.

Since emergency planning is not a licensed activity, § 2133(d) should not be interpreted to prohibit the issuance of a license to a power reactor merely because planning has become a prerequisite to the issuance of a license. The possibility that Canadians would need to respond to an emergency, should one occur, does not indicate that "licensed activities" would take place in Canada. Canadians hardly need a license to respond to an emergency. Furthermore, the recent enlargement of the emergency planning zone, with repercussions quite far from the site, should not change the interpretation of § 2133(d). The promulgation of new regulations does not continuously change the statutory definition of licensed activities.

Because we have explained our reasons for denying the motion, it is not necessary to decide whether Staff has correctly stated that emergency planning activities need not include Eriean. (Staff also asserted that attempts will be made to coordinate planning with affected Canadian jurisdictions.)

However, Sunflower also requested a stay of the operating license proceedings on the ground that certain key documents have not yet been filed by the Staff and that Sunflower is therefore prevented from preparing its contentions in an adequate manner. That motion also was denied (Tr. 43-45), primarily because the rules provide a method by which intervenors may raise new contentions if they were unable to do so prior to the filing of key staff documents.

During the Special Prehearing Conference, the Board agreed to serve on Sunflower portions of the transcript relating to its motions. Since the Board's reasons have now been stated in writing, that is no longer necessary. Additionally, written motions may now be resolved in the course of an on the record proceeding without service on parties present at the proceeding. 10 C.F.R. § 2.730, 46 Fed. Reg. 30328 (June 8, 1981).

III. CONSIDERATIONS AFFECTING THE ADMISSION OF CONTENTIONS

The admissibility of contentions in operating licensing proceedings is governed by 10 C.F.R. § 2.714, which requires petitioner to

file a supplement to his petition to intervene which must include a list of the contentions which petitioner seeks to have litigated in the matter, and *the bases for each contention set forth with reasonable specificity.*

[Emphasis added.] This requirement has been further elaborated in two Atomic Safety and Licensing Appeal Board decisions, *Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2)* 6 AEC 423 (1973) and *Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1)* 11 NRC 542 (1980).

These cases both limit the power of licensing boards to exclude contentions. *Grand Gulf* held that a licensing board should not reach the merits of a contention and should not require the introduction of underlying evidence, providing that "the basis for the contention .. is identified with reasonable specificity." Similarly, *Allens Creek* found admissible a contention that cited a specific section of the Final Environmental Statement and also cited a government report, *Project Independence*, as authority for its principal factual assertion. In the course of that opinion, the majority of the appeal board set limits on how deeply a licensing board may go in analyzing the validity of the conclusions of an authority who was cited in support of a contention.

Nevertheless, despite these broad guidelines, this Board feels that the rule requiring reasonable specificity provides broad discretion and little guidance. Consequently, we have decided to review the application of this rule in its complete procedural context, in order to provide us with increased guidance in the interpretation of this standard.

A. Arguments of the Parties

Intervenors have argued that the Federal Rules of Civil Procedure provide useful guidance concerning the specificity expected in pleadings. Generally, those rules contrast with earlier common law practice in which detailed pleadings were commonplace. The Federal Rules were heralded as a modern practice in which less stress was placed on pleadings, which were permitted to be freely amended in the course of federal proceedings.

Applicant argues that the Federal Rules are inapplicable. In particular, it points out that in licensing proceedings, the applicant must bear the burden of proof on contentions admitted into a proceeding. This, it argues, entitles it to clear notice of the issues on which it is expected to bear the burden.

Staff argues that Commission guidelines for specificity are similar to Federal Rules requirements governing pleadings and a bill of particulars.

Staff also argues that the requirement that there be a basis necessitates citation to an authority and cannot be satisfied by the statements of the intervenor or its counsel. For example, when Staff discussed Sunflower Alliance's first contention in its "Comments on Contentions Proposed at Special Prehearing Conference" (Staff Comments), it stated (pp. 7-8):

[P]etitioners have provided only counsel's statement, which is insufficient to provide the basis required by the Commission's regulations.

B. The Full Procedural Context

In Commission proceedings, Applicant must file extensive documents before the intervenor is required to plead. In this case, the application, including the required Final Safety Analysis Report and the Environmental Report, consists of 22 thick volumes of information. This differentiates licensing proceedings from district court proceedings, in which plaintiffs must start without the benefit of any prior filing by the defendant.

Another difference is that licensing hearings never are the sole method of determining the merits of issues. Whether or not there is a licensing proceeding, the Director of Nuclear Reactor Regulation and the Advisory Committee on Reactor Safeguards must review the safety and environmental effects of reactors before licensing. Each of these independent reviews is seriously conducted by technical experts engaged by the government. A hearing supplements these other reviews and may provide some incentive for increased thoroughness in these parallel processes. But unlike District Court proceedings, hearings never are the sole avenue for determining truth.

The existence of parallel decision tracks provides some support for interpreting "reasonable specificity" to require that intervenors show enough understanding of the filed materials to indicate that a hearing will have a substantial chance of adding to the preexisting process. Hence, it is reasonable to require that contentions show an understanding of the materials already filed by Applicant about its reactor. *See Allens Creek*.

However, we disagree with Staff that a basis for a contention can be provided only by citation to authority. A citation may be helpful in establishing a basis, particularly when the subject is highly technical. Sometimes intervenors may be able to provide good reason for raising a contention, and they may be unable to provide more basis without discovery. If intervenors' reasons support their contention, and if those reasons provide a logical basis for believing that discovery is appropriate, then it is improper to impose a stricter standard at this stage of the

proceedings. In particular, *Allens Creek*, cited by staff, does not impose the criterion that a contention must be supported by an authority or it will not be admitted. That case merely supports the converse proposition, that a contention supported by an authority can be admitted.

An additional factor influencing action on contentions is that the financial, safety and environmental impacts of Board decisions generally exceed the impact of district court cases, and great care should be taken before rejecting a potentially important contention that is poorly framed.

In this proceeding, the decision concerning "reasonable specificity" occurs in a context somewhat dissimilar to other proceedings because we adopted a special procedure in our April 9 Order. In that Order, we required the parties to file a brief prior to the Special Prehearing Conference, "stating in reasonable detail ... reasons, supported by legal authorities, why issues included in petitions should be considered relevant to the proceedings in whole or in part or should be considered irrelevant to the proceedings." In order to permit adequate time to prepare this special brief, amended petitions — required by the Order to "state contentions with particularity" — were to be filed a full 25 days prior to the conference.

Applicants and Staff availed themselves of the opportunity to submit this brief. Intervenor, though required to do so, did not.

In their brief, Applicants and Staff cited sections of the Final Safety Analysis Report (FSAR), the Environmental Report or the regulations of the Commission, dealing with the subject matter of intervenors' contentions. Although these briefs dealt with each contention separately, they were not voluminous. Each contention elicited a few paragraphs of response, including references to sections of the FSAR alleged to be relevant. Although intervenors would need some knowledge of the factual bases for their contentions to reply to these points, they were not so barraged with arguments that it would be unfair to require them to respond.

At the Special Prehearing Conference, intervenors were given substantial latitude in introducing new factual material and arguments in support of their contentions. This practice is consistent with *Grand Gulf*, in which the Licensing Board was upheld in permitting substantial "particularization." In fact, the particularization was relied on by the Appeal Board in its decision to admit a contention concerning alternatives to the construction of the Grand Gulf plant.

C. Additional Relevant Factor

The degree of specificity required of a contention depends in part on the nature of the challenge to its admissibility. For example, if a contention is opposed as a challenge to a Commission regulation, then intervenor should be able to explain why the contention is consistent with the regulation. At

times, this may require increased specificity. Similarly, if a contention is opposed as fully litigated during the construction permit stage (collateral estoppel), enough specificity must be found to indicate what is new about the current contention and how it differs from what was previously litigated.

Although it is not possible to anticipate the challenges a contention may provoke when a contention is framed, intervenors in this case were notified of the challenges before the special prehearing conference; and they either should have been able to respond by increasing the particularity of the contentions or by indicating why additional time for particularization was needed.

D. Summary of Factors Affecting Particularity

After considering all the special factors affecting the admissibility of contentions, the Board has applied the following criteria in determining whether the basis for a contention has been stated with reasonable specificity:

- (1) Have intervenors shown how the contention relates to specific sections of the FSAR or Environmental Report cited in the brief filed by Applicants or Staff?
- (2) Is the contention sufficiently specific so that Applicant has general notice of the issues on which it may bear the burden of proof at a hearing?
- (3) Is there either a reasonable explanation or plausible authority for factual assertions?
- (4) If a contention has been thoroughly litigated in the construction permit proceeding and has been challenged on that ground, is intervenor's allegation significantly different from the construction permit issue or has it shown sufficiently changed circumstances or policies to permit relitigation?
- (5) If all the facts alleged in the contention were proved, would those facts require imposition of a licensing condition or the denial of an operating license?
- (6) Has intervenor indicated enough familiarity with the subject of its contention so that its contribution to the proceeding may be expected to be helpful and so that minor shortcomings should be overlooked?

IV. RULINGS ON CONTENTIONS

In this section of the memorandum we rule on the admissibility of contentions. Generally, we review the contentions in the order presented by Sunflower, referring to contentions of the Ohio Citizens for Responsible Action (OCRE) when they are related to Sunflower contentions. We discuss

other intervenors' contentions after completing our consideration of the Sunflower contentions. Occasionally, we have grouped contentions together for ease of discussion or have modified the wording of contentions.

In the course of the Special Prehearing Conference, consistent with a practice that dates at least to *Grand Gulf*, the Board let intervenors further particularize their contentions by introducing related arguments and factual information. 10 C.F.R. § 2.714(b) requires that particularization should occur no later than 15 days prior to the Special Prehearing Conference. Furthermore, the Board's April 9 Order required that particularization occur 25 days before the Conference. However, § 2.714(b) also permits the Board to extend the time for particularization by balancing the factors found in § 2.714(a) and we have done so, primarily out of concern for intervenors' lack of experience at this stage of the proceedings.

On the other hand, intervenors' tardiness placed Applicant and Staff in the unfair position of having to respond to new factual and legal arguments for which they were unprepared. Consequently, the Board provided Applicant and Staff the opportunity to file "last word" briefs. Those briefs were both filed on July 6 and have been considered in the course of writing this memorandum.

In reading Staff's last word brief, we learned that OCRE had filed a "Post-Special Prehearing Conference Brief" on June 10, 1981. Because that Brief was not addressed to the Board members by name but merely to the "Board," none of the Board members had received a copy when it was originally mailed. However, a copy was available from docketing personnel and we have obtained and read this filing.

OCRE's filing exceeds our tolerance even at this early stage of the proceeding. It is our conclusion that OCRE has not shown good cause for its lateness. As it points out in its Brief, OCRE was directed to make its filing prior to the Conference. We do not accept as good cause for late filing the excuse that Mr. Jeffrey Alexander, OCRE representative, had to take graduate school examinations and was involved in an "ongoing experiment" which took his attention away from this case. While problems such as those might have provided reason for rescheduling a hearing, they are insufficient reason to excuse late filing. The excuse is particularly unsatisfactory because the Board tried unsuccessfully, in the course of the hearing, to obtain information from Mr. Alexander, who preferred to cite precedent to the Board rather than to assist it with requested information. (Tr. 445-446, 547.)

A. Emergency Planning Contentions

(1) The Contentions

There are several related emergency planning contentions. Sunflower alleged:

[T]he emergency and evacuation plans for the subject facilities are fatally defective in numerous respects including but not limited to inadequacy of notification plans; deficiencies in radiation exposure measurement techniques, insufficient practical workability; no agreement with local response organizations as to cost and implementation of plans and inadequate notification of and information to media and residents within the ten (10) and fifty (50) mile radii.

The Lake County Board of Commissioners seeks the Licensing Board's help on the "adequacy" of the emergency response plan which Applicant has submitted to Lake County and wants "to independently verify all monitoring [of possible accidental releases of radioactivity] so that we can adequately provide our citizens with an emergency warning if any dangerous or unsafe releases of radiation from the Perry Nuclear Power Plant occur." Furthermore, Robert E. Martin, president of the Board of Lake County Commissioners, stated at the conference that

the development, capitalization, implementation and maintenance of a workable and adequate emergency response plan is beyond the financial capabilities of Lake County.

(Tr. 145.)

OCRE (3) is a contention that Applicant should distribute potassium iodide to every household within ten miles of the plant in order to help protect the thyroid gland and "help calm citizen fears during a nuclear crisis."

Tod J. Kenney had not particularized his contentions prior to the Special Prehearing Conference. However, at the Board's invitation he managed during the conference to review the emergency planning sections of the FSAR and to present 14 points, complete with detailed references to the FSAR, before the Conference adjourned. (Tr. 596-603). Then, at applicant's request, Mr. Kenney was required to submit his contentions in writing and to serve them on both applicant and staff by Express Mail, which he has done. Mr. Kenney's contentions included a reference to findings by Dr. Edward Radford concerning allegedly increased risks from radiation exposure, and they also include the following allegations that went beyond the allegations of the other intervenors:

† that applicant's FSAR has not clearly defined the criteria used to determine who will receive special attention in an emergency,

- † that the method of decontaminating affected persons is not adequately defined,
- † that applicant should install off-site monitors with continuous readout of radiation so that it will be able to determine during an emergency whether population exposure levels may have risen to a dangerous level,
- † that the Radford calculation of radiation risks should result in recalculation of a variety of parameters of the emergency plan, including definitions of "contaminated areas," "emergency action levels," "plume exposure pathway," "protective action guides," and "emergency planning zones,"
- † that during an emergency, monitoring should be expanded to include the human population residing within the ingestion pathway of Iodine 131,
- † that offsite radiological monitoring should routinely include samples from the human population, and
- † that potassium iodide should be stockpiled at receiving hospitals. (Mr. Kenny's other contentions either reiterated those of other intervenors or, in one instance, did not relate to emergency planning.)

At the conference, Sunflower introduced further specification of its emergency planning contention, including the following points:

- † that the City of Mentor has a road pattern with limited numbers of routes in and out, and this would impede efficient evacuation,
- † that there are too few buses to serve schools in the emergency planning zone and that there is as yet no agreement with the Regional Transit Authority or other localities to remedy this situation,
- † that there are not enough tow trucks, and
- † that local volunteer fire fighters might prove inadequate in assisting in the evacuation of people who do not own automobiles.

(2) Arguments Opposing the Contentions

In its brief, prior to the extensive additional particularization which occurred at the conference, Applicant opposed this contention primarily because there was no "basis" and there was a failure to particularize sufficiently by explaining the nature of the alleged deficiencies. Staff concurred in the argument that intervenors' generalized assertions of injury or defectiveness are not admissible.

In the course of the conference, Applicant raised a series of questions concerning the specific facts raised by intervenors, including the adequacy of radiation monitoring and the sufficiency of the number of buses to be

utilized. However, Applicant's principal problem with the contention was that:

They are claiming they do not have enough tow trucks; they don't have school buses; too many schools; too many hospitals. It could just go on forever, and there is really no basis for him saying it's unworkable. How do we draw the line and how do we come up with a specific contention?

(Tr. 188.)

Applicant also was troubled because it is confident that agreements will be reached with localities concerning emergency planning and that the incompleteness of current plans will be remedied. Consequently, Applicant suggested that these were the kind of issues on which new contentions might be admitted later in the proceedings but that it was inappropriate to admit contentions about deficiencies which are likely to be cured. (Tr. 205-208).

In its "Brief on Contentions," filed July 6, Applicant continues to contend that Sunflower relies on "broad, conclusory allegations" that are without basis. (At 6-7.) It also identifies a portion of the record as standing for the proposition that intervenors were criticizing on-site emergency plans rather than the state and local off-site plans, which apparently have not yet been filed. (Brief on Contentions at 7.)

Staff, on the other hand, acknowledges specificity when intervenors attack the number of school buses available for evacuation, the lack of agreements with local counties, the resistance of the counties to financing emergency plans and the inadequacy of evacuation plans for certain hospitals. It asserts that, despite this specificity, there is no "basis" because the contentions rest on the "*ipse dixit* conclusory statement of Sunflower's counsel." (Comments on Contentions at 7.)

Applicant conceded that OCRE's contention concerning potassium iodide was admissible (Tr. 226); but Staff contested the admissibility on the ground that a letter of March 25, 1981, from the Commission to Mr. Lou E. Gurfitta, contained a position of the Commission concerning potassium iodide and precluded this Board from acting on this matter.

With respect to the Kenney contention concerning conclusions reached by Dr. Edward Radford about the effect of radiation on people. Applicant argues that Radford's conclusions diverge from those reached by the majority of the Biological Effects of Ionizing Radiation (BEIR) III report. However, Applicant further argues that even if Radford's conclusions are accepted as true they are consistent with the dose-effect estimates which formed the basis for Commission regulations and for Applicant's emergen-

cy response plans. Hence, Applicant considers that citation to the Radford report does not provide any basis for challenging the emergency planning regulations and that it certainly provides no basis for challenging emergency plans made pursuant to the regulations. (Applicant's Brief at 36-45.) Applicant also makes a variety of specific factual points about specific Kinney contentions. (Ibid.)

For its part, Staff generally agrees with Applicant but argues forcefully that the Radford article relates to a conflict over the shape of the dose-response curve for ionizing radiation and is not new. (Staff Comments at 19.)

(3) Conclusions

Intervenors contentions on emergency planning were not presented as a single contention. However, viewed as a whole, these contentions raise many concerns about the off-site emergency planning process. These contentions, including the separately argued Potassium Iodide issue and the other separate contentions discussed in this section, are admissible as an issue in this proceeding.

In reaching its decision on admissibility, the Board reviewed the specificity factors. (Its review of those factors is set forth below.) For ease of subsequent reference, we shall refer to admitted contentions as "issues." This particular issue has been rephrased by the Board as follows:

ISSUE #1: Applicant's emergency plans do not provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property.

The contentions combined in this generally phrased issue raised a series of specific factual concerns related to the overall proposition that the emergency plan is not "workable." We interpret these contentions to apply to state and local emergency plans, which have not yet been completed, and to imply that Applicant has not yet filed plans that comply with NRC regulations found in Appendix E to Part 50. In particular, intervenors are understood to have asserted that Applicant has not satisfied the requirement of Section III of Appendix E, that:

[Applicant must] ... demonstrate that the [emergency] plans provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property.

Intervenors also may be inferred to be alleging that Applicant has not complied with the joint Commission-Federal Energy Management Agency *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants* (NUREG-0654; FEMA-REP-1; Rev. 1) at 56, 58 (criteria 8 and 9).

We have considered Staff's argument that an intervenor should not be permitted to establish basis through statements of counsel. (See Tr. 188, where Applicant appears to agree with this argument.) Were this argument limited to technical conclusions, it would be more persuasive. For example, we would be unlikely to accept a bare contention on stress corrosion cracking unsupported by any statement of authority. On the other hand, the regulations on emergency planning require that there be "reasonable assurance" of "appropriate measures." These are broad standards subject to differences of opinion. The Lake County Disaster Services Agency, which has official planning responsibilities, made a statement supportive of portions of the contentions included in this issue. (Tr. 224-225, 144-150.) There are other experts in emergency planning whose opinion may have special evidentiary weight, but this is a subject on which even the man in the street may have a credible opinion. We see no reason to require, at this stage of the proceeding, that intervenors disclose the experts they will call as witnesses or that they otherwise disclose their evidence on an issue in which opinion plays so important a part. Such a requirement would exceed the standard established in *Grand Gulf*.

We also reject Applicant's plea to delay ruling on this contention. (See Tr. 216.) Intervenors have given reasons for concern about the adequacy of the local plan which will be filed. Furthermore, they are required to file contentions now. If they find a current deficiency, it seems appropriate to admit the contention subject to dismissal through summary judgment if the deficiency is not cured.

There is one aspect of the emergency planning contentions which is not admissible. One of the arguments made by Sunflower at the hearing appeared to challenge the suitability of the Perry site because of the highway patterns in Mentor. We do not believe that this contention properly raises the issue of site suitability, which was litigated at the construction permit stage.

However, we reject Staff's argument that the contention relating to potassium iodide is barred because of the content of a letter of March 5, 1981 sent to Mr. Lou E. Gurfitta by the Commission. (Tr. 226-230.) That letter, which was not published for notice and comment and did not specifically bind this Board, simply refused to endorse use of potassium iodide at present. (Tr. 228.) Applicant does not consider this letter binding

on the Board. (Tr. 230.) The Board does not consider itself bound, and the potassium iodide considerations are therefore admissible.

In reviewing the specificity factors, we determined that Issue #1 satisfied specificity factor (1) because intervenors collectively demonstrated knowledge of Applicant's emergency plans, including a knowledge of the planning process and of the relationship between the proposed plan and the requirements of the surrounding community. This knowledge is not surprising. Intervenors live in the area of Perry, are well versed in its traffic patterns and facilities, and have raised a number of specific factual issues which, if accepted as true, cast substantial doubt on the overall workability of the emergency plan. Applicant's argument that petitioners did not understand the limited applicability of the on-site emergency plan included in the FSAR does not convince us that this contention should be excluded.

Factor (2) is satisfied because Applicant knows what is being challenged. We do not interpret the requirement of specificity of contentions to mean that only narrow issues can be raised. When, as here, intervenors challenge the overall workability of an emergency plan, together with making a number of narrower assertions concerning why it will not work, they cannot be barred from their broader contention on the ground that it is not specific. In the course of the special prehearing conference, Applicant and Staff learned specifically what intervenor asserts. That the assertion is broad does not prevent it from being asserted with specificity.

Factor (3) is satisfied because intervenors' specification of a number of emergency plan particulars provided a reasoned basis for their overall challenge to the workability of the plan. It is not necessary at this point for us to inquire into the truthfulness of each of the particulars. Indeed such an inquiry would place us in the position of disregarding *Grand Gulf* and *Allens Creek*. While providing a "reasoned basis" for a technical contention may at times require citation to a plausible authority, a reasoned basis does not always require a citation. The workability of an emergency plan is the kind of issue on which knowledgeable local citizens can form a reasoned opinion. In particular, the Lake County Disaster Services Agency has participated in raising doubts about the workability of the emergency plan; and we do not think it appropriate to reject that Agency's opinion, particularly at this early stage of the proceedings.

Factor (4) is not applicable because the issue of prior litigation has not been raised. Factor (5) is not applicable because intervenors' contentions could affect the outcome of the proceeding decisively. The regulations require a workable emergency plan. Factor (6) is not applicable because there was no showing of technical shortcomings of many parts of intervenors' showings.

On the other hand, the admission of Issue #1 should not be interpreted as endorsing the accuracy of intervenors assertions or the relevance of the Radford conclusions, which Mr. Kenney cited. In particular, intervenors will need to show the relationship between the Commission's emergency planning regulations and evidence concerning increased estimates of the somatic effects of radiation.

The admission of this broad issue should not necessarily be interpreted as foreshadowing a full evidentiary hearing on this entire subject. Parties have available a motion for summary judgment, and that procedure may be used to pare down this issue before hearing. The standard provided in the rules for application to a motion for summary judgment is more rigorous than the standard applicable to the admission of contentions.

B. Financial Responsibility Contentions

(1) The Contentions

Sunflower alleged that Applicant lacks the financial resources to complete, operate and decommission the Perry units. The principal source of its concern arises from alleged construction cost increases from a planned total cost of \$1.2 billion to current cost projections of \$3.85 billion. (Tr. 235.) Sunflower cites Charles Kominov, an economist, for the proposition that the actual completed costs of Perry will be about \$5.25 billion. (Tr. 236.) Additionally, Sunflower states that there has been "a very substantial change in the circumstances [and] ... methods of financing and the overall characteristics of the cash flow requirements" of Applicant. (Ibid.) It cites a General Accounting Office study, EMD 8125, for the proposition that the utility industry in general has experienced a capital crunch arising from construction delays, sagging sales and sharply rising fuel costs. (Tr. 240.) It questions whether Applicant may have suffered financially from its participation in the Davis-Besse nuclear power plant, whose construction costs are alleged to have increased from a \$136 million original estimate to \$650 million. (Tr. 241.)

According to Sunflower, the Ohio utilities commission applies a rule which disallows from a utility rate base the cost of work in progress, prior to 75 percent completion of construction. (Ibid.) Since both Perry units are less than 75 percent complete, this is alleged to have an important financial impact on Applicant and its partners in financing Perry. (Tr. 241-242.) Indeed, one of the partners, the Penn Power Company, is alleged to be having financial difficulties that could prevent it from accepting its full share of the financing responsibilities. (Tr. 261-262)

Backfitting of plants since the Three Mile Island accident has been a substantial expense, and Sunflower alleges that there is a need to anticipate the need to finance further backfits in the future. (Tr. 242.) Furthermore,

the abandonment of recent nuclear power projects in the area was cited as an indication that such projects are generally now far less attractive financially than they have been in the past. (Tr. 244.)

Applicant's ability to provide properly for decommissioning is challenged by Sunflower because the size of the decommissioning surcharge imposed by the Public Utility Commission of Ohio has allegedly become inadequate due to inflation. (Tr. 245-246.) OCRE (7), a related contention, expresses the following broader concern with decommissioning:

In the aftermath of a *TMI*-type accident, Applicant's solvency would be imperative for the health and safety of OCRE members and the public. Applicant will need to promptly institute clean-up procedures to reduce further public jeopardy while maintaining containment integrity throughout that clean-up. The current financial straits of General Public Utilities (*TMI*) demonstrate that responsible and safe operation of a nuclear plant includes adequate preparation for such contingencies.

[Emphasis in original.]

This contention, which the Board interprets to relate to clean-up as well as decommissioning, is buttressed by an OCRE concern that the public has suffered a series of "rotating rate hikes" and that the utility could not look to the public for further increases to pay for a clean-up, should one be needed. (Tr. 250-251.)

(2) Arguments Opposing the Contentions

Applicant contends that its financial ability to complete construction is irrelevant at the operating license stage. It cites 10 C.F.R. § 50.33(f) as controlling. That section states:

If the application is for an operating license [for a commercial or industrial facility, the applicant shall show that it] ... possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of operation for the period of the license ... plus the estimated costs of permanently shutting the facility down and maintaining it in a safe condition.

Applicant also argued in the course of the Conference that this section must be interpreted in light of Part B of Appendix C, which states:

[I]t will ordinarily be sufficient to show at the time of filing of the application, availability of resources sufficient to cover estimated operating costs for each of the first 5 years of operation plus the estimated costs of permanent shutdown and maintenance of the

facility in safe condition. It is also expected that, in most cases, the applicant's annual financial statements contained in its published annual reports will enable the Commission to evaluate the applicant's financial capability to satisfy this requirement.

Applicant's brief on these contentions alleged that they were "conclusory" and failed to provide a basis for doubting Applicant's financial capability. With respect to premature decommissioning, Applicant cites NUREG-0586 as an indication that a rulemaking on the "financial implications of 'premature decommissioning'" is imminent; and it contends that the Board should not concern itself with matters that are the subject of rulemaking.

In addition, Applicant argued at the conference that:

We have had absolutely no basis advanced for suggesting that the companies will be unable financially to operate this plant while it's selling the electricity being produced from this plant during that time, other than a statement that the costs of construction have gone up.

Well, the costs of everything have gone up. That in itself doesn't mean ... that companies are financially unable to operate the plants.

(Tr. 256.) Applicant also argued that although most costs have gone up, the cost of nuclear fuel has come down, offsetting some portion of its other increased costs. (Tr. 485.)

At the request of the Board, Applicant also submitted further information on its financial standing. It stated the commercial ratings of its bonds for the record and represented that there are only two or three utilities in the country whose bonds are rated above Applicants' by the nationally recognized bond rating services. Furthermore, Applicants' bonds trade on the New York Stock Exchange and the current yield for the bond with longest maturity is 14 percent, which the Board considers comparable to the yields of bonds issued by large companies with sound financial reputations. (Tr. 453-456.)

In the course of the Conference, the following dialogue between Applicant and the Board occurred:

JUDGE BLOCH: Does the application contain all of the information that responds to the contention of [Sunflower] ..., that is, has the financial condition all been adjusted to include realistic increases in the cost of construction?

MR. CHURCHILL (APPLICANT): Well, at this point what the application contains is the information that's normally on the public record outside the application, the annual reports, prospectuses and so on.

JUDGE BLOCH: Then is the answer that you have not projected the finances of the company to the time of completion to be able to show in the application that you will have adequate financial resources to operate the plant safely?

MR. CHURCHILL: There is information that's required in Appendix C and in 50.33(f) for operating the plant that has not yet been submitted. All of the information required by the regulations has not yet been submitted. Typically this isn't done. NRC asks for it at a point in time closer to operation, so take a look at it then.

(Tr. 257-258.)

In general, Staff concurred with the position of Applicant, stressing the alleged lack of basis for this contention.

(3) Conclusion

The intervenors' contentions on financial responsibility shall be admitted as an issue, rephrased as follows:

ISSUE #2: Applicant has not demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of operation, including the costs of reasonably foreseeable contingencies, for Perry Nuclear Power Plant, Units 1 and 2.

Sunflower's allegation that Applicant lacks the financial resources to complete construction shall be interpreted to relate to other allegations concerning its financial ability to operate the reactor. The Board will not consider arguments concerning the validity of the construction permit because those arguments have been fully litigated and are not properly part of this proceeding.

The Board's further analysis of this matter was complicated by the issuance on May 13, 1981, of a memorandum from the Commission's Secretary to its Executive Director for Operations concerning a proposal to stop requiring applicants for operating licenses to prove the financial ability to operate power reactors. The memorandum reported unanimous agreement among the Commissioners that 10 C.F.R. § 50.33(f) should be amended so that applicants need no longer demonstrate financial capability. However, the memorandum concluded that "OGC [the Office of General Counsel] and ELD [the Office of Executive Legal Director] should

be consulted to assure that they are in agreement with the scope of the rules as it applies to financial considerations under NEPA." Consequently, there is still some uncertainty concerning the direction which the Commission will take in issuing a proposed rule, which will itself of course be subject to modification or withdrawal in the course of rulemaking.

Under these circumstances, we do not consider ourselves barred from considering the financial qualifications contention. There is no clear direction to us to refuse to consider the contention, and an existing rule of the Commission remains in effect and binding on us.

That rule requires that Applicant demonstrate its financial capability to run Perry. Although it is generally true, as Applicant has contended orally, that income will exceed expenses while a power reactor is operating, it is not possible to accept that general statement as proof that the rule's requirements are fulfilled. (See Tr. 253-259.) Were we to accept that general statement in fulfillment of the requirement, we would have erected an irrebuttable presumption which would make it unnecessary for an applicant ever to prove its financial capability.

This, under the current state of the rules, we cannot do. The present rule requires proof of financial capability. When specific challenges are made to that capability, those challenges must be answered. Although it is unclear whether the operator of a reactor must be financially prepared to provide for cleanup of an accident, or the extent to which it must provide, this issue of interpretation also is open and cannot be excluded at this stage of the proceedings.

The current rule has an important purpose. It is possible for an applicant to scrape by financially during the construction stage. That is, due to unanticipated cost increases and backfit requirements, it might barely manage to complete construction. If it does just scrape by, then the company's financial straits could interfere with its sound judgment in safety matters. Safety measures that might be taken by a financially healthy company might not be taken.

The Statement of Consideration which accompanied the latest amendment to the financial requirements regulation indicated, in the following language, that these requirements are designed to protect public health and safety:

...The Act and the Commission's regulations reflect that the fundamental purpose of the financial qualifications provision of that section is the protection of the public health and safety and the common defense and security.

Although the Commission's safety determinations required for the issuance of facility licenses are based upon extensive and detailed technical review, an applicant's financial qualifications can also contribute to his ability to meet his responsibilities on safety matters.

33 FR 9704 (1968).

The information Applicant submitted concerning the ratings of its bonds and their current yields in New York Stock Exchange trading provides a general indicator of financial health. Indeed, these favorable financial signs show that intervenors may have great difficulty proving their case. However, recent experience concerning the financial markets' ability to anticipate financial difficulties — including trading in the bonds of Penn Central, New York City and Chrysler Corporation — indicates that financial ratings and market prices are incomplete assurance of future financial safety. Hence, we are unable to preclude inquiry into Applicant's financial responsibility because of its current financial reputation.

Timing. The one remaining aspect of Applicant's response to this contention is the argument that Applicant is not yet required to produce financial projections showing its position at the time the reactor will commence operation. However, that argument appears to be without basis in Appendix C, Part 50, which requires applicants for operating licenses to show "at the time of filing of the application, availability of [sufficient] resources...." Although the section goes on to state what will "ordinarily" be sufficient and what "in most cases" will be sufficient, intervenors questions concerning increased construction costs and costs for backfitting are sufficient to overcome those presumptions. Nor is it sufficient that Applicant intends to update its filings at a later date. We have no choice but to judge the adequacy of contentions now. Subsequent events, prior to a motion for summary judgment under 10 C.F.R. § 2.749, could influence the outcome of a summary judgment motion; but the possibility of a later change cannot influence the decision on the admissibility of contentions.

C. Need for Power Contentions

(1) The Framework

Cleveland Electric Illuminating Company, after a complete environmental review, was awarded a construction permit for Perry. During the construction stage, 10 C.F.R. § 51.26 required a "final environmental statement" that included "a final cost-benefit analysis and a final conclusion as to the action called for."

At the construction permit stage, the required cost-benefit conclusion balanced the advantage of generating nuclear power against the economic and environmental costs of construction and the potentially adverse economic and safety effects of loading fuel, operating and decommissioning

the reactor. At the construction permit stage it also was necessary to consider whether other methods of generating power might be preferable to the use of nuclear power generation.

It is, of course, the environmental and safety effects of loading fuel and operating a reactor that are of greatest concern to intervenors. Hence they believe operation of the reactor should not be authorized even after its construction is completed. They do not think that the benefits of power generation outweigh the costs even after subtraction from the cost-benefit balance of the environmental effects of construction and the \$1.5 to \$5 billion that will be spent pursuant to the construction permit that was already granted.

However, the prior adjudication concluded that construction of the reactor was justified despite these huge construction costs and the environmental costs of massive construction. Furthermore, principles governing the finality of adjudications require us to respect findings reached during the construction permit adjudication. *Alabama Power Company (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210 (1974)* (collateral estoppel prevents rehashing issues already ventilated and resolved at the construction permit stage).

We may readjudicate issues, but only if there is a significant change of circumstances or policy. Reasonable interpretation of "changed circumstances" requires consideration of the shift in the cost-benefit balance that always occurs after construction is licensed. At that point, construction is authorized. Consequently, at the operating license stage, the monetary and environmental costs of construction are irrelevant. Therefore, an adverse change in one or more of the other factors considered in the cost-benefit balance at the construction stage must offset the construction costs, which were considered prior to the issuance of the construction permit but which are no longer relevant.

For the Board to conclude that there are significantly changed circumstances, it must accept the alleged changes as true. Then it must find that the changes are sufficient for a power plant, whose construction has been authorized, to be forced to sit idle because the economic and environmental costs of operation exceed the benefits derived from the generation of power. If this balance indicates that the plant should not be operated, then the Board must admit the issue. If the Board finds that this overall environmental balance is not affected even if the allegations are accepted as true, then there would be no purpose in having discovery for the purpose of proving the allegations. That would be a pointless waste of time. Instead, if this balance is in favor of operation of the plant, even when the allegations are assumed to be true, then the contention should not be admitted as an issue.

Collateral estoppel. We are aware that this legal interpretation represents an extension of the equitable doctrine of "collateral estoppel." That doctrine, which was recently reviewed in *Houston Lighting and Power Company, et al. (South Texas Project, Units 1 and 2)*, LBP-79-87, 10 NRC 563 (1979), *aff'd summarily*, ALAB-575, 11 NRC 14 (1980), has traditionally been applied only when both parties in a case were also parties (or their privies) in a previous case. An explanation of this limitation is that it would be improper to apply decisions to persons who have not had an opportunity to be heard. *Id.* at 572.

As an equitable doctrine, collateral estoppel is capable of flexibility to meet the equities of particular procedural contexts. For example, the Supreme Court of the United States approved a limited extension of that doctrine to permit "offensive" collateral estoppel — the claim by a person not a party to previous litigation that an issue had already been fully litigated against the defendant and that defendant should be held to the previous decision because he has already had his day in court. *Parklane Hosiery Company, Inc., et al., v. Leo M. Shore* 439 US 322, 58 L.Ed.2d 552, 99 S Ct 645 (1979).

In *Parklane* the Supreme Court weighed the equities involved and determined that it was appropriate to apply collateral estoppel, even though application of the doctrine defeated a constitutional claim to a jury trial. (Mr. Justice Rehnquist dissented on this point.) In the course of the decision, the Court approved broad discretion for trial courts in applying the doctrine to cases of offensive collateral estoppel. (*Id.* at 331.) It also explained that:

Collateral estoppel, like the related doctrine of *res judicata*, has the dual purpose of protecting litigants from the burden of relitigating an identical issue with the same party or his privy and of *promoting judicial economy by preventing needless litigation.*

[Emphasis added.]

The Board has decided to apply the spirit of *Parklane* to this case. In this context, we find that the arguments opposed to collateral estoppel are comparatively weak and the arguments in its favor are comparatively strong. Hence, we shall apply collateral estoppel to this proceeding.

Commission licensing is dissimilar from many other forms of litigation. Unlike many other kinds of cases, licensing cases are notorious. Their existence is not merely noticed in the federal register. Universally, plans to build a nuclear plant receive widespread news coverage; and the licensing proceedings themselves also are extensively covered. Consequently, residents living in the area of a proposed plant have actual notice rather than

just constructive notice. Furthermore, even late petitioners with serious concerns and good cause for late filing are commonly granted intervention. See, e.g., *Public Service Company of Oklahoma Associated Electric Cooperative, Inc., et al. (Black Fox, Units 1 and 2)*, LBP-77-17 (March 9, 1977).

In addition, intervenors who are admitted play a different role in Commission proceedings than in many other kinds of litigation. Although they are admitted to the proceeding because of their own interest, often because of residence near to the plant, their safety and environmental concerns often are quite general, as they were in the construction stage of this proceeding. Hence, while intervenors do not have any obligation to represent persons who are not parties, they often attempt to litigate generally any concerns which might also bother other residents in the community. Furthermore, even when intervenors' ability to broadly represent the community may be called into question, it is the obligation of the Staff, which always participates, to represent the public interest. In addition, the Commission's staff attempts to protect the public further by conducting an independent safety and environmental review that is required by statute.

On the other hand, Applicant in a construction permit proceeding litigates all the issues that are raised. At the conclusion of the proceeding, it may obtain a license to construct the facility. It often invests over \$1 billion in reliance on the license. Of course, Applicant knows that it is continuously responsible for revising its plans in light of current knowledge and that it may face a serious challenge at the construction permit stage. However, its reliance on its construction license is substantial.

When the Board balances the equities, it concludes that collateral estoppel can properly be applied so that issues decided at the construction permit stage need not be rehashed at the licensing permit stage even when new parties have intervened in the latter proceeding. See *Northern States Power Company (Prairie Island Nuclear Generating Plant, Units 1 and 2)*, ALAB-455, 7 NRC 41, fn. 4 at 46 (1978) (in a proceeding to amend a license to enlarge a spent fuel pool, the environmental inquiry may be limited to the consequences of the amendment). Of course, in each instance the Board must not reject a petition which raises significant new material. Given this extension of an old and venerable doctrine, the Board must welcome any argument that casts significant fresh light on an issue decided during a construction permit proceeding in which the party was not directly represented. However, something that is fresh and significant must be added to avoid merely rehashing old issues.

In this Memorandum, whenever the issue of collateral estoppel has been raised, specificity factor (4) becomes involved. Necessarily, a decision that specificity factor (4) has not been met will mean that the Board also has

concluded that the issue should be barred because of the equitable doctrine of collateral estoppel.

(2) The Contentions

Sunflower alleges that a reasonable forecast of the net energy demand for the next two to eight years does not justify an operating license. It points out that Applicants have revised their demand forecasts downward about 24% between their 1978 and 1979 projections. At the conference, it pointed out that the reduction was from a 4.4% projected growth rate to a 3.3% projected growth rate. (Tr. 520.) In addition, Sunflower relied on a study by Energy Systems Research Group to indicate that a more realistic ten year projection might be growth of 1.98% per year. (Tr. 529-530, 532.)

Sunflower also cites some general literature for support for the contention that forecasts of growth rates may be off by up to 100 percent. Sunflower alleges insufficient consideration of alternative energy possibilities, including cogeneration and conservation. Furthermore, innovative management options — such as load management plans, innovative rate structures and power-exchange alternatives — are said to have been ignored

At the Conference, Sunflower argued that Mr. Richard Rosen, of the Pennsylvania Office of Consumer Advocate, has testified that the Perry plant will cause Applicant and its partners to be over-baseloaded. (Tr. 469-470.) It also argued that Perry would undergo a substantial shakedown period during which its reliability might be far lower than predicted and its costs of operation might be far higher. Sunflower cited experience at the Davis-Besse reactor in support of the proposition of lower-than-expected reliability. (Tr. 480-482.)

OCRE also is concerned that Applicant has not taken into account in its demand growth projection “all significant factors affecting demand” and that it has not internalized all significant external costs, “so that the total cost of electricity is charged to those using it.” It also asks for increased energy conservation and management options similar to those sought by Sunflower.

Mr. Kenney joined in these contentions and also expressed concern that the cost of financing an emergency plan and an emergency response capability had not been included in Applicant’s cost estimates. (Tr. 479-480.)

(3) Arguments Opposing the Contentions

The brief on contentions which we received from Applicant seven days before the Special Prehearing Conference, said that:

Petitioners have failed to provide an explanation of why or how its proposed alternatives have been inadequately considered, or how any of the allegations would upset the cost-benefit analysis to the extent that licensing the operation of the facilities would be inappropriate. This lack of basis for the contentions is reason alone for rejecting the contentions pursuant to 10 C.F.R. § 2.714(b).

Applicant also argues that it is unreasonable to review the need for power during consideration of an operating license because the issues have been fully reviewed during the construction permit stage. It cites the "rule of reason" applicable to the consideration of alternatives in NEPA reviews. For authority it cites several federal court cases, including *Natural Resources Defense Counsel v. Morton*, 458 F.2d 827, 834-36 (D.C. Cir. 1972), *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519 (1978) and *Concerned About Trident v. Rumsfeld*, 555 F.2d 817, 825 (D.C. Cir. 1977). Further citations are offered in support of the proposition that "alternatives to completed projects need not be considered." These further citations are to cases dealing with a dam and with a Federal housing project.

Applicant's last argument in its brief is that the National Environmental Policy Act "is not an authorization to undo what has already been done" and that such an effort "would be a vain attempt to reform past decisionmaking." Citations are offered to *Jones v. Lynn*, 477 F.2d 885, 890 (1st Cir. 1973) and to *National Wildlife Federation v. Appalachian Regional Commission*, 000 F.2d 000, 15 E.R.C. 1945 (D.C. Cir. 1981).

At the conference, Applicant argued that intervenor's contention acknowledged that Applicant had already taken account of reduced need for power in its Environmental Report. (Tr. 484.) Furthermore, Applicant reported that it has dropped plans for 4,200 megawatts of capacity in 1983, representing over a 20 percent capacity reduction for that year.

Applicant also argued that in the construction permit stage there were numerous motions to reopen the record whenever a load forecast was changed; and Applicant argues there is no reason to reopen the issue again in the operating license stage.

In the course of argument and in its post-hearing brief, Applicant pointed out that Mr. Richard Rosen, cited as an authority on the need for power issue by intervenors, had testified in favor of the need for power at Perry Unit 1 and had reservations only for Unit 2. (Tr. 488-490.) This clarification was accepted by Sunflower. (Tr. 521.) Applicant also argued that Mr. Rosen's testimony was rejected by the Public Utility Commission. (Brief on Contentions at 14.)

Staff points out that changes in the growth of the need for power do not necessarily require the abandonment of a plant. Indeed, it argues that all changed estimates would require is a delay in the operating date of the plant. (Tr. 514.) Given this consequence of an adjusted estimate of need, Staff argues that these are not the kind of changed circumstances required to reopen a previously litigated issue.

(4) Conclusions

After reviewing the factors discussed above we have concluded that the need for power contentions should not be admitted as an issue in this proceeding.

Intervenors have made a variety of general assertions concerning the need for power. In particular, they have cited a variety of studies showing a general decline in the need for power in the period since the grant of the construction permit.

However, when intervenors contentions are narrowed to the Perry plant, they focused primarily on the 1978-1979 time period. During that time period, we are informed that Applicant revised its estimates of the rate of growth in need for power downward by 24%. Even if a study cited by intervenors should be accepted, all intervenors are claiming is that a 4.4% projected growth rate in need for power should be reduced to a 1.98% growth rate. Furthermore, most of this alleged reduction was addressed by Applicant in its Environmental Report and has caused Applicant to reduce its planned power capacity for 1983 (the first year Perry is projected to operate) by over 20%. Intervenors give no reason or basis for the Board to believe that this response by Applicant was inadequate.

To admit the "need for power" issue, we must find that there are sufficiently changed circumstances to permit intervenors to challenge the overall environmental balance struck at the construction permit stage. This we cannot find. Changes in the need for power and the supply of power must be viewed in relationship to changes in the entire environmental context, including the fact that Applicant has constructed a power plant pursuant to its license at a cost of over \$1.3 billion (adjusted upward for inflation) and has inflicted all the environmental damage resulting from construction. Hence, construction costs for the Perry plant are, in the jargon of economists, sunk costs; and the original environmental balance, which was formally determined to favor that plant, now weighs far more in its favor.

We find these circumstances controlling, even if we accept as true the full weight of Sunflower's contentions. Consequently, we find that Sunflower has not alleged sufficiently changed circumstances for us to review the entire environmental balance. *Compare Pennsylvania Power and Light*

Company, Allegheny Electric Cooperative, Inc. (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-6, 9 NRC 291, 302-305 (1979) (where the low growth rate scenario in the Environmental Report contemplated all nuclear power being sold outside Applicant's service area, and where intervenors had other significant environmental contentions shown not to have been litigated during the construction stage).

In terms of the factors set forth in Part II of this memorandum, our decision not to admit this contention has been most affected by factors (1), (4) and (5). Applicant acknowledged a change in the need for power in its environmental report, and intervenors have not indicated in what way Applicant's handling of that problem is incomplete. In addition, intervenors have not shown why circumstances have changed sufficiently to permit relitigation of issues already thoroughly litigated at the construction permit stage. Furthermore, even if Sunflower's factual assertions are accepted as true, there would be no basis for concluding that consideration of environmental factors favors abandonment or curtailment of Perry.

We need not decide whether the National Environmental Policy Act requires the Commission to consider need for power as part of its environmental review. Need for power generally is addressed in the Environmental Impact Statement and is considered by the Director of Nuclear Reactor Regulation in his determination of whether to issue an operating license. The Director's review satisfies NEPA requirements. We are not required by NEPA to adjudicate need for power.

D. Spent Fuel Storage Pond Contentions

(1) The Contentions

Sunflower contends that neither the Environmental Report nor the Final Safety Analysis Report adequately consider

the health, safety and environmental effects of a possible major radiation release accident in the spent fuel storage pond [and the] ... impacts [of such an accident] on the off-site emergency plans.

(Sixth ground of intervention.) At the Conference, Sunflower limited its contention to an allegation that the pool could flood over its bank (Tr. 314); and it also limited this contention by stating its concern with the adequacy of preparations to continue the circulation of coolant in the pond in the event of an on-site radiation release or a power outage. (Tr. 305-306.) Sunflower also expressed its concern that the Perry site is in a flood plain and that releases of coolant mixed with radioactive material might therefore result in pollution of ground water. (Tr. 307.)

(2) Arguments Opposing the Contentions

Applicant and Staff both alleged in their written briefs that there is no basis for Sunflower's contentions. They state that intervenors should have specified the nature of the inadequacy of which they complained.

At the conference, Applicant argued that two recent cases had determined that contentions involving spent fuel pools used by pressurized water reactors were without merit. (Tr. 307-308.) With respect to the statements of Sunflower at the hearing, Applicant stated:

There is absolutely no basis for any of these statements. The statement is that a halt in the circulating process of water for several hours could cause severe radiation release. The facts in [recently litigated] ... cases show that if you loose coolant you may reach boiling. The pool may boil. That's not a safety concern. You only get to a safety concern when you boil the water down to a level that the fuel is exposed. Calculations for that in general show that you have several days. Those calculations I believe are reflected in the FSAR.

(Tr. 309.)

* * *

You have many sources of redundant makeup water, some of which are seismically qualified.

In this case we have Lake Erie. You can take a fire hose down to Lake Erie and run it up to the spent fuel pool.

The FSAR .9.1-24 in volume 13 calculates that you have approximately 364 hours under the most conservative conditions ... before you would get to 160 degrees Fahrenheit, let alone before you would get to boiling.

(Tr. 310. *See also* Tr. 312.)

Staff argues that all Sunflower had done was to question whether boiling off or flooding could happen at the spent fuel pool. (Tr. 304-312.) It also indicates that in the course of the conference the chairman asked petitioners "what is the deficiency you're alleging?" (Tr. 304.) However, petitioners never were able to specify a deficiency.

(3) Conclusion

We have decided to reject this contention. A careful review of the record shows that Staff is correct in arguing that Sunflower has indicated a concern about the spent fuel pool boiling over; but it has not alleged any specific deficiency in this plant.

Study of the record is persuasive. Here are the passages in which Sunflower tried to indicate the deficiency which it is alleging, in response to the Chairman's question:

MR. LODGE (Sunflower): There are several problems that come to mind. One is the adequacy of preparations to continue the cooling process, the circulation of coolant in the pond in the event of a major on-site radiation release.

* * *

... There is a certain small amount of decay heat from the fuel storage pond. My understanding is it usually ranges up to approximately seven percent of the former energy increase.

JUDGE BLOCH: Do you have any idea what length of interruption of coolant to the storage pond would be necessary for there to be an independent danger? MR. LODGE: Only very generally. I am aware that in 1980, that in intervention by a township government in a New Jersey licensing case for, I think, Salem III, and I do not have any cite information beyond that, that there were contentions raised by the township government ... that the spent fuel pond raised a number of health and safety considerations, that a halt of the circulatory process in that pond for a period of, I believe, several hours duration could cause a very severe radiation release...

JUDGE BLOCH: Do you know if that pond is similar to the pond in this case?

MR. LODGE: No, I do not.

Another concern is the availability of energy to circulate coolant in the event of a major off-site power outage or an on-site power outage or some combination of the two which might retard the operation of the coolant circulation process.

Also, with specific respect to the Perry site, the eastern portion of the county, at least along the lake, is in a flood plain. Thus, if there were liquid releases of coolant mixed with radioactive material, there would be a strong possibility of accumulation in ground water supplies as well as the soil surrounding the storage pond itself.

(Tr. 304-307.)

Our review of the specificity factors persuades us that this contention is not admissible as an issue. Generally, we have required that when

Applicant relied on a particular section of its FSAR, intervenors must provide a basis either in reason or authority for rejecting Applicant's response. In this instance, Applicant did not cite a specific section of the FSAR in its response; consequently, a less rigorous standard of specificity may be appropriate. However, intervenors have failed to satisfy factor (1) because they have not indicated any deficiency in this particular plant. Knowledge that there may be some problem in spent fuel pools that may not even be similar to Perry's pool is not sufficient specificity either for factor (1) or factor (2).

Furthermore, risk from the spent fuel pool is not a subject amenable to popular opinion, similar to emergency planning issues which we discussed above. To raise a technical issue of this nature, there need be more than counsel's unsupported statement that release could occur through "boiling over." Without a plausible mechanism or accident scenario, Sunflower has failed to indicate what it seeks to prove in order to demonstrate that Perry's fuel pool should be considered a danger to the community. Hence, factor (3) also has not been satisfied.

In addition, we examined factor (6); but Sunflower's lack of knowledge of Perry's spent fuel pool precludes us from deciding that this contention should be admissible despite its technical shortcomings.

E. Hydrogen Bubble Contention

(1) The Contention

Sunflower alleged in its petition that Applicant had not documented the ability of the containment structures "to safely inhibit a hydrogen explosion of the magnitude and type which occurred at the Three Mile Island Unit 2" (Seventh ground of intervention.) OCRE's contention 5 was similar to this Sunflower contention.

(2) The Regulatory Setting

As intervenors were informed at the conference (Tr. 320-322), this issue is controlled by *Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1)*, CLI-80-16, 11 NRC 674 (1980). In that decision, the Commission stated its belief that:

quite apart from 10 C.F.R. 50.44, hydrogen gas control could properly be litigated in this proceeding under 10 C.F.R. Part 100. Under Part 100, hydrogen control measures beyond those required by 10 C.F.R. 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.*

[Emphasis added.] *Id.* at 675. (Ignore garbled transcript 320-322.)

Applicant and Staff claim this issue is barred from the proceeding by the publication of an Advance Notice of Proposed Rulemaking, "Consideration of Degraded or Melted Cores in Safety Regulation," 45 Fed. Reg. 65474 (1980). However, the Commission's decision in *Three Mile Island 1* plainly contemplated the prompt initiation of a rulemaking on degraded core conditions. *Ibid.* That rulemaking has commenced. Since the notice of that rulemaking does not prohibit further Board consideration of hydrogen bubble contentions it appears appropriate to continue to apply the just-cited language of the Commission. Intervenor's are not barred by the pending rulemaking from raising this question but they should be aware that issuance of a final rule would remove this question from our jurisdiction.

At the conference, intervenors were informed of the applicability of this standard to the hydrogen bubble question. Sunflower Alliance said that they could not meet this standard in the course of the Conference. (Tr. 322.) OCRE also expressed an inability to meet the standard. (Tr. 323.)

Since the conference, the Commission issued its decision in CLI-81-15, *Duke Power Company (William B. McGuire Nuclear Station, Units 1 and 2)* 14 NRC 1 June 29, 1981). Although that Commission decision approved the result reached by the Licensing Board in that case, two of the four participating Commissioners were highly critical of the result and one, who refused to be critical because of the procedural posture of the case, said that technical questions are not properly resolved in licensing cases. Accordingly, the appropriate treatment of hydrogen contentions is somewhat unclear. We apparently could adopt Commissioner Gilinsky's view that the requirement of a specific credible accident sequence "amounts to saying that there is no need to protect against an accident that cannot be anticipated in detail, even when a closely related accident has already occurred." *Id.*, at p. 9. However, we find that the *TMI* decision is still law and that we are "forced to act in blinders." *Id.* at p. 10-11. Were intervenors to propose a specific accident scenario, we might adopt a broad view of what is "credible," in light of the accident at *TMI* and this ambiguous legal background, but without such a scenario we are now powerless to admit this particular contention.

Intervenor's may desire to raise this contention at a later time. Should they do so they will need to meet the requirements of § 2.714, governing late filings of contentions. Obviously, as time passes, the criteria of that section will be harder and harder to meet.

(3) Related Matter

In the same contention as the hydrogen bubble matter, Sunflower challenged the licensing of Perry "to emit certain minimal amounts of radiation." This contention was not discussed at the conference and is therefore considered to have been dropped. Had it been discussed, there are several independent reasons to consider it inadmissible, including the conclusion that it is a challenge to Appendix I to Part 50 and that it lacks specificity.

F. Tandem Licensing Concern

In the discussion of this item, Sunflower stated that it was not really a contention but a legal argument. Sunflower expressed concern that Perry Unit 2 is still 6 years from completion and that it would not be appropriate for this Board to make recommendations in the course of this proceeding that would influence the licensing of Unit 2. The Board explained that a license would not be issued for Unit 2 until the Director of Nuclear Reactor Regulation determined that it had met the standards of 10 C.F.R. § 50.57; and that those findings require, among other things, that the facility be "substantially completed." In addition, the Board could retain jurisdiction of the licensing proceeding, if — as does not seem to have happened — there are pending issues specifically questioning the licensing of Perry Unit 2.

G. Quality Assurance Contention

(1) The Contention

Sunflower alleged, as ground 9(1), that:

Applicants have demonstrated throughout the construction process their inability to comply with the Quality Assurance Program established by both the Commission and the Applicants. Applicant's construction practices, as demonstrated in the Commission's own inspection reports, are totally inexcusable.

In the course of the Conference, intervenors indicated that the failure of quality assurance was evidenced by a voluntary stop work order in February 1978. (Tr. 338-339.) Sunflower also alleged faulty quality assurance in the placing of concrete. (Tr. 340-341.) It filed, at the request of the Board, several other reports by Commission inspectors finding that there were quality assurance deficiencies.

(2) Arguments Opposing the Contention

In their briefs, neither Applicant nor staff responded to this sub-contention. Applicant stated that the way in which the contention was worded misled it into believing that this particular wording was simply an

introduction to the quality deficiencies that Sunflower listed as examples for the ninth ground of intervention. (Tr. 345.) (The listed examples are discussed in the next section of this memorandum. In the discussion of this contention, intervenor explained at the hearing that the listed examples really are separate contentions not related to its overall claim of lack of quality assurance.)

With respect to the substance of the contention, Applicant stated that quality assurance incidents had occurred, as they always do on large projects. They are not extraordinary. (Tr. 346.) Furthermore, none of the deficiencies assessed against Perry related to defects in the physical plant; all of the deficiencies related to failure to properly implement the paper procedures and organizational requirements for quality assurance. (Tr. 618.) Applicant assures the Board that those problems were resolved through a complete restructuring of the quality assurance program, including a fourfold increase in the number of personnel involved. (Tr. 619.)

(3) Conclusion

This contention, simplified as follows, shall be admitted as an issue:

ISSUE #3: Applicant has an inadequate quality assurance program that has caused or is continuing to cause unsafe construction.

The Board shared in the confusion engendered in Applicant and Staff concerning the scope of this multi-faceted contention. (Tr. 348.) Our concern was heightened when we learned, near the conclusion of the hearing, that this contention was available in far more particularized form than Sunflower chose to make available to the Board. Sunflower's attorney admitted that he had petitioned United States Senator John Glenn for the cessation of all licensing of nuclear reactors and that he had used the deficiency reports in support of the petition. (Tr. 621-626.)

The fact that Sunflower possessed far more detailed information than it presented to the Board has a bearing on whether it can show cause for failure to comply with the Board's order to particularize this contention 15 days prior to the Conference. Under these circumstances, we have decided to treat this particular contention differently and to prohibit Sunflower from further particularizing its contention in the course of the Conference.

However, we have reexamined the language used by petitioner in its ground for intervention. Although we were confused because the introductory sentences were combined with the specific examples that followed, we now find that the wording of the contention indicated that the listed examples were not the only problem alleged by intervenors. Indeed, Sunflower referred specifically to "the Commission's own inspection

reports" and alleged Applicant's general inability to comply with its Quality Assurance Program. This should have alerted Applicant and Staff to consult with quality assurance personnel and to review the inspection reports to ascertain further what was being alleged. (Specificity factor (2).)

Close reading of the predicate to the additional, listed deficiencies also indicates that the passage should not have been misleading. The list is introduced as "the following but by no means the only deficiencies."

Of course, merely interpreting the allegation does not conclude our determination of its admissibility. This is particularly so because of the possible adverse safety effect of the treatment of this allegation in this proceeding.

An allegation of a deficient quality assurance program has the inherent danger that it can interfere with the efficient operation of the very program it questions, both at this plant and at others. A good, working quality assurance program identifies deficiencies for correction. If deficiencies are reported the system is working; and intervenor cannot fashion an admissible contention merely by filing deficiency reports without further explanation. Otherwise, we would create an adverse incentive for reporting deficiencies; and this incentive could seriously impact plant safety.

However, the allegations in this case do not stem solely from routine quality assurance reports. Perry's problems were serious enough to stop work and to require reorganization of its entire quality assurance program. Under these circumstances, adverse effects on quality assurance programs must be accepted because of our primary responsibility to resolve contentions about plant safety.

Applicant's response concerning the complete correction of all deficiencies is insufficient assurance. We carefully read the letter from William J. Dircks, Acting Director for Operations of the Commission, to Senator John Glenn and we find that less is resolved by this letter than does Applicant. In particular, Mr. Dircks confirms Sunflower's allegation that an immediate action letter was issued to Perry for "significant site construction practices ... in January and early February 1978." Dircks' letter also stated that "Our Region III office instituted an augmented inspection program ... to assure that the construction which had been completed under the previous program was acceptable."

However, the Dircks letter does not state findings from that "augmented inspection program" and consequently leaves Sunflower and the Board without any way of determining the impact of the quality assurance deficiencies on plant safety. We cannot tell at this time whether there may be serious construction deficiencies. Additionally, there is insufficient basis for us to conclude that the reorganization effected by Perry was adequate to cure the problem that had existed.

We find this contention to be admissible as an issue because of each of the specificity factors other than (4). However, in rewording the contention we have introduced the requirement that any quality assurance deficiency must be linked to a construction deficiency. That is, intervenors must provide us with a reason to believe that quality assurance deficiencies have led to some safety defect in Perry.

H. Nozzle Cracking Contention

(1) The Contention

Sunflower alleged that General Electric boiling water reactors have developed cracking at the primary coolant nozzles, resulting in an ongoing investigation of these reactors. At the hearing, Sunflower could not expand on this contention. At that point, the Chairman stated that Applicant had cited § 5.3.3.1.4.5 of the FSAR, which cited General Electric reports that were said to have fully responded to this problem. However, Sunflower's attorney stated that he had not read that part of the FSAR. (Tr. 351-352.)

(2) Conclusion

Intervenor's inability to comment on the cited portion of the FSAR is fatal to its contention. (Factor (1).) A Contention need not be admitted just because an intervenor has become aware of a general problem relating to a particular kind of reactor. A contention must be sufficiently specific to show why a particular portion of the FSAR is deficient and to indicate some reason or authority in support of the asserted deficiency. Unless intervenor can satisfy the requirement of specificity, there is little reason to expect that it can contribute to the resolution of the particular problem. To the extent that there are unresolved generic problems related to nozzle cracking, the public interest will not go unprotected. Staff, with possible oversight from the Board, will review those issues. However, when intervenor is unable to relate its contention to any specific occurrences at Perry and cannot respond to a section of the FSAR cited in a required filing, the specificity factors have not been satisfied and the contention should not be admitted.

I. Geologic Fault Contention

(1) The Contentions

Sunflower contends that Perry stands on a geologic fault and "has not been built to earthquake standards." At the Conference, Sunflower suggested that it was appropriate to relitigate this issue, which was extensively litigated in the construction permit stage, because a "mild tremor" had occurred in the general area. (Tr. 353.) Under questioning from the Board, Sunflower admitted that it was not alleging that the quake

had exceeded the design specifications for Perry or that a fault on the site had become active during the tremor.

OCRE contends that the previous litigation concerning the fault on the Perry site was tainted because the investigation on which the findings were based was conducted by Applicant, which had a financial interest in the outcome of the proceedings. In addition, OCRE mentioned that a second fault (tunnel fault), which was discovered while a construction tunnel was being built, starts at the tunnel and extends under Lake Erie. (Tr. 360; *see also* Tr. 361 concerning a possible 22 inch slip of the strata.)

(2) Arguments Against the Contentions

Applicant argued that the tremor recently felt in the area had a Modified Mercalli intensity rating of two to three and was centered in the Cincinnati-Louisville area. Since the plant was designed for a quake with a Modified Mercalli intensity rating of six to seven, the occurrence of this weak, distant tremor is no ground for reconsidering fully litigated seismic issues. (Tr. 362). On the other hand, Applicant admitted that the tunnel fault was a new issue.

In its brief, Applicant stated that seismic issues were fully discussed in FSAR §§ 2.5,3.2,3.7, and 3.10. At the conference, it stated that it had conducted a seismic investigation of the tunnel fault and that the results of the investigation are fully reported in the FSAR. (Tr. 362.)

(3) Conclusion

After reviewing the specificity factors, we conclude that this contention should not be admitted into this proceeding at this time.

This significance of a geologic fault was fully litigated during the construction permit stage of this proceeding. At that stage, both the Licensing Board and the Appeal Board concluded that the fault was of glacial origin and that it did not pose any threat to the safety of the power reactor. The existence of a distant mild tremor provides no ground for reopening that question or for questioning the safety of the Perry reactor, which is designed to withstand a far stronger quake.

The nature of the "tunnel fault" has, on the other hand, not yet been litigated. If intervenors had some specific reason for finding the analysis in the FSAR to be defective, this would be an issue not barred by previous litigation. However, Applicant cited its FSAR in its answer and intervenors have not shown any reason to believe that the Applicant's answer is incomplete. Had intervenor presented an expert opinion that this fault could become active, then the issue might have been accepted as a valid contention. However, at the present time intervenor has not provided any reason or authority to provide a basis for the admission of this contention.

The specificity factors involved in rejecting the contention concerning the tunnel fault are sections (1), (2), and (3). The contention concerning the preexisting fault and the tremor was rejected primarily because of factor (4).

J. Asbestos Contention

Sunflower contends that asbestos, used by the plant in cooling towers, will flake, causing asbestos to leak into the air and otherwise interfering with the safe operation of the plant. However, Applicant responded in its brief that this was a fully litigated issue; and Sunflower had no response. (Tr. 364.) Consequently, this contention is found to have been previously adjudicated and is not admitted as an issue.

K. High Water Table Contention

Since Sunflower had no response to Applicant's statement that this issue was fully litigated (Tr. 365), this contention is found to have been previously adjudicated and is not admitted as an issue.

L. Davis-Besse Contention

Sunflower had contended that Cleveland Electric Illuminating Company (CEI) had failed to operate the Davis-Besse reactor properly. CEI, which the Applicant, stated that it is not the operator of the Davis-Besse reactor.

At the conference, Sunflower dropped this contention. (Tr. 365.) Consequently, it is not admitted as an issue.

M. Decommissioning Plan Contention

This contention has been limited to an assertion that Applicant has not satisfactorily explained what will happen to Perry once its useful life has expired. (Tr. 371-372.) Applicant contends that the regulations require the filing of a decommissioning plan prior to decommissioning but that no such plan is required as a condition of the issuance of an operating license. See 10 C.F.R. § 50.34(b). Applicant also contends that this allegation is the subject of an Advance Notice of Proposed Rulemaking on Decommissioning Criteria for Nuclear Facilities. 43 Fed. Reg. 10370. It argues that the notice, including a statement of the questions addressed, indicates that this subject is exclusively the subject of rulemaking and ought not to be considered in this proceeding.

Although it is possible that an applicant for an operating license may need to address some facets of the decommissioning process in its application, we need not decide that issue. Sunflower's contention is very general. It states that Applicant has not adequately addressed the decommissioning process, but it provides no basis for a concern that Perry will not be safely decommissioned. The regulations require applicant to show its financial responsibility for accomplishing the decommissioning

process. This is in itself some measure of protection for the public. Sunflower has not specified why this is not sufficient protection at the operating licensing stage. Consequently, it fails to meet factor (2) and on balance has not satisfied the specificity factors. We find that this contention is not admissible as an issue in this proceeding.

N. Final Safety Testing Contention

(1) The Contentions

Sunflower alleges that Perry will use a GE BWR/6 reactor and that it will therefore be a prototype plant. As a prototype plant, Sunflower argues that Perry must assure the public of its safety by performing a variety of tests, including: tests of core spray distributions, a full scale 30 degree sector steam test, a core spray and core flooding heat transfer effectiveness test, a test of the pressure suppression design of the containment structure and a critical heat flux test. At the Conference, intervenor specified that the contention relates to § 1.5.1.2 of the Perry FSAR. (Tr. 373.)

(2) Arguments Against the Contentions

Applicant's brief argues that all the suggested tests relate to the emergency core cooling systems of the Perry units and that Applicant has met the acceptance criteria in 10 C.F.R. § 50.46 and Appendix K to Part 50. Applicant interpreted this contention as an assertion that compliance with Appendix K was insufficient. It therefore argued that the contention constituted a challenge to the regulations.

At the conference, Applicant read into the record portions of the cited section of the FSAR. (Tr. 374-375.) However, Applicant was unable to respond to a Board question concerning whether the tests named by the Intervenors were in fact required to be performed in order to meet Appendix K requirements for "appropriate experimental data." (Tr. 379-380.) Furthermore, an additional Board question elicited the information that there are no other BWR 6 plants currently licensed to operate in the United States. (Tr. 380.)

Applicant also stated that testing of core spray and core flooding heat transfer effectiveness has been accomplished, citing the same sections of the FSAR cited by the intervenors. In the course of the citation, Applicant mentioned three licensing topical reports in which the results of these tests were reported. These citations were said to respond to the first and third types of tests called for by intervenors. (Tr. 381-382.)

Staff indicated that § 1.5.1.4 of the FSAR shows that testing of the performance characteristics of the Mark III containment has been completed and reported in a licensing topical report. (Tr. 386.) Staff also

reads from the FSAR that critical heat flux testing has been completed. (Tr. 387; FSAR § 1.5.1.5.)

(3) Conclusions

Four of the five tests which Sunflower seeks to have performed have been performed according to the sections of the FSAR from which Sunflower drew its contention. That the Board was required to read in detail the very materials on which Sunflower relies is a waste of the Board's time. Furthermore, it is the kind of error which Sunflower made elsewhere in its filings and which interferes with the confidence which the Board wishes to be able to place in the filings of each of the parties.

On the other hand, we conclude that the following issue should be admitted:

ISSUE #4: The safety of the Applicant's emergency core cooling system has not been demonstrated with appropriate experimental data because a full scale 30 degree sector steam test has not been performed.

Applicant has no good answer concerning the need for a full scale 30 degree sector steam test, and the need to perform this test prior to licensing is admitted as Issue #4. This contention meets specificity factors (1) and (2) and it has no demonstrated shortcomings.

The authority for the need for this test is Applicant's own FSAR. § 1.54.1.2 states that General Electric's program to study core spray distributions "will be confirmed by a full scale 30° sector steam test." Furthermore, that section cites an unidentified Commission authority for the proposition that the overall method, which apparently includes the promised test, is an acceptable method. (*See also* Tr. 375-376.)

In the absence of any showing to the contrary by Applicant, this particular test appears to be required by Appendix K, Part I, ¶D6, which requires that "convective heat transfer shall be calculated using coefficients based on appropriate experimental data." Hence, Sunflower's contention is not a challenge to Appendix K; and there is little reason to question the degree of specificity of this contention, which relies on a detailed portion of Applicant's own FSAR.

O. Scram Discharge Volume Contention

This contention was developed by OCRE as its 13th contention, which cited the April 7, 1981 report to the Commissioners by Carlyle Michelson, NUREG 0785, resulting from an investigation into the June 28, 1980 partial scram failure at the Brown's Ferry, Unit 3, nuclear power plant. That report pointed out that a pipe break in the scram discharge volume could lead to an unrecoverable loss of coolant accident. The admissibility of the contention

is conceded both by Applicant and Staff, and it shall be admitted as an issue, as follows:

ISSUE #5: Applicant has not demonstrated the safety of its reactor from an unrecoverable loss of coolant accident, which could occur from a pipe break in the scram discharge volume. *See* NUREG 0785.

In the course of the conference, Sunflower was unable to show how its 12th ground of intervention differed from OCRE's contention. Consequently, its 12th ground shall be considered to be included within Issue #5.

P. Scram System Contention

(1) The Contention

Sunflower alleges that Perry's GE-built scram system is ineffective and that modifications have been ordered by the NRC. It demands that licensing not be permitted until the scram system complies with NRC regulations. At the conference, Sunflower asserted that its contention rested on the loss of fluid testing program (LOFT), being conducted at Idaho Falls testing facility. (Tr. 392.) Sunflower further stated:

It is my understanding, limited as that might be, that when a scram occurs that there is a triggering of the ECCS system, that the ECCS tests, the LOFT tests ... are at least in part a computer simulated series of tests of ECCS reliability which have been taking place at Idaho Falls since approximately December of 1978; and that the contention of the intervenor is that the ... relationship between the scram and the ECCS at the Perry units is such that the core cooling system may not operate reliably.

(Tr. 394-395.)

(2) Arguments Against the Contention

Applicant argues that it cannot understand what is being alleged. It complains that intervenors have not identified aspects of current regulations that are not being met and has not specified how the scram system at Perry fails to meet those regulatory requirements. At the hearing, Applicant responded to intervenor's comments by stating that it did not understand what intervenor was saying and that a scram does not trip the emergency core cooling system (ECCS). Staff agreed with Applicant.

(3) Conclusion

This contention fails to notify Applicant of a deficiency in its scram system and, after consideration of the specificity factors, especially factor (2), the contention is not admitted as an issue.

While this contention might be interpreted to refer to scram system deficiencies uncovered at Brown's Ferry, Sunflower does not mention Brown's Ferry and does not question the adequacy of the new requirements the Commission instituted after Brown's Ferry. At the conference, Sunflower was informed that this contention might not be admitted unless it could specify a particular defect in the scram discharge system or in the ECCS. However, it could not do so. (Tr. 397.) Certainly, an intervenor wishing to introduce an issue into a hearing and thereby to parallel the review already being conducted by staff should have a greater degree of knowledge about the alleged deficiency.

Q. Airplane Crash Contention

(1) The Contention

Sunflower alleged that the FSAR's analysis of airplane crash probabilities is incorrect because of projected air traffic expansion at a local airport. At the conference, Sunflower explained that Lost Nation, a business airport, is reported in the FSAR as planning an expansion. Sunflower said that the FSAR did not use the planned expansion as a basis for calculating the probabilities of a crash. (Tr. 398-399.) Sunflower also stated that Lost Nation has 70,000 flights per year. (Tr. 404.) It alleged that the Concord airport is near the plant but that "no statements in the FSAR were made" relative to it. (Ibid.)

When asked to comment on the appropriateness of the Staff's guidelines for calculating the threshold below which risk from Lost Nation might not have to be calculated, Sunflower argued that it should be permitted to make that argument at the evidentiary hearing rather than at this early stage of the proceedings. (Tr. 409-410.) (See subsection (2), below, for a statement of that staff guideline.)

(2) Arguments Against the Contentions

Applicant contends that FSAR § 2.2.2.5 (volume 1) accurately discusses the air traffic considerations for local airports. Furthermore, it alleges that those considerations are correctly reflected in FSAR § 3.5.1.6 (volume 6), which complies with the Standard Review Plan for "Aircraft Hazards." (Tr. 400, 401-402.)

Lost Nation airport is stated to be 15 miles from Perry. According to the Standard Review Plan, risk associated with that airport would be included in overall risk assessment only if the number of movements at the airport exceed $1000 \times D^2$ (the distance in miles [15] squared). Thus, for the number of movements at Lost Nation to matter they would need to amount to 1000×225 , or 225,000 per year. (Tr. 406-408.) That would represent more than three times the current number of movements per year. (Tr. 408.) (We note

that Sunflower may have been in error in stating that there were 75,000 "flights" per year since its data were drawn from the FSAR, which states that there are 75,000 movements per year, and there apparently can be more than one movement per flight.)

In addition, Applicant argues that the probability of air crash at Perry is far less than required. The probability of crash is calculated to be 6.21×10^{-7} . (Tr. 402.) Staff explained that the standard which is applied is 10^{-6} . (Tr. 403.) This means that the risk from air crash could increase by about 50 percent and still meet Staff's standards.

(3) Conclusion

Although this contention seems specific because it is derived from the FSAR and mentions specific airports and numbers of flights, this specificity is chimerical. It fails to meet the test of the specificity factors. It is particularly deficient in complying with factor (5).

Sunflower cited the FSAR in support of the proposition that air traffic at Lost Nation would grow. However, it does not provide a basis for estimating the extent of the growth. Since Lost Nation has been conceded to be 15 miles from Perry, the amount of growth would have to be very great to have any impact on the calculation of risk, particularly since there is no allegation that there are plans for any physical expansion of the airport. There would still need to be more than three times as many "movements" before there would be any impact on the risk calculation. Even at that point, in order to affect the overall risk calculation, there would need to be enough additional flights to increase the overall risk to Perry by over 50 percent. Sunflower has not provided any basis for expecting such an increase.

In the course of the conference, Sunflower indicated that it might like to challenge the staff guidelines regarding risk. However, there was nothing in its written contention suggesting any challenge to the guidelines and there was nothing said at the conference to suggest that Sunflower has, at the present time, any basis for challenging those guidelines. Consequently, we find that even if Sunflower's factual allegations are accepted in their entirety, they have no implications for this proceeding and this contention is not admissible as an issue.

R. ATWS Contention

Sunflower's fifteenth ground of intervention was:

The applicant should be required to provide a *redundant and diverse automatic shutdown system to mitigate the consequences of anticipated transients without scram*. The FSAR indicates that applicant is not sufficiently protected against ATWS. It is now conceded that about 20

transients per year are typical of new reactors with about 6 transients per year typical after several years. Applicant's protection from ATWS is currently insufficient.

[Emphasis added.]

We have decided to admit a portion of this contention, as follows:

ISSUE #6: Applicant should install an automated standby liquid control system to mitigate the consequences of an anticipated transient without scram.

At the Conference, the Board attempted to ascertain what part of the FSAR stated that there was insufficient protection against ATWS. It also attempted to find out who concedes that 20 transients per year are typical of new reactors. However, these efforts were to no avail. (Tr. 414-416.) Instead, the Board was given additional "data" that in each of the years 1978 to 1980 there have been over 2,300 anticipated transients without scram. (Tr. 416.) In view of the potentially serious nature of an ATWS event, these data seem exaggerated. Indeed, further questioning indicated that Sunflower was making no distinction between serious ATWS events (of which there have been none) and the many small malfunctions or mistakes reported on license event reports each year. (Tr. 417-418.)

It seems to us unlikely that a group that appears to know as little about ATWS as Sunflower could knowingly raise a substantial safety matter with respect to that long-recognized problem. However, the emphasized portion of Sunflower's contention raises an important question about which Applicant currently seems undecided. On page 418 of the transcript Applicant said that Perry will have a standby liquid control system that will be automated. Later, Applicant corrected this impression and said it was not yet committed to an automated system at present but probably would be eventually. (Tr. 436-437.) We note that such a system is one form of "redundant and diverse automatic shutdown system," mentioned in the contentions. We note that the Staff has recommended an automated system as one of several requirements to aid in dealing with ATWS in GE BWRs and that the recommendation was made more than two years ago. (NUREG-0460, Vol. 4,) *Anticipated Transients Without Scram for Light Water Reactors* at p. 21).

In view of the potential importance of the ATWS problem and the apparently undecided state of the Applicant's approach to ATWS we have decided that Sunflower's contention should be interpreted to raise this narrow point. The specificity factors relied on are (2), (3) (here Applicant has supplied the factual basis) and (6). We have decided that the remainder of this contention is not admissible as an issue.

Factor (3) is most crucial to the refusal to admit portions of the contention.

S. Fast Flaming Contention

The contention that Perry's electrical wiring is susceptible to fast flaming was withdrawn voluntarily and shall not be an issue in this proceeding. (Tr. 418.)

T. Strength of Containment Contention

(1) The Contention

Sunflower alleged that, "It has not been established that the Mark III containment structure accounts for buckling." It also contends that there are dynamic and static loads which the shell must bear but which it is not designed to withstand. It states that "the final testimony on the structure has not been completed."

At the hearing, Sunflower could not specify the dynamic and static loads it was referring to. (Tr. 419-420.)

(2) Arguments Against the Contention

In its pretrial brief, Applicant objected that it did not know what dynamic and static loads intervenor was referring to and it cited § 3.8.2.4 of the FSAR as accounting for buckling. At the conference, Applicant admitted that it had not finally tested its containment because construction has not been completed.

Applicant also asserts that issues concerning testing of a plant should be admitted only if there is some basis to suspect that there is something wrong or that there is some cause for concern. (Tr. 427.)

(3) Conclusion

This contention is not admissible as an issue. Applicant is disadvantaged by the lack of specificity because it does not know what loads are being alleged so it cannot respond concerning the ability of the containment to withstand those loads. (Factor (2).) Nor has intervenor responded to Applicant's citation to its FSAR (Factor (1).)

The portion of Sunflower's contention concerning final tests of the shell requires further consideration. The problem with this contention is that it is correct in stating that a test which must be done has not been done; however, if Sunflower has its contention admitted on that ground alone, then any intervenor could have an issue admitted concerning every test which must later be performed.

We are unwilling to permit challenges concerning unperformed tests to go as far as Sunflower suggests. It cannot challenge Perry for not performing an unspecified test, whose safety importance is impossible to

judge. Although we are sympathetic to the plight of intervenors who must consider contentions now about things that are yet to happen in the future, we believe contentions as to future events need be admitted only on highly important matters. It is for that reason that we admitted the emergency planning contention, which is an allegation that an explicit regulatory requirement has not been met. But we would not extend this same leniency to every contention regarding an uncompleted test.

Under the circumstances, an evaluation of the specificity factors requires us to conclude that no sufficient basis has been established for this contention. Should intervenors provide a more specific basis for suspecting the adequacy of the containment or the appropriateness of the planned tests, then they would be permitted to attempt to show cause for the late admission of such a contention. As time passes, it will of course become increasingly more difficult to show cause.

U. Control Rod Ejection and Cooling Lake Contentions

These contentions were withdrawn and shall not be admitted as issues.

V. Blockage of ECCS Pump Suction Line Strainers

Sunflower contends that during a loss of coolant accident "thermal shielding and insulation may be ripped off or otherwise released or separated from in [sic] containment building piping where it would block off the drain of water, preventing it from being recirculated for cooling from the sump pump." However, Applicant represented that it has no sump pump which could be blocked off. Furthermore, Applicant cited FSAR § 6.2.2.2 as explaining why insulation is very unlikely to block the strainers in the ECCS suction lines. Intervenor had no response to these factual assertions. (Tr. 432-434.)

Consequently, this contention shall not be admitted as an issue. In particular, Sunflower failed to show how its contention related to a specific cited portion of the FSAR. (Factor [1].)

W. Diesel Generator Contentions

(1) The Contentions

Sunflower alleges that:

The diesel generator which powers components in the high pressure core spray system and the diesel generators which power the rest of the plant are not reliable in automatic start-up and operation because they are identical to generators that have failed. NUREG/CR-0660.

(See Tr. 443 concerning the correct identification of the cited document.) At the hearing, Sunflower asserted that at least one of Perry's diesel generators

is "operating on standby continually and that [failure to lubricate] ... the shaft bearings would cause a failure of the generator." (Tr. 438-439.)

OCRE's contention concerning diesel generators is similar, alleging an unspecified violation of 10 C.F.R. Part 50, Appendix A, criterion 17, "Electric Power Systems." However, OCRE specifically requested that there be three independent diesel generating systems with at least two different suppliers/manufacturers for the units.

(2) Arguments Against the Contentions

Applicant stated in its brief that it has three diesel generators for each plant and that they are manufactured by two different manufacturers. Applicant also cites in its brief, FSAR § 8.3 and argues that:

Nowhere do Petitioners explain how the information in [NUREG/CR-0660] ..., which predates the FSAR, negates the information submitted in the FSAR. General reference to a 250- plus page document cannot be considered a basis which is "set forth with reasonable specificity."

(3) Conclusion

Intervenors have not provided a basis for believing that the Perry system for on-site generation of power is unreliable. The citation of NUREG/CR-0660, which was prepared before the FSAR, is not helpful because intervenors have not shown any deficiency in the FSAR related to the NUREG.

Intervenors did not respond at all to Applicant's citation of a portion of the FSAR. They were ignorant of even the most elementary aspects of the system about which they are concerned. Sunflower did not know how many generators Perry has. (Tr. 435,437-440.) It could not explain what it meant in its contention by saying that Perry's diesel generators are "identical to generators that have failed." (Tr. 435.) It stated, without a reference, and it repeated in response to a question, that Perry's generators "are running on a standby basis." (Tr. 437.) And when Applicant denied that any of its generators would be kept running, it did not offer any response.

For its part, OCRE was unable to comment about whether Applicant had already implemented the safety measures it requested. (Tr. 441.) Even after OCRE's representative had consulted with Mr. Jeffrey Alexander at the suggestion of the Board (Tr. 441-442, 534), she was unable to comment on this issue. (Tr. 452-654 shows no such comment.) OCRE did assert, after consultation with Mr. Alexander, that it wanted "assurances that the generators have not been exposed to the elements outside, the rain, and have not been damaged in any way before being used." (Tr. 558.) But this was an entirely new assertion that was not related to the filed contention

and the Board's liberality in permitting clarification of contentions does not extend to entirely unrelated statements such as this.

Under these circumstances, intervenors are sorely deficient with respect to specificity factors (1), (2) and (3) and there is insufficient reason to admit the issue pursuant to factor (6).

X. Clam Biofouling Contention

(1) The Contention

OCRE alleges that Asiatic clams, *corbicula fluminea*, have displayed strong proclivities to foul steam-generating plants like Perry 1 and 2. It cites L. B. Goss, *et al.*, "Control Studies on *Corbicula* for Steam Generating Plants," First International Corbicula Symposium, Tex. Christian U. at 139 (1977). It then asserts, without further citation to authority, that, "There is at least a fifty percent chance that Lake Erie is suitable for *corbicula*."

OCRE fears that clam fouling could "cause partial blockage of intake vessels and condensers, leading to a loss of coolant accident." It asserts that chemical control may not be environmentally acceptable and that Applicant should meet the operational and financial requirements for preventing or controlling fouling.

(2) Arguments Against the Contention

Applicant asserts that the cited *Goss* study

only speaks to the presence of Asiatic clams in the Tennessee Valley region. It neither mentions Lake Erie nor predicts where they might occur. The contention alleges that "[t]here is at least a fifty percent chance that Lake Erie is suitable for *corbicula*", but provides no basis for this assertion.

In addition, at the conference, Applicant noted that OCRE had been asked what kind of research its expert had conducted as a basis for his conclusions; and OCRE chose to rely on the principles it asserts are found in *Allens Creek* rather than to respond to the question. (Tr. 547; *see also* Tr. 445-446 [request for information], Tr. 538-541 [refusal to supply requested information] and Tr. 552 [inability to supply Mr. Alexander's resume].)

Applicant also stated that in response to NRC Bulletin 81-03, its environmental consultant is looking again to reassure the company that these organisms are not found near Perry; but they never have been found in Lake Erie, where there are other power plants creating environmental conditions in which they presumably would thrive were they present. (Tr. 548, 549.) Furthermore, one can look for them; as Applicant allegedly has done and has recorded in its Environmental Report. (Tr. 548.)

There is, Applicant asserts, no possibility that clams could enter the closed cycle cooling system and cause a loss of coolant accident. Intake and discharge tunnels are stated to be 10 feet in diameter. Even were clams to enter, they could not reasonably be expected to close up so large a diameter. (Tr. 550, 558.)

(3) Conclusion

We conclude that this contention should be admitted as an issue, as follows:

ISSUE #7: Applicant has not demonstrated that Asiatic clams, *corbicula fluminea*, will not foul its safety-related cooling systems and it has not demonstrated how it could adequately cope with these clams should they be present."

The Board is displeased by the uncooperative attitude of OCRE with respect to this issue, but it has decided that it is not yet appropriate to impose sanctions, such as adverse factual findings, pursuant to its general authority. See 10 C.F.R. § 2.718. However, a future failure to supply requested information can result in a decision that OCRE is wrong on that issue and that the underlying facts are adverse to its position.

The principal issue concerning the admissibility of the contention is whether there is a basis for expecting these clams to appear in Lake Erie. None of the parties has asserted that they have been found there. However, Applicant did not persuade us that it used a biological search method that rules out the possibility that a very small number of *corbicula*, which could become a large number, are now present in Lake Erie. (See Tr. 545-550.)

The sole authority cited by OCRE for the likelihood of *corbicula* being present is the expert opinion of Mr. Jeffrey Alexander, who is principal representative of an intervenor in this case and therefore lacks credibility as an objective witness. In addition, Mr. Alexander refused to divulge the empirical basis for his conclusion or even to state the nature of the research on which the conclusion is founded. Furthermore, his status as a marine biologist and expert on clams rests on assurances given by another OCRE representative, Ms. Hiatt, who told the panel that he was unable to attend the conference because he was taking examinations for his masters' degree.

There is little doubt in our mind that we could reject this contention for its lack of basis. However, we take official notice of a letter of May 22, 1981, from Mr. Richard P. Crouse of Toledo Edison to Mr. James G. Keppler, Regional Director of Region III of the Nuclear Regulatory Commission. In that letter, Mr. Crouse responded to IE Bulletin No. 81-03, dealing with *corbicula*. Toledo Edison's response was that:

Corbicula is a fresh water clam that has recently been found in Lake Erie - the source and receiving water for Davis-Besse. Late last fall and again this spring, on May 14, 1981, field investigators from Detroit Edison discovered substantial numbers of *Corbicula* at the mouth of the overflow canal at the coal-fired Monroe Power Plant, located on the western shore of Lake Erie. The density of the clams was about 15 individuals per square foot.

Attachment at 1.

Under the circumstances, we must admit OCRE's contention. On the other hand, OCRE did not respond to Applicants' statements that clams cannot be found in the core or primary cooling system; and they are not known to have been found in such systems. Consequently, it does not seem credible to the Board that clam biofouling could cause a loss of coolant accident, in the accepted technical sense of that term. We interpret the contention to relate to the likelihood of *corbicula* fouling the auxiliary cooling systems. Since some of these systems are required for safety, the presence of *corbicula* is potentially a problem and one that Applicant will have to account for unless it can prove that these clams are not found in Lake Erie.

Y. Steam Injury Contention

(1) The Contention

OCRE cites an accident at *Sequoia* Unit 2, in which five workers were burned while testing a valve on a steam line and it asserts that Applicant must show "that technicians and maintenance workers necessary to the safe operation of the plant are not injured by escaping steam." At the conference, OCRE added that "even if [injured] technicians are not necessarily nuclear operators ..., it may lead to serious consequences within the plant." (Tr. 560.)

(2) Arguments Against the Contention

Applicant asserts that the *Sequoia* accident occurred at a Westinghouse-designed pressurized water reactor and that there is no reason to believe it could happen at a GE-designed boiling water reactor. Furthermore, the injured maintenance workers were not reactor operators and "there is no basis presented for any safety significance of the Sequoyah injuries or their applicability to Perry."

(3) Conclusion

This contention shall not be admitted as an issue. OCRE has not shown why valve maintenance would be a problem at this particular plant (specificity factor (3)) and, even if its contention is accepted as true it has

not provided a basis for concluding that an accident of this type would compromise the safe operation of the plant. (Factor (5).) Hence, OCRE has raised an issue concerning the safety of workers. This issue is relevant to the concerns of the Occupational Safety and Health Administration of the United States Government. However, OCRE has not demonstrated why this potentially important worker-safety issue also is an issue in Commission proceedings.

Z. Pressure Vessel Cracking

(1) The Contention

OCRE contends that cracks in the pressure vessel would be very difficult to detect or repair. It cites *Nature*, vol. 283 at 84 (February 28, 1980).

(2) Arguments Against the Contention

Applicant argues that the *Nature* article relates to a debate in the House of Commons concerning a series of pressurized water reactors being considered in Great Britain. Consequently, OCRE has not shown that there are special circumstances concerning cracking in the vessel of this particular reactor. Applicant and staff argue that this contention cannot be admitted under the rule in *Wisconsin Electric Power Company (Point Beach Nuclear Power Plant, Unit 2)*, ALAB-137, 6 AEC 491 (1973) and *Consolidated Edison Co. of New York (Indian Point Unit No. 2)*, CLI-72-29, 5 AEC 20 (1972). That rule assertedly requires a showing of special circumstances for the admissibility of pressure vessel cracking contentions. (See Tr. 565-566.) Applicant also said, both in its brief and at the conference, that FSAR § 5.3.1.6 contains Applicant's in-service inspection program, which it asserts is in compliance with the regulations. (Tr. 566.) Hence, the contention appears to be a challenge to Commission regulations, prohibited by 10 C.F.R. § 2.758.

(3) Conclusion

This contention is not admitted as an issue. Applicant cited a section of its FSAR and OCRE did not show why that reference was not dispositive. (Specificity factor (1).) The contention also does not specify any particular deficiency in Perry and consequently does not fulfill specificity factor (2). Furthermore, OCRE has not demonstrated the presence of "special circumstances" under the *Indian Point* rule, an adjudicatory principle binding on us in addition to the requirement that a basis for a contention be specified. If that is not already enough reason to reject this contention as an issue, we also agree with applicant that it appears to constitute a challenge to Commission regulations concerning reactor vessel integrity. We conclude only that it *appears* to constitute a challenge to the regulations because it is not sufficiently specific to be sure.

AA. Reactor Pressure Vessel Machining Defects Contention

OCRE contends that Applicant must conduct further testing of the reactor pressure vessel prior to the criticality stage because of defects which occurred during machining. It cites Interim Report 50-440-148 (November 5, 1975).

Applicant said that the cited Interim Report states:

A hole for an LPRM [local power range monitor] in-core housing (approximately 2 inch diameter) was drilled at incorrect coordinates in the bottom head of reactor pressure vessel 1 because of an error in transferring coordinates from a drawing to an operator work sheet. The CBI Nuclear Company system detected the deficiency and notified General Electric Company who in turn notified the Cleveland Electric Illuminating Company. At present, the CBI Nuclear Company proposed fix is to install a plug in the same manner as the LPRM in-core housings are installed.

Applicant then stated that it had filed a report that was acceptable to the Commission. It gave a citation for the report and for the inspection report that found it acceptable. Applicant also cites the specific FSAR sections which indicate which pressure vessel tests it will perform and argues that the further tests requested are provided for.

We find this contention to be not admissible as an issue. OCRE has not commented on how Applicant's solution to this problem is insufficient or on how its proposed tests are inadequate. (Specificity factor (1).) Furthermore, with respect to the tests Applicant is supposed to perform, there is insufficient specificity for applicant to know whether it is already planning to perform the same tests that are requested. (Specificity factor (2).) On balance, the specificity requirement is not fulfilled.

BB. Population Center Distance Contention

(1) The Contention

OCRE contends that Perry's population center distance is too short in light of the Rogovin report and the TMI experience. In particular, OCRE alleges that the hypothetical fission product release was too low.

(2) Arguments Against the Contention

Applicant's brief argues that this issue was previously litigated and was, in any event, controlled by 10 C.F.R. §§ 100.3(c), 100.11(a)(3) and 100.11(b), plus Technical Information Document 14844, which is referenced in § 100.11. It argues that the Rogovin report did not recommend any alteration of the siting criteria for reactors that are now under construction

and that the TMI radiation releases were far less than the dose assumptions contained in the regulations. Hence, use of the TMI releases would be less conservative than are existing regulations; consequently, the TMI experience does not constitute new circumstances which might permit relitigating previously determined issues. (See also Tr. 588-589.)

(3) Conclusion

This contention shall not be admitted as an issue.

Applicant analyzed this contention in its written brief and gave its reasons for believing that neither the Rogovin report nor the TMI experience provided new circumstances under which this previously litigated issue could be reopened. OCRE was unable to respond to this point. (Tr. 590.) Consequently, it has not demonstrated grounds for reopening this issue. (Factor (4).)

It is of course possible that OCRE intends to directly challenge NRC regulations. If it intends to do so, it must file a petition pursuant to 10 C.F.R. § 2.758.

CC. CANDU Reactor Contention

(1) The Contention

OCRE asks that "Applicant should be required to operate a CANDU nuclear steam system because of its lower occupational and environmental radiation doses. AECL-5523 (1975)." At the conference, OCRE contended that this facility could be substituted for the 65 percent-complete Unit 1 and would not require its abandonment.

(2) Arguments Against the Contention

Applicant says that OCRE has cited a 1975 report and has not cited any information that was not available during the construction permit stage. Consequently, 10 C.F.R. §§ 51.21, 51.23 and 51.26 prohibit consideration of this issue at the operating license stage. Furthermore, Applicant says the proposed alternative would require abandonment of its facility, an unreasonable alternative that NEPA does not require to be considered. (Tr. 593.)

Staff states that the construction permit authorized the construction of the present two unit boiling water reactor station. It argues that an important purpose of the construction stage is to consider authorizing the construction of a particular reactor. Consequently, this has been litigated and nothing new has been introduced. (Tr. 593-594.)

(3) Conclusion

This contention shall not be admitted as an issue.

At the construction stage, the principal issue for determination is the design of the facility. In reliance on that decision, Applicant is expending hundreds of millions of dollars. For that central issue to be relitigated at the operating license stage, startling new circumstances would need to be demonstrated. However, OCRE has not demonstrated anything new at all. Its information was available before the construction permit stage was completed.

Applicant also is correct in pointing out that this contention would require almost complete abandonment of its facility. OCRE has not provided any reason to doubt that abandonment of the design and construction plans, plus abandonment of completed construction, would cause Applicant to suffer substantially more than a \$500 million loss. A statement that the loss will not occur by an OCRE representative with no relevant expertise is an inadequate basis to challenge this factual assertion. (Applicant's Brief on Contentions of Ohio Citizens for Responsible Energy, p. 23.)

Since OCRE has not provided a basis for estimating the extent of the environmental benefits accruing from shifting to the CANDU alternative, it also has failed adequately to call into question the entire NEPA balance which was struck at the construction permit stage. (See section IV,C. of this memorandum for a full discussion of what is needed to call into question the entire environmental balance.) (Factors (4) and (5).)

V. DISCOVERY AND PROCEDURAL RULINGS

A. Objections to Interrogatories

Discovery on admitted issues shall commence immediately, pursuant to 10 C.F.R. §§ 2.740 to 2.744. As stated at the conference, parties are urged to include in interrogatories general statements of the purposes to be served by one or more of the interrogatories. They are also expected to conduct their discovery efficiently, pursuant to a reasonable written plan for the orderly discovery of information. (Tr. 630-631.) The written plan shall be served on the other parties by August 31, 1981.

The party that is served with an interrogatory should have notice concerning both the specific request and its general purpose. This will permit the responding party to offer to supply substitute information if the specific requested information is not available or is believed to be privileged.

In this proceeding, no objection to an interrogatory will be sustained unless the objector has made a good faith effort to communicate with the proponent of the interrogatory and to discuss the probable objections. ("Required communication.") During the required communication, the parties should discuss alternative ways to comply with the request and, if

necessary, the need for an extended time in which to reply. If a party asserts privilege for trade or commercial secrets, the parties ordinarily should negotiate a nondisclosure order so that the information may be exchanged despite the claim of privilege. Informal agreements reached in these conversations shall be binding, providing that they are not found to be contrary to the public interest and that a party files a memorandum of understanding within five days of the conversation and that memorandum is not objected to by the other allegedly agreeing party or parties.

Objections to interrogatories may be filed only if they state the date of the required communication and report with reasonable completeness the content of that communication. If the parties have failed to resolve a claim of privilege through negotiation of a non-disclosure order, the party objecting to the interrogatory must submit a reasonable proposal for such an order or reasons why such an order is not appropriate.

B. Coordination of Intervenor

The Board considers it helpful to the fairness and efficiency of these proceedings that intervenors coordinate their efforts. Effective coordination should conserve the scarce resources available to intervenors. It also should reduce needless duplication of filings and protect Applicant and Staff from the unnecessarily responding to redundant requests. In addition, the coordination process can establish an effective working relationship which can form the basis for coordinated strategy in responding to summary judgment motions and conducting the hearing. Generally, the process should assist intervenors to present their arguments effectively.

At the discovery stage, intervenors should submit their interrogatories to the lead intervenor on an issue. To the extent that there are overlapping interrogatories on the issue, the lead intervenor should communicate with the others and suggest ways of reducing unneeded redundancy. It is the responsibility of the lead intervenor to act rapidly to determine the extent of overlaps and to discuss resolution of the overlaps with the other intervenors. However, the lead intervenor is not the representative of the other intervenors and has no authority to act without their consent. Should an intervenor insist on the inclusion of a particular interrogatory, that interrogatory must be included.

Our designation of lead intervenors is not conclusive. If intervenors prefer to redesignate a lead intervenor for an issue they may do so by agreement, filed with the Board. Even if agreement is not possible, intervenors may move for a redesignation.

The designated lead intervenors shall be: Issue #1, Todd J. Kenney; Issue #2, Sunflower; Issue #3, Sunflower; Issue #4, Sunflower; Issue #5, OCRE; Issue #6, Sunflower; Issue #7, OCRE.

C. Briefs in Admissibility of ATWS Contention

In its Brief on Contentions, Applicant argues that a contention on ATWS should be excluded from this proceeding because of the effect of a proposed rulemaking on that subject. In this instance, the Board has not seen the preamble to the proposed rule so it does not know whether it is explicitly precluded from considering the issue. However, it is unusual for there to be an explicit preclusion of issues in a preamble and Applicant is understood to be contending that the issue is barred from the proceeding regardless of explicit language in the preamble. Consequently, we request briefs from the parties to help us to decide whether Applicant is correct. Briefs on this subject must be filed by August 12, 1981.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 28th day of July 1981

ORDERED

- (1) Petitions to withdraw as parties, filed by the Grand River Winery, Jenny Steindam and Harold Stendam, are granted.
- (2) The petition to intervene filed by the Toledo Coalition for Safe Energy is denied.
- (3) The petitions to intervene filed by Sunflower Alliance, Inc. (Sunflower), Northshore Alert, and the Ohio Citizens for Responsible Energy are granted.
- (4) Sunflower's motion to dismiss the proceeding for lack of jurisdiction is denied.
- (5) Sunflower's motion for a stay is denied.
- (6) The contentions filed by the intervenors are found not to be admissible unless they are included in the list of issues in paragraph (7) of this order.
- (7) The issues in this proceeding are:

Issue #1: Cleveland Electric Illuminating Company's (Applicant's) emergency plans do not provide reasonable assurance that appropriate measures can and will be taken in the event of an emergency to protect public health and safety and prevent damage to property.

Issue #2: Applicant has not demonstrated that it possesses or has reasonable assurance of obtaining the funds necessary to cover the estimated costs of operation, including the costs of

reasonably foreseeable contingencies, for Perry Nuclear Power Plant, Units 1 and 2.

Issue #3: Applicant has an inadequate quality assurance program that has caused or is continuing to cause unsafe construction.

Issue #4: The safety of Applicant's emergency core cooling system has not been demonstrated with appropriate experimental data because a full scale 30 degree sector steam test has not been performed.

Issue #5 Applicant has not demonstrated the safety of its reactor from an unrecoverable loss of coolant accident, which could occur from a pipe break in the scram discharge volume. See NUREG 0785.

Issue #6: Applicant should install an automated standby liquid control system to mitigate the consequences of an anticipated transient without scram.

Issue #7: Applicant has not demonstrated that Asiatic claims, *corbicula fluminea*, will not foul its safety-related cooling systems and it has not demonstrated how it could adequately cope with these clams should they be present.

- (8) Each admitted issue shall be interpreted in light of the discussion in this memorandum.
- (9) Each interrogatory or set of interrogatories shall be accompanied by a statement explaining its purpose.
- (10) Parties must consult informally and attempt to resolve problems concerning interrogatories before they file formal objections to those interrogatories.
- (11) By August 31, 1981, parties shall serve on one another their written discovery plans.
- (12) Intervenors whom the Board has selected as lead-intervenors for each Issue shall perform coordinating functions in an attempt to avoid unnecessary overlaps and resulting delays.
- (13) Parties may file briefs by August 12, 1981, on the effect of the proposed rulemaking on Anticipated Transients Without Scram on the admissibility of Issue #6.
- (14) Pursuant to 10 C.F.R. § 2.751a(d) objections to this Order may be filed by a party within five (5) days after service of this order, except that the regulatory staff may file objections within ten (10) days after service.

- (15) This is an interlocutory order, subject to infrequently granted discretionary interlocutory review pursuant to 10 C.F.R. § 2.718(i) and 2.785(b)(1), but not appealable except to the extent specified in paragraphs (16) and (17).
- (16) To the extent that this Order grants petitions for leave to intervene and a request for a hearing, it is appealable to the Atomic Safety and Licensing Appeal Panel within ten (10) days after service of this order, pursuant to 10 C.F.R. § 2.714a(c).
- (17) To the extent that this Order denies the petition to intervene of the Toledo Coalition for Safe Energy, it is appealable to the Atomic Safety and Licensing Appeal Panel within ten (10) days after service of this order, pursuant to 10 C.F.R. § 2.714a(b).

**ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Mr. Frederick J. Shon
ADMINISTRATIVE JUDGE**

July 28, 1981
Bethesda, Maryland

**(Append to
LBP-81-24)**

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Peter B. Bloch, Chairman
Dr. Jerry R. Kilne
Mr. Frederick J. Shon**

In the Matter of

**Docket Nos. 50-440-OL
50-441-OL**

**CLEVELAND ELECTRIC
ILLUMINATING COMPANY, *et al.*
(Perry Nuclear
Power Plant, Units 1 & 2)**

April 9, 1981

MEMORANDUM AND ORDER

**(Scheduling Prehearing Conference
Regarding Petitions for Intervention)**

Four petitions for intervention were filed in a timely fashion, in response to a notice of opportunity for hearing published in the Federal Register (46 Fed. Reg. 12372) on February 13, 1981. One petition ("Sunflower Petition") was filed by Sunflower Alliance, Inc., Northshore Alert, Evelyn Stebbins, Richard Sering, David Nash, Gail Caduff Nash, Linda Qualls, David Qualls, Citizens for Safe Energy, Jenny Steindam, Harold Steindam, Wes Gerlosky, Margaret Gerlosky, William Brotzman, Grand River Winery, Cumings Homsted Park Corp., and Toledo Coalition for Safe Energy. The other petitions were filed by the Lake County Board of Commissioners and Lake County Disaster Services Agency, Ohio Citizens for Responsible Energy (OCRE) and Tod J. Kenney.

Responses to these petitioners have been filed by the NRC Staff and Applicants.

THE APPLICABLE REGULATIONS

Under 10 C.F.R. § 2.714(a)(2), a petition for leave to intervene as a party shall set forth with particularity the interest of the petitioner in the proceeding, how that interest may be affected by the results of the proceeding, including the reasons why petitioners should be permitted to intervene with particular reference to the factors in paragraph (d) of this section, and the specific aspect or aspects of the subject matter of the proceeding as to which petitioner wishes to intervene.

Paragraph (d) of § 2.714 states:

[T]he Atomic Safety and Licensing Board designated to rule on petitions to intervene and/or requests for hearing shall, in ruling on a petition for leave to intervene, consider the following factors, among other things:

- (1) The nature of the petitioner's right under the act to be made a party to the proceeding.
- (2) The nature and extent of the petitioner's property, financial or other interest in the proceeding.
- (3) The possible effect of any order which may be entered in the proceeding on the petitioner's interest.

In addition, intervention may be limited to issues in which petitioner has an interest. 10 C.F.R. § 2.714(f). Furthermore, representatives of a municipality are specially assured of the right to participate. 10 C.F.R. § 2.715(c).

ARGUMENTS

The NRC staff has asserted with respect to several of the petitioners¹ either that no interest in the proceeding has been alleged by them or that their interest has not been sufficiently particularized. Staff also represents that petitioners generally have not shown the specific aspects of the subject matter of this proceeding as to which they wish to intervene.

However, each of the business petitioners and each of "the individual petitioners, including Tod J. Kenney and those included in the Sunflower Petition, has alleged an interest that is sufficiently particular to give them standing in this proceeding. Each of the individual and business petitioners joined in the Sunflower petition is alleged to live or be located no further

¹The Sunflower Petition was filed on behalf of several petitioners but separately states the contentions and standing of each.

than 50 miles from the Perry Nuclear Plant ("Perry"). Similarly, Tod J. Kenney states that he lives in close proximity to Perry.

In addition, as Applicant has recognized in its filings, each of the individual petitioners describes at least one "aspect of the proceeding" in which petitioners are interested.²

Applicant objects, however, to admitting Sunflower Alliance, Inc., Northshore Alert, Citizens for Safe Energy, Toledo Coalition for Safe Energy, and OCRE, as parties because these organizations have not shown a direct effect on their organization or on at least one member of each organization. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 N.R.C. 377 (1979). In that case, the Licensing Board denied intervention for lack of standing and the Appeal Board affirmed, stating (*id.* at 390):

[O]rganizations ... are not clothed with independent standing to intervene in NRC licensing proceedings. Rather, any standing which [such organizations] may possess is wholly derivative in character. It must appear [from the petition] that at least one of the persons it purports to represent does in fact have an interest which might be affected by the licensing action being sought

In this case, the petition states that members of Sunflower Alliance, Inc., Citizens for Safe Energy, and Northshore Alert are directly affected; and 10 C.F.R. § 2.714(a)(3) permits "Any person who has filed a petition for leave to intervene ... [to] amend his petition for leave to intervene." Hence, Sunflower Alliance, Inc., Citizens for Safe Energy and Northshore Alert shall have an opportunity to demonstrate the validity of their general assertions about the effect on their members; and the Toledo Coalition for Safe Energy may want to amend its petition providing that at least one of its members is directly affected. Similarly, OCRE has alleged that at least five of its members live within 30 miles of Perry and shall be permitted to amend its petition to demonstrate which members are directly affected. The amendments must permit the Board and the other parties to determine "for themselves, by independent inquiry if thought warranted, whether a basis existed for a formal challenge to the truthfulness of the assertions in the ... petition." [Emphasis in original.] *Id.* at 393.

No party has challenged the petition for leave to intervene filed by the Lake County Board of Commissioners, the principal governing Board for Lake County, Ohio, and by The Lake County Disaster Services Agency.

In general petitioners have indicated at least one aspect of the proceeding in which they are interested. However, some of the issues which have been identified may not be admissible in the proceeding, and the

²We tentatively accept Applicant's conclusions concerning the admissibility of issues, but we may of course revise our conclusion should that seem appropriate at the conclusion of the special prehearing conference.

Toledo Coalition for Safe Energy appears to be interested primarily in an issue of doubtful admissibility.

CONCLUSION CONCERNING PETITIONS

For the reasons stated above, each of the petitions for leave to intervene is granted with respect to each petitioning intervener except that Sunflower Alliance, Inc., Northshore Alert, Citizens for Safe Energy, the Toledo Coalition for Safe Energy and OCRE must amend their petitions in compliance with this order before party status may be granted to any of them.

PROCEDURAL MATTERS

A prehearing conference shall be convened in this case pursuant to 10 C.F.R. § 2.751a, which sets forth the subjects to be covered. Pursuant to 10 C.F.R. § 2.711, each petitioner may file an amended petition no later than 25 days prior to the conference so that there will be adequate time to respond and to prepare the required brief discussed below. These amended petitions shall state contentions with particularity and shall cure defects in the petitions identified in this Memorandum and Order. In particular, petitions which have failed to state standing adequately should be accompanied by one or more affidavits stating the place of residence of members on whom standing is based and stating that the organization is authorized to represent the member's interests. Also, the Toledo Coalition for Safe Energy should indicate at least one aspect of the proceeding in which it has an interest.

In addition, no later than seven days prior to the prehearing conference each party and each petitioner shall have *delivered* to each person on the service list a brief stating in reasonable detail:

- (1) reasons, supported by legal authorities, why issues included in petitions should be considered relevant to the proceedings in whole or part or should be considered irrelevant to the proceedings.
- (2) the matters the party or petitioner will seek to discover, including reasonable specificity about the plan of discovery to be followed.
- (3) the manner in which petitioners' cases should be coordinated or consolidated, in whole or in part. (*See* 10 C.F.R. §§ 2.715a and 2.716.)
- (4) suggestions for the fair and expeditious determination of the issues involved in this case.

At the conference, each party and petitioner should be prepared to respond to the issues raised in the preconference brief. In particular, each party and petitioner should comment about its position concerning discovery others have said they will undertake and concerning the time within which they can reasonably be expected to comply with discovery requests directed at them.

MOTION

On March 26, 1981, Daniel D. Wilt and Terry Lodge filed a "Motion to Extend Time for Filing Reply Brief." This motion apparently was filed on behalf of Sunflower Alliance Inc., *et al.* However, it is not necessary to act on that motion because the procedure adopted in this order should accommodate petitioners' need by providing them with an adequate opportunity to respond.

ORDER

For all the foregoing reasons and based upon consideration of the entire record in this matter, it is this 9th day of April 1981

ORDERED

- (1) Sunflower Alliance, Inc., Northshore Alert, Citizens for Safe Energy, Toledo Coalition for Safe Energy and Ohio Citizens for Responsible Energy may amend their petitions as required in this Order.
- (2) The Petitions for Leave to Intervene of Evelyn Stebbins, Richard Sering, David Nash, Gail Caduff Nash, Linda Qualls, David Qualls, Jenny Steindam, Harold Steindam, Wes Gerlosky, Margaret Gerlosky, William Brotzman, Grand River Winery, Cumings Homsted Park Corp., the Lake County Board of Commissioners, The Lake County Disaster Services Agency, and Tod J. Kenney are granted and each shall be considered a party to this proceeding.
- (3) A Special Prehearing Conference will commence at 9:30 a.m., on June 2-3, 1981, in the Public Assembly Room of the Lake County Courthouse, Lake County Administration Center, 105 Main St., Painesville, Ohio 44077.
- (4) Prior to the Special Prehearing Conference, parties shall file amended petitions and briefs pursuant to this Memorandum and

Order, and the parties shall be prepared to discuss at the conference the matters set forth in this Memorandum and Order.

**ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**Dr. Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Mr. Frederick J. Shon
ADMINISTRATIVE JUDGE**

April 9, 1981,
Bethesda, Maryland.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Forrest J. Remick
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-445
50-446

(Application for Operating License)

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

July 30, 1981

The Licensing Board issues a discovery order which *inter alia* strikes certain motions and answers by the parties relating to discovery and directs them to meet and negotiate in good faith on all of their pending disputes, report to the Board the outcome of their negotiations including a detailed description of any remaining disputes and the bases for their respective positions, on an expedited basis.

RULES OF PRACTICE: DISCOVERY

In modern administrative and legal practice, pretrial discovery is liberally granted to enable the parties to ascertain the facts in complex litigation, refine the issues, and prepare adequately for a more expeditious hearing or trial. *Pacific Gas and Electric Co.* (Stanislaus Nuclear Project, Unit 1), LBP-78-20, 7 NRC 1038, 1040 (1978).

RULES OF PRACTICE: DISCOVERY

Interrogatories must have at least general relevancy, for discovery purposes, to the matter in controversy in the proceeding.

RULES OF PRACTICE: CONTENTIONS

Contentions constitute the method by which the parties to a licensing proceeding frame issues under NRC practice, similar to the use of pleadings in their judicial counterparts.

ORDER

I.

CFUR'S first set of interrogatories to the Applicants and requests for the production of documents was filed on February 26, 1981. Applicants responded to those interrogatories on April 13, 1981. CFUR'S motion to compel responsive answers to such interrogatories was filed April 28, 1981 and the Applicants answered the motion on May 13, 1981.

The Applicants in their answers to CFUR's first set of interrogatories objected to large portions of the information requested, and failed to answer most of the questions. The disputes between the parties revolve around the interpretation of Contention 1 as asserted unilaterally by the Applicants. We hold that such interpretation is too narrow for discovery purposes, and overrule the Applicants' objections.

Contention 1 reads as follows:

Applicants have not demonstrated technical qualifications to operate CPSES in accordance with 10 C.F.R. § 50.57(a)(4) in that they have relied upon Westinghouse to prepare a portion of the Final Safety Analysis Report (FSAR).

In admitting Contention 1, the Board did not intend to limit the issue of the Applicants' technical qualifications to operate CPSES, to their reliance on Westinghouse to prepare portions of the FSAR. That was regarded as a possible example of alleged deficiencies in technical personnel available to Applicants for the operation of the plant. It was also not intended to limit such issue solely to matters involving the FSAR.

The thrust of Contention 1 is the issue of whether or not Applicants have personnel with sufficient expertise, training and experience to operate this nuclear power plant safely. If poorly stated, this contention could be refined

by amendment after the conclusion of discovery. As we stated in the *Stanislaus* antitrust proceeding, in "modern administrative and legal practice, pretrial discovery is liberally granted to enable the parties to ascertain the facts in complex litigation, refine the issues, and prepare adequately for a more expeditious hearing or trial."¹

The interpretation placed by the Applicants on admitted Contention 1 is too narrow and crabbed to permit liberal pretrial discovery. The resulting disputes over the responsiveness of the answers are so interwoven with this fundamental error of construction, that it would be a waste of time for the Board to attempt to unravel them. We decline to undertake this tedious task.

Accordingly, the Applicants are directed to reformulate their answers in order to give full, direct and responsive answers to CFUR's first set of interrogatories. All parties are also directed in the future to include both the interrogatories and the answers in any motions or replies involving the adequacy of responses or the validity of objections.

II.

CFUR filed its second set of interrogatories to the Applicants on April 9, 1981. Answers were filed April 28 by Applicants, and CFUR filed a motion to compel more responsive answers on May 12, 1981. This motion was answered by Applicants on May 27, 1981.

The disputes over the second set of CFUR interrogatories are similar to those discussed above with reference to the first set. We do not agree with the standard of relevancy set forth by CFUR in its motion, namely, whether interrogatories are "relevant to the ultimate issue in this proceeding of whether the Applicants should be issued an operating license" (Motion, p. 2). Rather, interrogatories must have at least general relevancy, for discovery purposes, to the matters in controversy in the proceeding. Matters may be put into controversy by the parties,² or under certain circumstances by the Board *sua sponte*.³ Contentions constitute the method by which the parties frame issues under NRC practice, similar to the use of pleadings in their judicial counterparts.⁴ Such contentions may be amended or refined as a result of additional information gained by discovery.

¹Pacific Gas and Electric Company (*Stanislaus Nuclear Project, Unit 1*) LBP-78-20, 7 NRC 1038, 1040 (1978), quoted in *Pennsylvania Power and Light Company (Susquehanna Steam Electric Station, Units 1 and 2)*, ALAB-613, 12 NRC 317, 322 (1980).

²10 C.F.R. §§ 2.714, 2.740 and 2.751a.

³10 C.F.R. § 2.760a. *See also* our Order entered July 24, 1981, at pp. 3-13.

⁴*Susquehanna, supra*, 12 NRC at 331, 334.

Contention 7, which is the center of the dispute over the second set of interrogatories, reads as follows:

Applicants have failed to adequately evaluate whether rock "overbreak" and subsequent fissure repair using concrete grout have impaired the ability of category I structures to withstand seismic disturbances.

Here again the Applicants seek to apply too narrow and legalistic an interpretation to Contention 7 and the interrogatories in question. The issue of alleged rock "overbreak" and the seismic capabilities of CPSES is broad enough to encompass such related matters as the nature of concrete poured for its foundations, materials incorporated into the foundation itself or placed above the bedrock, as well as the use of loose rock materials. This contention should not be construed as being limited solely to the effects of "rock overbreak" and "fissure repair", as the Applicants contend.

Accordingly, the Applicants are directed to provide full, direct and responsive answers to CFUR's second set of interrogatories.

III.

There remain a number of motions to compel by CFUR and replies by the Applicants which reflect a substantial and unnecessary amount of pointless bickering between these parties. In part this is caused by too narrow and legalistic positions taken unilaterally by the Applicants, and an insistence on unduly limiting requested discovery. However, CFUR also seeks to assert too expansive a scope of discovery by references to the "ultimate issues" of granting an operating license. Our discussion above concerning the first and second sets of interrogatories should provide guidance to those parties in resolving their discovery controversies.

The Board does not intend to take the time to go through all of the remaining motions and replies in order to referee these unnecessary quarrels. At one point, pages are spent arguing whether numerous documents are merely required to be identified, or whether a general request for inspection and copying constitutes a technical request for production, which careful practice requires to be made prior to a motion to compel. This kind of interminable fencing coupled with occasional *ad hominem* arguments constitutes an unacceptable imposition upon the Board.

Accordingly, under its power and responsibility to "manage and supervise all discovery,"⁵ the Board issues the following directives:

1. All pending motions by CFUR to compel answers to its third and fourth sets of interrogatories (with motions to find Applicants in default), and all of the Applicants' responses to such motions, are stricken. CFUR's motion for protection and oral argument (included in response to Applicants' motion to strike), and Applicants' response, are also stricken. CFUR's motion to compel Applicants to hold design audit at Comanche Peak is moot, and it is stricken.
2. The Applicants' motion for protective order, filed together with their answers to CFUR's fifth set of interrogatories on July 20, 1981, is stricken.
3. CFUR and the Applicants are directed to meet and confer as soon as possible on the status of all interrogatories, responses, motions, and other discovery now pending between them. These parties shall negotiate in good faith on all of their pending disputes, using as guidelines the discussion contained in this Order, all of our prior Orders, and the nine principles stated in our Order entered July 23, 1981, at pages 9-12.
4. A written report shall be submitted to the Board by these parties as soon as reasonably possible, setting forth the results of their discovery conference and any agreements reached by them concerning the completion of pending discovery.
5. Any remaining disputes shall be fully described by each party, and the bases for their respective positions shall be accompanied by points and authorities sufficient to enable the Board to rule on all matters in controversy. Copies of each interrogatory or response remaining in dispute shall be set forth verbatim in such statements of position.
6. This conference and written reports by CFUR and the Applicants shall be given priority and expedited treatment by the parties, in view of the accelerated schedule for the conclusion of discovery and the commencement of evidentiary hearings.

⁵Commission's Statement of Policy on Conduct of Licensing Proceedings, May 20, 1981, pp. 5-6.

It is so ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 30th day of July, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Elizabeth S. Bowers, Chairman
Dr. Peter A. Morris
Dr. Jerry R. Kline

In the Matter of

Docket No. 50-255-CO

CONSUMERS POWER COMPANY
(Pallsades Nuclear Power Facility)

July 31, 1981

The Licensing Board denies a petition by labor unions for a hearing on an order of the Director of Inspection and Enforcement imposing *inter alia* certain restrictions on overtime work by licensed operators.

RULES OF PRACTICE: STANDING TO INTERVENE

In enforcement cases, as in licensing cases, the Commission applies judicial concepts of standing in determining rights to a hearing under section 189a of the Atomic Energy Act. To have standing one must first allege some injury that has occurred or will probably result from the action involved. In addition, one must allege an interest arguably within the zone of interests protected by the Act. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), CLI-80-10, 11 NRC 438 (1980); *Wisconsin Electric Power Co.*, (Point Beach, Unit 1), CLI-80-38, 12 NRC 547 (1980); *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 613 (1976).

RULES OF PRACTICE: STANDING TO INTERVENE

Economic interest, including a labor union's economic interest in maintaining contractually protected employment rights, is not an interest which is within the "zone of interests" protected by the Atomic Energy Act;

such interest cannot serve as a basis to request a hearing as a matter of right. The Board also denied standing as a matter of discretion.

MEMORANDUM AND ORDER

(Ruling on Petition to Intervene)

The Atomic Safety and Licensing Board denies the petition of Utility Workers Union of America, AFL-CIO and its Michigan State Utility Workers Council for Hearing on Order Confirming License Actions to Upgrade Facility Performance.

I. BACKGROUND

On March 31, 1981, the Utility Workers Union of America, AFL-CIO and its Michigan State Utility Workers Council (hereinafter "the Union") requested a hearing, pursuant to 10 C.F.R. § 2.714(a)(2) and the March 9, 1981 confirmatory order of the Director of the Office of Inspection and Enforcement. The Order of March 9, 1981 Confirming License Actions to Upgrade Facility Performance, to which the Licensee consented, provides, in part, certain restrictions on overtime for licensed operators. 46 Fed. Reg. 17688 (Mar. 19, 1981). On April 20, 1981, the NRC staff filed its "Response to Utility Workers Union of America's Request for a Hearing" (hereinafter, "Answer"), which concluded that the Union's petition should be denied.

On May 28, 1981, the Union filed a "Reply Brief in Support of Request for Hearing ..." (hereinafter, the "Reply").

On May 29, 1981, the Commission referred the Union's request for a hearing to an Atomic Safety and Licensing Board (hereinafter, the "Board") and directed the Board to decide whether the Union's request for a hearing should be granted.

On June 3, 1981, this Board was established to rule on the request for hearing and to preside over the proceeding in the event that a hearing is ordered.

On June 17, 1981, the Staff filed its "Response to Utility Workers Union of America's 'Reply Brief in Support of Request for Hearing ...'" (hereinafter, the "Response").

In brief, the Union's position, as stated in its petition and Reply, is that it is entitled to a hearing on the Order of the Director of the Office of Inspection and Enforcement, as provided for by Commission rules, and has a right to be heard under constitutional rights to due process. The Staff, in its answer to the petition and its Response to the Reply, disagrees. It concludes that the Union has not established a legal right to a hearing and that the holding of a discretionary hearing would be wasteful of the

Commission's resources and would concern primarily matters beyond the Commission's purview. We proceed to examine the issues in detail.

II. PETITIONER'S STANDING

On March 9, 1981 confirmatory order of the Director of the Office of Inspection and Enforcement states that:

- (1) "Any person who has an interest affected by this Order may request a hearing on this Order within 25 days of its issuance."
- (2) "If a hearing is requested by a person other than the licensee, that person shall describe in accordance with 10 C.F.R. § 2.714(a)(2) the nature of the person's interest and the manner in which that interest is affected by this Order." 46 Fed. Reg. 17688 (Mar. 19, 1981).

The Union's request was dated March 31, 1981, and was, therefore, timely filed.

The Union's request for a hearing states its "reasons and grounds" in its Petition and elaborates in its Reply, in which the Union also asserts that overtime restrictions were proposed and promulgated by the Licensee and the NRC without notice to or consultation with the licensed operators represented by the Union, in total disregard and in violation of their fundamental due process rights.

The Commission rule governing intervention requires that "The petition shall set forth with particularity the interest of the petitioner in this proceeding, how that interest may be affected by the results of this proceeding, including the reasons why petitioner should be permitted to intervene, with particular reference to the factors in paragraph (d) of this section, and the specific aspect or aspects of the subject matter of the proceeding as to which petitioner wishes to intervene." 10 C.F.R. § 2.714(a)(2). Paragraph (d) states that "The Commission, the presiding officer or the Atomic Safety and Licensing Board designated to rule on petitions to intervene and/or requests for hearing shall, in ruling on a petition to intervene, consider the following factors, among other things:

- (1) The nature of the petitioner's right under the Act to be made a party to the proceeding.
- (2) The nature and extent of the petitioner's property, financial, or other interests in the proceeding.
- (3) The possible effect of any order which may be entered into the proceeding on the petitioner's interest.

The Staff's Response to the Reply (which incorporates the views held in its answer to the petition) correctly points out (p.5) that in enforcement cases, as in licensing cases, this Commission applies judicial concepts of standing in determining rights to a hearing under section 189a of the Atomic Energy Act. To have "standing" one must first allege some injury that has occurred or will probably result from the action involved. One must, *in addition*, allege an interest arguably within the zone of interests protected by the Act. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 & 2), CLI-80-10, 11 NRC 438 (1980); *Wisconsin Electric Power Co.* (Point Beach, Unit 1), CLI-80-38, 12 NRC 547 (1980); *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 & 2, CLI-76-27, 4 NRC 610, 613 (1976).

The Union argues in its Reply that it meets these requirements. There appears to be little dispute between the Staff and the Union that these are the appropriate measures to apply in determining whether the Union has a right to a hearing in this proceeding.

A. Economic Interest

The Reply states that the Palisades facility licensed operators represented by the Union indisputably possess a real and substantial interest in the maintenance of contractually protected employment rights. To the extent this interest is economic, it is a specific, particularized and contractually-mandated interest clearly possessed by the licensed workers. It is plainly not an economic interest of the generalized or diffuse sort claimed by power company ratepayers which has frequently been held to be not cognizable before this Commission. The Union's direct and substantial employment-related interests stand to be affected by the Commission's action and clearly support its right to be heard as an interested party. (Reply, p.6).

The Staff argues that "The maintenance of 'contractually protected employment rights' is an economic interest and therefore not within the 'zone of interests' protected by the Atomic Energy Act". (Response, p.7). The Staff observes that the Union's argument is apparently that economic interests, to the extent that they are specific and not generalized, can serve as a basis for standing. This argument is refuted by the Staff in adducing the following: (Response, p. 8 ff).

1. NRC cases that hold economic interests to be outside the “zone-of-interests” protected by the Atomic Energy Act have not made such holdings contingent upon the specific or generalized nature of the economic interest asserted.¹²

¹² It is not altogether clear why the economic interests alleged by the Union are any more “specific” than those alleged by ratepayers. In any event, even assuming *arguendo* that the Union’s interests are more “specific”, there is no basis to say that economic interests that are specific in nature can serve as a basis for standing in NRC proceedings.

2. The Atomic Safety and Licensing Appeal Board, in denying intervention status to a petitioner who alleged potential harm to real estate investments, has stated flatly: “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 ...” (citation omitted).
3. Discussion and citation of several other cases that have held economic interests to be outside the “zone of interests” protected by the Atomic Energy Act that have done so in circumstances outside the ratepayer context.

We agree with the Staff in concluding that, whether particularized or generalized, economic interest, and specifically the Union’s admittedly economic interest in maintaining contractually protected employment rights is an interest that is not within the “zone of interests” protected by the Atomic Energy Act and therefore can not serve as a basis to request a hearing as a matter of right.

B. Maintenance of Safe Conditions

The Reply states (p.6) that it surely cannot be disputed that workers in nuclear facilities possess a unique interest in having a voice in decisions designed to address the maintenance of safe conditions within the nuclear facility at which they are employed. It then quotes from 10 C.F.R. Part 19, Notices, Instructions and Reports to Workers; Inspections,¹ and asserts that it would appear obvious that *whenever* (original emphasis) action is contemplated to change working conditions of operators of regulated facilities, ostensibly in the interest of improving safety, that those licensed

¹Which relates to: Posting of notices to workers, Instructions to workers, Notification and reports to individuals, Presence of representatives of licensees and workers during inspections, Consultation with workers during inspections and Requests by workers for inspections.

workers who participate in the regulated activity on a daily basis should be consulted as a matter of course.

It is not obvious at all to this Board that the conclusion that "those licensed workers who participate in the regulated activity on a daily basis should be consulted as a matter of course" flows from the requirements and opportunities of 10 C.F.R. Part 19, regardless of whether Licensee management considers such consultation necessary or desirable. Further, we hold that it is management's responsibility and prerogative to decide those work practices that it deems proper to achieve both safe and productive work practices of its own organization. While meaningful input may indeed flow from consultation with licensed workers, this does not imply that such consultation need take place "as a matter of course".

The Reply continues by stating that there can be no more valuable resource in the development of the safe operations of a radiological facility than the licensed workers who have training and experience with regard to their employment responsibilities, and are intimately acquainted with the effects of working conditions, *i.e.*, overtime standards, on their own ability to perform in a safe manner. We are not convinced that where substantial overtime benefits become a motivating factor for employment and may affect the morale of the workers, that they can be completely objective in assessing the balance between acceptably safe performance and substantial overtime hours.

The Licensee proposed and the NRC has ordered a limit on overtime hours as a way to upgrade performance at the Palisades facility. Major changes in the Licensee's management controls, including the avoidance of extended overtime, were found necessary, by the Director, to assure that the Licensee could operate the Palisades facility without undue risk to the health and safety of the public.

In any event, the Director's Order in no way inhibits consultation by the Licensee with licensed operators nor the licensed operators from having a voice in decisions designed to address the maintenance of safe conditions within the nuclear facility at which they are employed. In particular, whether the Director's Order, insofar as it relates to restriction of overtime hours, is upheld or not, the protections afforded by 10 C.F.R. Part 19, will remain available to the Palisades workers.

Because the Union's interest in having licensed operators have a voice in safety-related decisions affecting the Palisades workers has not been "injured-in-fact", by the Director's Order, that interest cannot serve as a basis for standing to request a hearing on the Director's Order.

C. Effect on Employee Morale

The Reply states (p. 8) that the Commission, further, should not overlook the potentially dangerous effect on employee morale and performance that may be the result of ignoring or failing to adequately consider the safety-related suggestions and perceptions of highly trained and experienced nuclear facility personnel. Taken in context with the next sentence, the Union appears to imply that the "unilateral decision to restrict operator overtime in the Palisades facility" might have such a dangerous effect on employee morale and performance.

To the extent that the licensed operators earn less money in the future, as a result of the Director's Order, this might indeed affect morale. To the extent that the safety-related performance of the Palisades licensed operators would be degraded, if no hearing were held on the Director's Order, this would be totally inconsistent with their unique interest in the maintenance of safe conditions within the nuclear facility at which they are employed.

As before, the economic interest is not within the "zone-of-interests" protected by the Atomic Energy Act. The Union has not, in fact, alleged that the restriction on overtime hours has made the facility less safe.

The effect on employee morale cannot serve as a basis to request a hearing as a matter of right.

D. Employment Opportunities

The Reply states (p.8) that the unilateral decision to restrict operator overtime in the Palisades facility may also have an adverse impact on the employment opportunities of the affected workers, further supports the Union's claim of interest in being heard in this matter. It is not clear what the Union has in mind here, since it is not alleged that there would be any decrease in the number of jobs nor the opportunities for advancement. We see no basis for concluding that restriction on overtime hours would have an adverse impact on employment opportunities of the affected workers. Even if it did, we would not find this matter to be within the "zone of interests" protected by the Atomic Energy Act.

E. Physical Proximity

The Reply states that the physical proximity of workers in nuclear facilities to radioactive operations, standing alone, sufficiently establishes the requirements for Union standing (citations omitted).

The Staff position (Response, p.14) is that the "physical proximity of workers in nuclear facilities to radioactive operations" is not a sufficient basis to establish standing in NRC proceedings in the absence of any allegation that safety-related or environmental concerns will be adversely

affected by the proceeding. Conceding that those who live within close proximity to a nuclear facility are presumed to have a cognizable interest, the Staff asserts that it is important to recognize that the "close proximity" test only raises a presumption of standing. What is really "presumed" by the "close proximity" test is that the potential litigant will in fact be able to show an injury to an interest protected by the Atomic Energy Act. If he or she cannot, then the presumption fails.

The Staff position is amply supported by at least two cases (which the Staff avers the Union has misread). In denying a petition to intervene in an NRC licensing proceeding by an association of lawyers, the Atomic Safety and Licensing Appeal Board stated:

"The alleged fact that there are Guild members who live in the general vicinity of the Allens Creek site does not alter matters. To be sure, persons who live in close proximity to a reactor site are presumed to have a cognizable interest in licensing proceedings involving that reactor. *Virginia Electric & Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54, 56 (January 26, 1979). But there is no like presumption that every individual so situated will deem himself potentially aggrieved by the outcome of the proceeding (an essential ingredient of standing). Some may and some may not. Because of this consideration, the petitioner organization in *North Anna* did not and could not content itself with the simple assertion that it had members living in the shadow of the facility there in question. To establish its representational standing, it additionally supplied the statement of one of those members, which explicitly identified the nature of the invasion of her personal interest which might flow from the proposed licensing action." (footnote omitted)

Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-535, 9 NRC 377, 393 (1979). In similar vein, the Atomic Safety and Licensing Board has stated:

"In proceedings involving license applications, the Appeal Board has ruled that a petitioner who resides or is employed in geographic proximity to a reactor site, *and who has expressed concerns over reactor safety or environmental impact*, can be fairly presumed to have an interest which might be affected by construction or operation of a reactor." (emphasis added)

Dairyland Power Cooperative (LaCrosse Boiling Water Reactor), LBP-80-26, 12 NRC 367, 373 (1980).

Thus, the Union cannot assert standing in this case by virtue of the "close proximity" test unless it can also show that it has an interest protected by the Atomic Energy Act (a "cognizable interest") that has been adversely affected by the Director's Order in a way that is environmentally or safety-related. The Union has not demonstrated such an interest. It is again important to emphasize that the Union has not alleged that the Palisades facility is less safe as a result of the Director's Order. Instead, the interests the Union describes are either outside the "zone of interests" protected by the Atomic Energy Act or have not been adversely affected by the Director's Order. As a result, the "close proximity" of the workers represented by the Union to the Palisades facility is not itself a basis upon which to presume standing to request a hearing.

In summary, the interests asserted by the Union are either outside the Atomic Energy Act's "zone of interests" or have not been "injured in fact." The Union does not have a right to a hearing as a matter of law to challenge the Director's Order restricting overtime hours at the Palisades facility.

III. DUE PROCESS RIGHTS

The Reply states that the Union's procedural due process rights have been violated. The Staff Response (p.22) concludes that since no property right of the Union has been affected, the Due Process Clause of the Constitution does not require a hearing in this case.

The Union states (Reply, p.4) that there is no more fundamental legal proposition than the proposition that "parties whose rights are to be affected are entitled to be heard." *Fuentes v. Shevin*, 407 U.S. 67, 80 (1972).

The Staff, however, notes (Response, p.21) that the key question is whether any constitutionally guaranteed rights of the Union have been affected by the Director's Order.

The Reply states (p.4) that the Union indisputably possesses a direct and tangible interest in maintaining valuable employment rights and benefits arising out of its contractual relationship with the Licensee. These interests are economic and non-economic, and include the right to future overtime compensation and the right to maintain safe working conditions. Further the Reply states (p.5) that while the due process clause does not *create* (original emphasis) rights in the Union, it does mandate that existing *property rights* (emphasis supplied) be protected from governmental interference without an opportunity to be heard.

It appears to us that the Union acknowledges that to be entitled to a hearing its property rights must be affected. (Reply, pp.4-5). While the Staff Response (p.18) says that the Union characterizes its interest as a "property right", it does not, in fact, explicitly do so. In any event, to examine whether

the Union is entitled to a hearing under the due process clause the Response (p.18 ff) proceeds as follows:

The Fifth Amendment of the Constitution states that "No person shall ... be deprived of life, liberty, or property without due process of law." This clause has long been interpreted to mean that an individual must be afforded an opportunity to be heard by the Government when the Government takes action that affects a life, liberty, or property interest. *See, e.g., Grannis v. Ordean*, 234 U.S. 385, 394 (1918); *McVeith v. United States*, 78 U.S. 259, 267 (1870). The crucial task, however, is to determine those interests that are defined as life, liberty, or property interests such that they are deserving of due process protection. In the context of defining property interests that merit due process protection, courts have looked to the Constitution itself,²⁵ English common law principles,²⁶ and, more recently, the notion of "legal entitlements"²⁷ as sources of property interests. "Legal entitlements" are created either by federal or state statute,²⁸ or by "mutually explicit understandings"²⁹ between the government and the individual claiming the entitlement. Absent some effect on a property interest as defined by these various sources, the Due Process Clause does not serve as a basis upon which to establish hearing rights.

Denying a hearing to the Union does not in any way conflict with any of these tenets of due process described above. Indeed, section 189a. of the Atomic Energy Act and the hearing rights it affords to individuals who have been adversely affected by Commission action are the very embodiment of due process. Thus, to the extent that a hearing is not required by section 189a. of the Atomic Energy Act,³⁰ the Union has been afforded all the process that it is constitutionally due.

In addition, the Union's interest in "maintaining valuable employment rights" does not rise to the level of a property interest protected by the Constitution. Presumably this interest is manifested in the "right" to work overtime. The "right to work overtime" is of course not guaranteed by any specific constitutional provision or by principles of English common law. Furthermore, the Union has no legal entitlement to overtime hours. No federal or state statute affords the workers

²⁵See Tribe, *American Constitutional Law*, p. 507 (1978).

²⁶*Id.*

²⁷*Board of Regents v. Roth*, 408 U.S. 564, 577 (1972).

²⁸*Id.*

²⁹*Perry v. Sinderman*, 408 U.S. 593, 601 (1972).

³⁰See text at Part II, *supra*.

represented by the Union with a guarantee of overtime hours. Moreover, any expectation the workers have to overtime hours has certainly not been fostered by any "mutually explicit understanding" between the NRC and the Union. Indeed, the understanding that exists between the NRC and the workers represented by the Union is best described as one in which the workers will not be able to undertake any activities, including overtime work, to the extent that such activities adversely impact on safety.

As a final note, the cases relied upon by the Union do not support its argument that the Due Process Clause of the Constitution entitles the Union to a hearing in this case. The Staff recognizes of course that the NRC "enjoys no special position or privilege that can justify an abridgement of constitutional rights to due process. *Union of Concerned Scientists v. Atomic Energy Commission*, 499 F.2d 1069 (1974)." [sic]³¹ Furthermore, *Fuentes v. Shevin*, 407 U.S. 67, 80 (1972) does, as the Union indicates, state that "parties whose rights are to be affected are entitled to be heard."³² The key question, however, is whether any constitutionally guaranteed rights of the Union have been affected by the Director's Order. These two cases clearly do not state that a Union has any constitutionally protected right to work overtime.

³¹Union's Reply Brief at 4.

³²*Id.*

Moreover, *Board of Regents v. Roth*, 408 U.S. 564 (1972) and *Klein v. Califano*, 586 F.2d 250 (3d Cir. 1978) are more supportive of the Staff's view than of the Union's. The *Roth* case is most instructive. In seeking to define "property interests", the Supreme Court stated in *Roth*:

"Certain attributes of 'property' interests protected by procedural due process emerge from these decisions. To have a property interest in a benefit, a person clearly must have more than a unilateral expectation of it. He must, instead, have a legitimate claim of entitlement to it. It is a purpose of the ancient institution of property to protect those claims upon which people rely in their daily lives, reliance that must not be arbitrarily undermined. It is a purpose of the constitutional right to a hearing to provide an opportunity for a person to vindicate those claims."

"Property interests, of course, are not created by the Constitution. Rather, they are created and their dimensions are defined by existing rules or understandings that stem from an independent source such as

state law - rules or understandings that secure certain benefits and that support claims of entitlement to those benefits.”

Board of Regents v. Roth, 408 U.S. 564, 577 (1972). The *Klein* Court made clear that “the underlying property interest must derive its source from state or federal statute or rule ...” *Klein v. Califano*, 586 F.2d 250, 257 (3d Cir. 1978). Thus, because the Union’s asserted interest in protecting overtime hours is not derived from a statutory source, or from any understanding between the NRC and the Union, the Union has not established any “property right” to overtime hours that has been impacted by the Director’s Order. Since no property right of the Union’s has been affected, the Due Process Clause does not require a hearing in this case.

We conclude, based on the above, that the Union’s procedural due process rights have *not* been violated. The Union is not entitled to a hearing on the grounds of the Due Process Clause.

IV. COMMISSION DISCRETION

The Union claims (Reply, p.9) that it is entitled to be heard as a matter of discretion. 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. *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2) CLI-80-10, 11 NRC 438, 442 (1980). The Staff concludes that the Union should not be granted a hearing as a matter of discretion.

The Staff first argues (Response, p. 22) that the Commission’s Order of May 29, 1981 (referring the Union request for a hearing to an Atomic Safety and Licensing Board) does not ask the Board to decide whether a discretionary hearing should be held. Although the Commission undoubtedly could have ordered a discretionary hearing in this case, it did not choose to do so. Furthermore, there is no indication in its order of May 29, 1981 that the Commission intended to confer upon this Board the rarely used authority to grant a discretionary hearing.

The Commission’s Order of May 29, 1981, referring the Union’s request for a hearing to the Atomic Safety and Licensing Board stated that the Board was:

“to decide whether the Union should be granted a hearing. If the Licensing Board determines that a hearing is required, it should conduct a hearing.”

The phrase “should be granted” is most appropriately read in context with the word “required” in the following sentence of the Commission’s Order. That is, the Commission has asked the Board to decide whether a hearing

should be granted by directing it to determine whether a hearing is required in this case. Indeed, by using the word "required," the Commission's Order makes clear that the Board is not to consider the issue of a discretionary hearing.

As support for this reading of the Commission's Order, the use of discretionary hearings in past Commission practice should be considered. The use of discretionary hearings is rare in general, and unheard of in the context of an NRC enforcement action. The Commission has emphasized that, to the extent possible, NRC enforcement resources are better utilized when not directed to the conduct of hearings. The Commission has stated 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."

Public Service Company of Indiana, supra. In addition to this concern for Inspection and Enforcement resources, it also should be remembered that the Commission is concerned with applying all agency resources in the area where they are most needed, which currently is in the conduct of licensing and not enforcement proceedings. Given these concerns, it is inconceivable to suggest that the Commission, without any clear directive so stating, wanted the Board to consider whether a discretionary hearing should be held in this Licensee-consented enforcement action.

Were this argument not dispositive of the question of granting a discretionary hearing, and we believe it is, some factors bearing on the exercise of discretion are provided in *Portland General Electric Company, et al.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616 (1976). These are listed and discussed as follows:

A. Weighing in favor of allowing intervention

1. The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.

The Union (Reply, pp. 9-11) states that the Commission should, as a matter of discretion, permit the Union to be heard as a participant possessing unique knowledge and experience which would provide a valuable contribution to the decision-making process. Further, it states that the Union, as representative of licensed facility operators plainly has a significant and singular ability to contribute in a substantial manner as to

the effects of overtime and other working conditions on safety in plant operation. It alleges Commission recognition of the unique position of nuclear facility workers to provide vital information in the context of enforcement of plant regulations, by reference to 10 C.F.R., Part 19. Finally, the Union asserts that by their failure to solicit and consider the observations of the Palisades plant workers, the Licensee and the Commission have ignored the Union's established employment interests and have overlooked what is undoubtedly their most valuable source of knowledge in their efforts to improve the safety record of the Palisades facility.

To judge the potential for the Union to assist in developing a sound record, it is appropriate to review the record leading to the Director's Order.

The Staff has stated that the Commission's Order of March 9, 1981, cited the numerous safety problems at Palisades. The Staff states that the Union has not alleged that Palisades has been made any less safe as a result of the restricting of overtime hours. Thus, any "contribution" the Union would make to the record would be to non-safety related issues. To the extent that the Union's "rights" are not related to safety, it is true — and irrelevant — that such rights would not be represented by the NRC because such considerations would be outside the NRC's mandate for protecting the health and safety of the public.

The Board has determined that the Union cannot assist in developing a record beyond the one that already exists.

2. The nature and extent of the petitioner's property, financial or other interest in the proceeding.

Conceding that the Union's interest is economic, as discussed supra, this interest is not arguably within the "zone of interests" protected by the Atomic Energy Act.

3. The possible effect of any order which may be entered in the proceeding on the petitioner's interest.

Reconsideration of the confirmatory order of the Director of the Office of Inspection and Enforcement conceivably could satisfy the Union's concern. To the extent, however, that the concern relates to lack of consultation with the Union by Consumers Power in committing to actions to assure safe operations of the Palisades facility, the NRC should not provide a tribunal to resolve what are essentially labor disputes between a Licensee and its employees.

To the extent that the restrictions on overtime for licensed operators would be sought to be changed, *i.e.*, made less restrictive, it is not persuasive, nor relevant, to argue, as the Union does, that they should not

be imposed because they are more restrictive than this Commission's standards otherwise applicable, as set forth in the interim criteria for shift staffing, issued July, 1980, by the Commission, by Darrell G. Eisenhut, Director, Division of Licensing. Notwithstanding these (Eisenhut) criteria, which would have applied to the Palisades facility absent the Order, the enforcement history, which revealed to the NRC Staff a number of significant items of noncompliance that resulted from inadequate management control of licensed activities or from personnel error, demonstrated that major improvements in the Licensee's program were necessary to assure that the Licensee can operate the Palisades facility without undue risk to public health and safety. The restrictions on overtime work committed to by Consumers Power were accepted by the Director, because they appeared to be a reasonable approach to begin to remedy the Licensee's inadequate performance at Palisades. The Staff's Answer (pp. 9-10) states that sound enforcement policy dictates that the Office of Inspection and Enforcement be able to confirm by order, in the interest of the potentially favorable effect on public health and safety, a Licensee's efforts to gain better control of its operations through its proposed restrictions on its license. Further, the viability of such consent orders is undermined if discretionary hearings are held to hear issues that reach beyond the Commission's interest in public health and safety.

It is apparent from a close reading of the Director's Order that restrictions in addition to those defined in the Eisenhut letter would have been imposed on the Palisades licensed operators even if they had not been proposed by the Licensee. We find that the Director's confirmation Order was entirely appropriate and consistent with the Commission's practice.

B. Weighing against allowing intervention

4. The availability of other means whereby petitioner's interest will be protected.

The Staff's answer (p.9) assumes that there are tribunals, including state and federal labor relations agencies, to hear the Union's grievances against Consumers Power Company. We don't believe this to be an unwarranted assumption and also agree that this agency simply is not one of those tribunals.

5. The extent to which the petitioner's interest will be represented by existing parties.

This factor is not relevant to this proceeding, since the particular interest of the intervenor is not within the "zone of interests" protected by the Atomic Energy Act.

6. The extent to which petitioner's participation will inappropriately broaden or delay the proceeding.

There have been no other petitions for a hearing on the Director's confirmatory order. To grant petitioner's request, based on his reasons and grounds, would inappropriately broaden the proceeding; in fact, lead to a hearing that otherwise probably would not be held.

V. BASIS FOR OVERTIME RESTRICTIONS

The Union claims (Reply, p.11) that the overtime restrictions were apparently imposed without adequate consideration, reason or basis. It further characterizes the Order as a gratuitous action. While acknowledging the history of operations at the facility over the past five years reflects many instances of noncompliance with regulatory requirements and that some instances of regulation violation have involved personnel error, the Union claims it is unaware of any basis for finding that operator overtime practices contributed in any way to any violation or for justifying the Order's substantial reduction in permissible overtime.

The Staff Response (p.27) states that the restrictions on overtime hours was imposed to ensure that the safety of near-term operations at the Palisades facility would not be adversely impacted by the special long-term changes required at Palisades (as necessitated by the incidents described). Further, the Staff feared that the Licensee might increase overtime hours worked by the Palisades operators in order to fully implement the long-term changes and to offset any hours that might be lost through operator attrition. As a result, in order to ensure that the overall safety of the facility would be protected, the Director ordered that the restriction on operator overtime hours be imposed. Contrary, then, to the Union's position, the Director's Order rested on sound footing in that it was based upon the unique safety-related circumstances in existence at the Palisades facility.

Although both the Staff and the Union supply the overtime hour restrictions that are contained in the Order and in the Eisenhut letter (Attachment "A" of the Union's Reply), neither provides a comparison of what those restrictions actually permit. Neither does the Union quantify the overtime hours that would "be substantially limited to a level well below that otherwise permitted by the Commission's general standards" (*i.e.*, those restrictions contained in the Eisenhut letter). The results of such calculations would have no bearing on our conclusion here. We note, however,

that under the Order overtime hours are explicitly limited to 64 in any 28-day period. Under the Eisenhut restriction, a worker who worked eight normal hours a day each of the first five days of a seven day week, four hours of overtime each of the first five days, 12 hours of overtime on the sixth day and no hours on the seventh day, could accumulate 128 hours of overtime in a 28-day period. The difference in maximum permissible overtime hours could, therefore, be 64 hours in a 28-day period.

VI. CONCLUSION

The Union has not established a legal right to a hearing on the confirmatory order of the Director of the Office of Inspection and Enforcement. A discretionary hearing, based on the reasons and grounds of the Union's petition, and as discussed in its Reply Brief, would concern matters not arguably within the "zone of interests" protected by the Atomic Energy Act. For the reasons discussed in this Memorandum and Order, the Union's petition for a hearing is *DENIED*.

IT IS SO ORDERED.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**Peter A. Morris
ADMINISTRATIVE JUDGE**

**Jerry R. Kline
ADMINISTRATIVE JUDGE**

**Elizabeth S. Bowers, Chairman
ADMINISTRATIVE JUDGE**

Bethesda, Maryland
July 31, 1981

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**Docket Nos. 50-424
50-425**

**GEORGIA POWER COMPANY
(Alvin W. Vogtle
Nuclear Plant, Units 1 & 2)**

July 2, 1981

The Director of Nuclear Reactor Regulation denies a petition filed under 10 C.F.R. 2.206 of the Commission's regulations to require the reopening of the record upon which construction permits were issued in order to assess the need for the power to be produced by the facilities.

NEPA: NEED FOR POWER

An applicant may demonstrate that there is a need for the power to be produced by a particular facility by showing (1) that the demand for electricity within the facility's service area is increasing; (2) that the facility may be needed as a substitute for power currently produced by burning short-supply fossil fuels; (3) that the facility may be needed to meet the reserve margin requirements of power pools in which the facility is a participant; or (4) that the applicant is capable of selling power outside its immediate service area to meet the demand for power in other areas.

NRC: RESPONSIBILITIES UNDER NEPA

Every forecast of need or demand for power 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

NEPA does not require that decisions based on environmental impact statements be reconsidered whenever information developed subsequent to

the action becomes available, unless that new information would clearly mandate a change in result.

DIRECTOR'S DECISION UNDER 10 C.F.R. 2.206

By letter dated September 25, 1980, to the Director of the Office of Nuclear Reactor Regulation, Mr. Gary Flack, on behalf of Georgians Against Nuclear Energy (GANE), requested that the Nuclear Regulatory Commission (NRC) reconsider its decision to issue construction permits to the Georgia Power Company (GPC) for the construction of the two Vogtle nuclear facilities. The basis for this request is an electricity demand forecast submitted by GPC to the Georgia Public Service Commission. According to GANE, this forecast indicates that upon completion of the two Vogtle facilities,¹ GPC will have excess reserve generating capacity ranging from 40 to 46% from 1988 to 1990. GANE asserts that this information regarding excess capacity constitutes new information not previously considered by the NRC when issuing the construction permits of the two Vogtle facilities, and, as a result, GANE asks that the decision to issue the construction permits be reconsidered.² GANE's letter is being treated as a petition for action pursuant to 10 C.F.R. 2.206 of the Commission's regulations.

I have reviewed the factors asserted by GANE as the basis for its request. For the reasons set forth below, I have concluded that GANE's request to reconsider the issuance of the construction permits for the two Vogtle facilities should be denied.

¹Vogtle Units 1 and 2 are currently scheduled to start commercial operation in 1985 and 1988 respectively.

²GANE has also asked that hearings be instituted to assess the need for power from the two Vogtle facilities and the need for a supplemental Environmental Impact Statement to account for the new information. A hearing on GANE's request is, of course, not required by law. *Illinois v. NRC*, 591 F.2d 12, 14 (7th Cir. 1979). The Commission is not required to institute proceedings to determine whether the facts underlying a 2.206 petitioner's claim have merit. However, the Commission may "properly undertake preliminary inquiries in order to determine whether the claim is substantial enough...to warrant full proceedings." *Porter County Chapter of the Izaak Walton League v. NRC*, 606 F.2d 1363, 1369 (D.C. Cir. 1979). On the basis of that inquiry, the Commission "has substantial discretion to decline to initiate proceedings..." *Id.* Because the NRC Staff believes that the information provided by GANE would not require the reopening of the record to reconsider the decisions to issue construction permits to the two Vogtle facilities, the Staff does not believe that the consideration of a supplemental Environmental Impact Statement in the absence of any major federal action nor the institution of hearings to consider the need for power would serve any useful purpose in this instance.

I.

In initially considering whether construction permits should be issued to GPC for the two Vogtle facilities, the Atomic Safety and Licensing Board found 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).

Since that time, GANE has attempted on three prior occasions to reopen the administrative record compiled in the above-described proceedings.³ Each of these attempts has sought to reopen the record based, at least in part, on purported changes to the need for power to be produced by the two facilities. On each of these three previous occasions, the NRC Staff reviewed the purported changes in the need for power from the two facilities and concluded that the changes were not so significant so as to require a reconsideration of the decision to issue the construction permits for the two facilities.

The September 25, 1980 petition represents the fourth attempt by GANE to reopen the record on the Vogtle construction permits. The Staff has again analyzed GANE's request.

II.

A. Need For Power

Before taking major federal action that significantly affects the environment, the Commission is required to weigh the benefits of the proposed action against the environmental costs associated with taking that action. In the context of issuing construction permits for nuclear power facilities, the benefit of the proposed action is the need for power to be produced by the facility. In a decision in the Seabrook case, *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-422, 6 NRC 33, 90 (July 26, 1977), the Atomic Safety and Licensing 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

³*Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582 (1979); *Georgia Power Company*, (Alvin W. Vogtle Nuclear Plant, Unit Nos. 1 and 2), DD-79-18, 10 NRC 617 (1979); *Georgia Power Company*, (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-80-13, 11 NRC 503 (1980).

considering the licensing of a nuclear power plantA 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 Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 405 (October 29, 1976) (footnote omitted).

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. See *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Unit 1 and 2), DD-80-13, 11 NRC 503, 505 (1980).

In considering whether a particular applicant demonstrates that the power the facility will produce is in fact needed, the Commission may look at forecasts for the demand for electricity by consumers within the facility's service area. See, e.g. *Kansas Gas and Electric Company* (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 327 (1978). In addition, the power produced by a facility may be needed as a substitute for the power currently produced by the burning of short-supply fossil fuels. *Id.*; see also *Niagara Mohawk Power Corporation* (Nine Mile Point Nuclear Power Station, Unit 2), ALAB-264, 1 NRC 347, 353 (1975); *New England Coalition on Nuclear Pollution v. United States Nuclear Regulatory Commission*, 582 F.2d 87, 97-98 (1st Cir. 1978). Also, the power produced by the facility may be needed to meet the reserve margin requirements of power pools in which the facility is a participant. *Dairyland Power Cooperative* (La Crosse Boiling Water Reactor), LBP-80-2, 11 NRC 44, 78 (1980). Finally, in determining whether the power from a particular facility is needed, the Commission may consider the applicant's ability to sell power outside its immediate service area to meet the demand for power in other areas.⁴

⁴While this matter has not been addressed in any decision to date, there would appear to be nothing in the Commission's regulations or decisional authority or in NEPA itself that would prevent the Commission from considering the need for power outside a particular facility's service area. Indeed, the Commission has recognized this position in its alternative siting cases.

The Commission, in order to minimize environmental effects, can reject the proposed siting of a particular facility on grounds that an "obviously superior" site exists elsewhere. *Public Service Company of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-77-8, 5 NRC 503, 526 (1977). Moreover, nothing prevents the Atomic Safety and Licensing Board from considering, if it so chooses, alternative sites well outside the facility's immediate service area. *Id.* at 539-540. In *Seabrook*, the Commission remanded the case to the Atomic Safety and Licensing Board and gave the Board the discretion to determine whether sites in southern New England should be considered as alternatives to the proposed New Hampshire site. *Id.* On remand, though the Board rejected these sites on the ground that the Seabrook site was a superior one, the Board did in fact consider these other sites which were located throughout Connecticut, Massachusetts, Vermont, and Rhode Island. *Public Service Company of New Hampshire* (Seabrook Station, Units 1 & 2), LBP-77-43, 6 NRC 134, 137-139 (1977). The Seabrook case thus illustrates the fact that at least some of the benefits of a particular facility need not be

The Commission has recognized, however, that uncertainty is inherent in any prediction of the need for the electricity to be generated by a nuclear plant.

"[E]very prediction has an associated uncertainty and...long range forecasts of this type 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, commercials, and industrial sectors, etc." *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Units 1 - 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 & Electric Co.* (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 328 (1978) (citations omitted).

The Atomic Safety and Licensing Board considered the need for power issue during the course of the construction permit proceedings for the two Vogtle facilities. It concluded that in fact there was a need for the power to be produced by the Vogtle facilities. *Georgian Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1-4), LBP-74-39, 7 AEC 895 (1974), LBP-77-2, 5 NRC 261 (1977); *affirmed*, ALAB-375, 5 NRC 423 (1977). GANE now

located in the same service area where the risks of the facility are located.

In providing for the possibility of siting a facility outside the service area where the bulk of the facility's power will be consumed, the Commission has *a fortiori* recognized that the benefits arising from a particular nuclear facility (*i.e.*, the power it produces) can flow to a service area outside the immediate geographic location of the facility where the risks of the facility are located. Certainly, then, the required NEPA justification for a particular facility may be demonstrated not only by the need for power within the facility's immediate service area, but also by the need for power which the facility can satisfy by selling electricity to other areas where the power is also needed, even though such areas are outside the facility's normal service area.

This is consistent with Staff practice of analyzing need for power at the construction permit stage by calculating an applicant's capacity for producing electricity after accounting for any firm commitments the applicant has to sell power, including any plans to sell power outside the facility's normal service area.

seeks to reopen those proceedings and have this determination regarding the need for power for Vogtle Units 1 and 2 reconsidered. In order to decide whether GANE's request should be granted, an analysis of the Commission's standards for reopening a record is necessary.

B. Reopening an Administrative Record

GANE's request to reopen the record is based on recent forecasts for demand for electricity submitted by GPC to the Georgia Public Service Commission. GANE alleges that these forecasts indicate greater excess capacity in the years after the Vogtle facilities are scheduled to become operational than was originally anticipated in the initial construction permit proceedings. As such, GANE contends that the forecasts constitute significant new information that requires the reopening of the construction permit proceedings.

The Supreme Court has long demonstrated a predisposition against reopening an administrative record. It has stated:

One of the grounds of resistance to administrative process has been the claims of private litigants to be entitled to rehearings to bring the record 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 the 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.

ICC v. Jersey City, 322 U.S. 503, 514 (1944). This passage has most recently been cited with approval by the Supreme Court in *Vermont Yankee Nuclear Power Corporation v. NRDC*, 435 U.S. 519, 554 (1978). These underlying principles have been applied in decisions of this agency. The Appeal Board has stated:

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.

Duke Power Company (Catawba Nuclear Station, Units 1 & 2), ALAB-359, 4 NRC 619, 620 (1976). Indeed, the Appeal Board, in denying a motion to reopen an administrative record on the issue of need for power, has noted that "[l]itigation has to end sometime". *Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Units 1 & 2), ALAB-443, 6 NRC 741, 750 (1977).

As was noted in a decision on a request by GANE for action under 10 C.F.R. 2.206, "NEPA does not require that decisions based on environmental impact statements be reconsidered whenever information developed subsequent to the action becomes available." *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582, 584 (1979). Rather, "it is unnecessary for an agency to reopen the NEPA record unless the new information would clearly mandate a change in result." *Id.* at 584-85, *see also Greene County Planning Board v. FPC*, 559 F.2d 1227 (2nd Cir. 1976), *cert. denied*, 434 U.S. 1086 (1978). This standard applies not only in the appeal of a licensing decision, but also in requests for action under 10 C.F.R. 2.206. *Georgia Power Company* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), DD-79-4, 9 NRC 582, 585-86 (1979). Moreover, the Commission has emphasized that the procedure afforded by 10 C.F.R. 2.206 should not be used as a vehicle for reconsideration of issues previously decided in Commission proceedings. *Consolidated Edison Company of New York* (Indian Point, Unit Nos. 1, 2, 3), CLI-75-8, 2 NRC 173, 176 (1975); *see also Northern Indiana Public Service Company*, (Bailly Generating Station, Nuclear 1), CLI-78-7, 7 NRC 429, 434 (1978).

Specifically in the context of reopening the record to reconsider the need for power issue, the Commission has stated:

The general rule applicable to cases involving differences or changes in demand forecasts was stated in *Niagara Mohawk Power Corporation* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 352-69 (1975). In that case the Appeal Board found the question was "not whether Niagara Mohawk will need additional generating capacity but *when*." *Id.* at 357. The intervenors in that case urged that the power would not be needed until 1981, the applicant urged 1979 as the date. The Board responded (*Id.* at 365):

[W]e do not consider the difference in predicted year of need — 1979 vs. 1981 — a statistically meaningful distinction. If there was one thing agreed upon in the proceeding below, it is that inherent in any forecast of future electric power demands is a substantial

margin of uncertainty. As with most methods of predicting the future, load forecasting involves at least as much art as science. The margin of error implicit in such predictions is at least of sufficient magnitude to encompass the two year difference between the applicant's and the intervenors' forecasts.

This rule has been consistently followed.

Carolina Power and Light Company (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-79-5, 9 NRC 607, 609 (1979) (citations omitted). Thus, given the margin of uncertainty inherent in any demand forecast, changes in a demand forecast are not likely to "clearly mandate a change in result" in the initial construction permit proceedings, and therefore are not likely to compel the reopening of those proceedings.

III.

The information submitted by GANE and by Georgia Power Company³ does not indicate that there is no longer any need for the power to be produced by the Vogtle facilities. The information does indicate, however, that demand for electricity within GPC's immediate service area will not grow rapidly as was originally anticipated in the initial construction permit proceedings for the Vogtle facilities. Nevertheless, there is no dispute over the fact that demand for power in GPC's service area is indeed growing and will continue to do so in the foreseeable future. In addition, as indicated in Section II of this decision, need for power is not simply equivalent to demand for power within a service area. Using power as a substitute for short supply fossil fuels or as a means for an applicant to meet its power pool obligations also serve as adequate bases to demonstrate a need for the power to be produced by a particular facility. In addition, an applicant may show that the power a facility produces is needed by demonstrating an ability to sell excess capacity it may have to areas where power is also in demand, even though such areas are outside the applicant's immediate service area.

As more fully explained in the attached Appendix B, GPC is able to demonstrate a need for power from the Vogtle facilities. Demand for electricity within GPC's service area is increasing. Also, the power produced by the two Vogtle facilities will be used in part as a substitute for

³In order to more fully evaluate GANE's request, the Staff asked Georgia Power Company to submit answers to a number of questions propounded by the Staff that were relevant to the need for power issue. A copy of these questions and the answers submitted by Georgia Power Company are contained in Appendix A.

power currently produced by coal units owned by GPC. In addition, GPC is a member of a pool of utilities (the Southern Company) in which power obligations are shared. Finally, GPC has received from other utilities several letters of intent to buy power from GPC if in fact GPC has excess capacity when the Vogtle units become operational.⁶ Upon analyzing these various factors, the Staff has determined that the power produced by Vogtle Unit 1 will be needed by 1988 and that of Vogtle Unit 2 by 1990.

Vogtle Units 1 and 2 are currently scheduled to become operational in 1985 and 1988 respectively. The latest demand forecasts would indicate a delay in the need for power from the two facilities of three years and two years respectively. Given the uncertainty inherent in forecasting need for power, I conclude that this delay is within the ambit of the "margin of error implicit in such predictions". *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant, Units 1 - 4), CLI-79-5, 9 NRC 609, 610, (1979). In addition, construction of both Vogtle facilities has begun and much of the environmental costs associated with the construction of these two facilities has already occurred.⁷ Therefore, I cannot conclude that there would clearly be a change in result in the original construction permit proceeding and the NEPA balance struck there. As a result, GANE's request to reopen the construction permit proceedings for the Vogtle facilities is denied.⁸

For the above reasons, GANE's request to reopen the construction permit proceedings for the two Vogtle facilities to reconsider whether there is a need for the power produced by these facilities 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 Alvin W. Vogtle Nuclear Plant, Unit Nos. 1 and 2, located at Burke County Library, 4th Street, Waynesboro, Georgia. A copy of this decision will also be filed with the Secretary of the

⁶While power initially may be sold outside the GPC service area, over the life of the Vogtle facilities most of the power produced by the two facilities is intended to be used to meet the demand for electricity within the GPC service area. It is anticipated that some of the power sold by GPC outside its service area will be used by the other utilities as a substitute for power currently produced by their fossil-fuel facilities. The utilities to which sales are planned are, like GPC, all members of the Southeastern Electric Reliability Council.

⁷Indeed, GPC estimates that as of November, 1980, it has expended 820 million dollars for the two Vogtle facilities.

⁸The judgment of local regulatory bodies charged with the duty of insuring that the utilities within their jurisdiction fulfill their legal obligations to meet customer demands is relevant to NRC's determination on need for power. *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 US 519, 550 (1978); *Rochester Gas & Electric Corp.* (Sterling Power Project Nuclear Unit No. 1), ALAB-502, 8 NRC 383, 388 (1978). It is noteworthy that the Georgia Public Service Commission has not made any decision that would indicate that there is no longer a need for the power to be produced by the Vogtle facilities.

Commission for its review in accordance with 10 C.F.R. 2.206(c) of the Commission's regulations.

As provided in 10 C.F.R. 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 20 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland
this 2nd day of July, 1981.

[Appendices A and B 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

In the Matter of

Docket No. 50-344
(10 C.F.R. 2.206)PORTLAND GENERAL
ELECTRIC COMPANY, *et al.*
(Trojan Nuclear Plant)

July 13, 1981

The Director of Nuclear Reactor Regulation denies a petition under 10 C.F.R. 2.206 which requested suspension of operation of the Trojan Plant on the basis of matters related to fire protection and environmental qualification of electric equipment.

DIRECTOR'S DECISION UNDER 10 C.F.R. 2.206

By petition dated May 17, 1979, Nina Bell, *pro se*, and Eugene Rosolie, on behalf of the Coalition for Safe Power (the Coalition), requested that the Nuclear Regulatory Commission take immediate corrective action including shutdown of the facility to relieve serious safety problems at the Trojan Nuclear Plant. This petition was filed pursuant to 10 C.F.R. 2.206 of the Commission's regulations.

The asserted bases for the request by the petitioners were that deficiencies existed with respect to fire protection and environmental qualification of electrical equipment. The issues raised by the petitioners were generic in nature and directly related to those raised by the Union of Concerned Scientists (UCS) in its petitions filed before the Commission in November 1977 and May 1978. Since the Commission was already considering these matters as part of its evaluation and preparation of a response to the UCS petitions, final consideration of the Coalition's petition was held in abeyance pending the Commission's decision in the UCS proceeding.* In the interim, on September 10, 1979, I determined that no

*This is in accordance with the Secretary of the Commission's July 31, 1979 memorandum to the Director which stated: "The Commission requests that you determine if this petition contains any information indicating that immediate action is needed at the Trojan plant, as distinguished from generic actions which may result from the Commission's final determination in the UCS proceeding. The petitioner should be informed of the results of this inquiry. If it is found that no immediate action is warranted, petitioner should be informed that further

adequate basic existed for taking immediate action to shutdown the Trojan Nuclear Plant and the petitioners' request for immediate action was denied. On May 23, 1980, the Commission issued its decision in the UCS proceeding (Memorandum and Order dated May 23, 1980, CLI-80-21). A copy is attached. Consequently, in accordance with the Commission's findings, I am now undertaking final consideration of the petition of Nina Bell and the Coalition.

I.

With respect to the issue of environmental qualification of electrical equipment, in accordance with the Commission's decision in CLI-80-21, the NRC staff issued a Safety Evaluation Report (SER) on this subject for the Trojan Nuclear Plant on May 27, 1981. A copy of the SER is attached and hereby incorporated by reference. The SER sets forth the status of environmental qualification of electrical equipment for Trojan, and notes that corrective action is required for many items. The licensee, Portland General Electric Company (PGE), is expected to respond to the discrepant items identified in the SER within 90 days. In addition, also pursuant to the Commission's CLI-80-21 Order, the licensee has been ordered to have all safety-related electrical equipment in the facility environmentally qualified in accordance with the provision of Division of Operating Reactors "Guidelines for Evaluating Environmental Qualification of Class 1E Electrical Equipment in Operating Reactors" (DOR Guidelines), or NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment", December 1979.

The NRC staff's SER of May 27, 1981, while finding deficiencies with the existing environmental qualification for some equipment, nevertheless concluded that there is reasonable assurance of continued safe operation of this facility pending completion of necessary corrective actions (SER at pp. 9-10).

II.

With respect to fire protection issues, the Commission's Order of May 23, 1980 led to the issuance of new fire protection requirements now codified in 10 C.F.R. 50.48 and a new Appendix R to 10 C.F.R. Part 50 (45 FR 76602, November 19, 1980). This rule became effective on February 17,

consideration of its petition will be held in abeyance pending the Commission's decision in the UCS proceeding."

1981. Except for an exemption request for two items (discussed below), there are no outstanding or unresolved fire protection issues at Trojan. All fire protection upgrading has been completed with the exception of the oil collection system for the reactor coolant pumps. The licensee has indicated this item, if not totally completed during the current refueling outage, will be completed within the time required by the rule.

The licensee has requested an exemption from items III.G.2 and III.J of 10 C.F.R. 50, Appendix R, for the Trojan Nuclear Plant. These items concern (1) means of ensuring that one of the redundant trains of systems necessary to achieve and maintain hot shutdown conditions located in the same fire area remains free from fire damage, and (2) emergency lighting provisions in areas needed for operation of safe shutdown equipment.

With respect to item (1) above, the licensee has stated that, although all of the requirements of Appendix R are not literally met in five specified fire areas, the actions it has taken as described in prior submittals for these specific fire areas will ensure that one of the redundant trains required for safe shutdown will be free from fire damage in the event of a fire. The licensee therefore asserts that the intent of Appendix R has been satisfied, and that additional modifications would not significantly improve fire protection safety.

As for item (2) above, the licensee has identified seven areas requiring manual safe shutdown operations which have emergency lighting powered by either of two emergency diesel generators instead of by an 8-hour battery supply as required by Appendix R. PGE asserts that the intent of Appendix R is satisfied, and that replacement of these lights with battery-powered lights would not enhance fire protection safety at Trojan Nuclear Plant.

Both of these exemption requests are currently under review. Based on the protections in place at the Trojan facility, I have concluded that there is reasonable assurance of continued safe operation of the Trojan facility pending resolution of the exemption requests. Both of these items will be resolved in a reasonable period of time.

On the basis of the foregoing, I have determined that no adequate basis exists for ordering the shutdown of the Trojan Nuclear Plant. Consequently, the petitioners' request is denied.

A copy of this determination will be placed in the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555 and the local public document room for the Trojan Nuclear Plant located at the Multnomah County Library, Social Science and Science Department, 801 S.W. 10th Avenue, Portland, Oregon 97205. A copy of this document will also be filed with the Secretary of the Commission for review in accordance with 10 C.F.R. § 2.206(c) of the Commission's regulations.

In accordance with 10 C.F.R. § 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission twenty-five 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 July, 1981.

Attachments:

1. Memorandum and Order of the Commission, CLI-80-21, May 23, 1980.
2. Safety Evaluation Report, May 27, 1981.

[Attachments 1 and 2 have been omitted from this publication. Attachment 1 can be found in NRCI, 11 NRC 707. Attachments 1 and 2 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
(10 C.F.R. 2.206)**

**PUBLIC SERVICE COMPANY
OF NEW HAMPSHIRE, *et al.*
(Seabrook Station, Units 1 & 2)**

July 15, 1981

The Director of Nuclear Reactor Regulation denies a petition under 10 C.F.R. 2.206 that requested institution of proceedings to suspend or revoke the Seabrook construction permits on the basis of evacuation considerations at the site.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDING

Matters bearing on acceptability of emergency plans for the facility did not indicate extraordinary circumstances such that the institution of proceedings was warranted to take up these matters before the operating license review.

DIRECTOR'S DECISION UNDER 10 C.F.R. 2.206

On February 11, 1980, the Director of Nuclear Reactor Regulation denied under 10 C.F.R. 2.206 a petition filed by Mr. Robert A. Backus on behalf of the Seacoast Anti-Pollution League (SAPL). DD-80-6, 11 NRC 371 (1980). SAPL's petition requested that the Director issue an order suspending or revoking Construction Permit Nos. CPPR-135 and CPPR-136 which authorize construction of the Public Service Company of New Hampshire's Seabrook Station. While the Director's decision was pending before the Commission, Mr. Backus filed a letter on June 30, 1980, before the Commission in support of SAPL's petition. Although the Commission

declined to review the Director's decision, the Commission referred SAPL's June 30th letter to the Director for consideration as a separate petition under 10 C.F.R. 2.206. SAPL has also submitted a videotape and photographs for consideration in connection with its June 30th letter.

SAPL's June 30th petition essentially reiterates its earlier request for suspension or revocation of the Seabrook permits. In support of this request, SAPL raises the following contentions in its June 30th petition as a basis for taking action to suspend or revoke the Seabrook permits.

1. The NRC Staff considers the Seabrook to be one of 12 "problem" fixed nuclear sites in the country.
2. Notification of 100% of the population within a five mile area within 15 minutes is impossible.
3. Evacuation within the time frame indicated in NUREG-0396, Table 2 is impossible.
4. In the absence of a finding that evacuation is feasible, construction should not be permitted to continue at the site as the Commission's June 9, 1980, interim policy on *Nuclear Power Plant Accident Considerations Under the National Environmental Policy Act of 1969*, 45 FR 40101 (June 13, 1980) recognizes construction may foreclose options that may be important for protecting the public safety and health.

On March 13, 1981, the Commonwealth of Massachusetts filed a memorandum in support of SAPL's request. The Commonwealth of Massachusetts' memorandum also argued that there were significant deficiencies in the permittee's evacuation time estimates which, in the Commonwealth's view, result in short evacuation time estimates.

STAFF RESPONSE TO CONTENTION 1

SAPL's first major contention is:

"[I]t has now become known that the NRC's staff considers the Seabrook site to be one of 12 'problem' fixed nuclear sites in the country. A letter from Mr. John W. Macy, Jr., Director of the Federal Emergency Management Agency to Governor Hugh Gallen of April 22, 1980, lists the Seabrook site, along with Indian Point, Zion, and nine others as one which has the highest population density within the 10 mile emergency planning zone or mutually agreed upon by FEMA and NRC."

Under the Memorandum of Understanding of January 11, 1980, between the NRC and the Federal Emergency Management Agency

(FEMA), FEMA, in support of the NRC licensing reviews, agreed to "provide NRC with an independent assessment of evacuation times around 12 reactor sites which have the highest population density within the 10-mile Emergency Planning Zone or are mutually agreed upon by FEMA and NRC." 45 FR 5847-49 (January 24, 1980). This independent assessment is used by the NRC as part of the review of the licensees' evacuation time estimates. The fact that an independent assessment was requested by the NRC based on population density, while indicating the staff's concern with the site, does not itself indicate that the Seabrook site or any of the other selected sites presents a special problem that prevents effective evacuation. That a site is selected for examination does not mandate suspension of construction pending completion of analyses or the ultimate application of such analyses in the operating license review. *See Porter County Chapter of the Izaak Walton League, Inc. v. NRC*, 606 F.2d 1363, 1367-70 (D.C. Cir. 1979).

STAFF RESPONSE TO CONTENTION 2

SAPL'S second major contention is:

"State Civil Defense officials have now publically [sic] conceded that the task of notifying 100% of the population within a five mile area within 15 minutes of notification to State or local officials is impossible. Yet, the 15 minute notification requirement is found in NUREG-0654, 'Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness Support of Nuclear Power Plants', Appendix 3."

The Commission has promulgated revised requirements for emergency preparedness at power reactor sites. *See Emergency Planning*, Statement of Consideration and Final Rule, 45 FR 55409 *et seq.* (Aug. 19, 1980) (amendments to 10 C.F.R. Parts 50 & 70). The Commission's new requirements set forth conditions which must be met with respect to emergency preparedness before receiving a construction permit or operating license. *See* 10 C.F.R. 50.34(a) & (b), 50.47, & Part 50, Appendix E. The Commission has provided guidance on meeting the standards for acceptable emergency response plans in *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*, NUREG-0654/FEMA-REP-1 (Jan. 1980 & Rev. 1, Nov. 1980).

The revised emergency preparedness regulations in 10 C.F.R. Part 50, Appendix E, § IV.D., state, "The design objective [of the alerting system]

shall be to have the capability to essentially complete the initial notification of the public within the plume exposure pathway EPZ within about 15 minutes." The design objective is intended to provide essentially complete coverage by the notification system of the population within about 10 miles of the site. Contrary to the implication of SAPL's contention, the design objective is not intended to constitute a guarantee that early notification can be provided for everyone with 100% assurance or that the system when tested under actual field conditions will meet the design objective in all cases. See NUREG-0654, Appendix 3, at 3-1 (Rev. 1). The NRC recognizes that it will be impossible to assure that everyone within the plume exposure Emergency Planning Zone (EPZ) will actually be notified within 15 minutes. The requirement is to create a notification system that is capable of reaching essentially 100% of the population, not a system that guarantees actual notification.

Appendix 3 to NUREG-0654 (Rev. 1) provides guidance on acceptable means to meet the design objective. There is clearly no technical barrier to the accomplishment of this objective, e.g., by a system of sirens. Such systems are now being installed around other nuclear power plant sites. As indicated in NUREG-0654, Appendix 3, at 3-3 (Rev. 1),

"Every year, or in conjunction with an exercise of the facility, FEMA, in cooperation with the utility operator, and/or the State and local governments will take a statistical sample of the residents of all areas within about ten miles to assess the public's ability to hear the alerting signal and their awareness of the meaning of the prompt notification message as well as the availability of information on what to do in an emergency."

This review will assure that deficiencies in the notification system will be identified and that an effective system will be maintained during the plant's lifetime.

STAFF RESPONSE TO CONTENTION 3

SAPL's third basis for considering suspension or revocation of the construction permits is:

"[M]any local officials have now in sworn statements indicated their belief that evacuation within the time frame indicated in NUREG-0396, Table 2, is impossible."

The times specified in NUREG-0396, Table 2, provide ranges of time within which some offsite hazard may occur for purposes of developing emergency plans. These times are not intended to be a standard for

determining or implementing a particular response, such as evacuation, to an accident. An emergency plan must describe a means for assessing the magnitude and impact of releases and for determining the need for and extent of protective measures. *See* 10 C.F.R. Part 50, Appendix E, § IV.B. As described in NUREG-0654 (Rev. 1), Criterion J.7,

“Each licensee shall establish a mechanism for recommending protective action to the appropriate State and local authorities. These shall include Emergency Action Levels corresponding to projected doses to the population-at-risk, in accordance with Appendix 1 and with the recommendations set forth in Table 2.1 and 2.2 of the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents”.

Appendix 1 of NUREG-0654 specifies that a range of protective actions, including sheltering and evacuation, may be appropriate. *See also* 10 C.F.R. 50.47(b)(10). The intent of these requirements is for the licensee and State and local officials to predetermine decision-making criteria for protective action that take into consideration plant conditions, evacuation times, shelter factors and other factors that, under the conditions at the time of the accident, will minimize the impact of the accident. This does not imply that in the case of the most serious low probability events that all serious health effects will be absolutely prevented. Indeed, for the very lowest likelihood events, some serious health effects could be expected at most operating reactor sites even with emergency preparedness programs which fully meet the regulations. The primary purpose of requiring evacuation time estimates is to provide decisionmakers during an accident with knowledge of the available options for taking protective measures.

STAFF RESPONSE TO CONTENTION 4

SAPL's fourth contention is:

“In the absence of a finding of feasibility [of evacuation] construction should not be permitted to continue at the site, for as the Commission's June 9th [1980] Interim Policy Statement [on severe accident considerations] recognizes, this construction is intending to foreclose options that may be important for protecting the public health and safety.”

In support of SAPL's questioning of the feasibility of evacuation, the Commonwealth of Massachusetts' states that “it seems likely that the licensee's current evacuation time estimates are too low.” Memorandum at 12. In support of this statement, the Commonwealth presents the following

matters as significant deficiencies in the evacuation time estimates, particularly with regard to peak season conditions:

- (1) The estimates failed to include time for decision, notification, preparation and confirmation;
- (2) The estimates "failed to provide estimates based on simultaneous evacuation during the peak summer season of all beach areas lying from NE to SSE of the site or even simultaneous evacuation of Hampton Beach and either of the other two beach areas, Seabrook Beach and Salisbury State Beach". Memorandum at 10-11.

The evacuation time for the "summer Sunday" case is determined almost totally by the rate at which the beaches can be evacuated. There will be very little preparation time required by the beach population before evacuation. Before the plant is licensed to operate a prompt public alerting system to essentially complete the initial notification of the beach population within 15 minutes must be installed.

The staff's preliminary review of the Seabrook applicant's evacuation time estimates, submitted in response to the staff's request of December 1979, confirmed that simultaneous evacuation of the beaches within 2 and 5 miles of the site was not addressed. The Seabrook applicant has been requested to revise its evacuation time estimates for the 2 and 5 mile radius to address this issue. The Commonwealth of Massachusetts also questions other aspects of the estimates, including off-season evacuation conditions. Memorandum at 11-12. The matters raised with respect to off-season evacuation are not considered significant, since off-season evacuation considerations for the Seabrook site are similar to those at other sites and do not, therefore, present unique problems at Seabrook. Moreover, the evacuation time estimates for the peak summer conditions envelop the off-season considerations with respect to the general population and associated evacuation times. As indicated above, the applicant has been asked to refine its recent estimates and may be asked to provide further estimates during the staff's operating license review to assure that all appropriate factors are considered in the estimates of evacuation time.

However, evacuation estimates for the 2 and 5 mile radius summer populations have been developed as part of FEMA's independent assessment of the Seabrook evacuation times. *See Dynamic Evacuation Analyses: Independent Assessment of Evacuation Times from the Plume Exposure Pathway Emergency Planning Zones of Twelve Nuclear Power Stations*, FEMA-REP-3 (Feb. 1981). The evacuation times estimates provided by the independent FEMA study are based on current planning activation. Implementation of evacuation traffic management plans, which are currently under development, will probably result in reduced evacuation times. Table 1 provides a comparison of the FEMA peak summer

evacuation time estimates, winter weekday normal weather time estimates, and the median and maximum of the estimates provided by the 52 operating nuclear power sites in response to a November 29, 1979 NRC request. As can be seen from Table 1, even the peak summer population evacuation time estimates for Seabrook are within the range of the normal condition evacuation time estimates for the 52 sites analyzed and, therefore, do not warrant, merely on the basis of evacuation time estimates, special consideration now of either additional features or other actions which would prevent or mitigate the consequences of serious accidents.

The evacuation times estimated for the Seabrook site, which are based only on currently available communications, notification systems and traffic management capabilities, while longer than the median evacuation time for currently operating plants, are within the range of current evacuation time estimates for operating nuclear power plants. Current information does not indicate that it is infeasible to develop an emergency plan, including an evacuation plan, for the area surrounding the Seabrook site. The emergency plan may well further shorten the estimated evacuation times because of the requirement for a prompt public notification capability and the development of refined traffic management plans for emergency planning purposes. On the basis of available information, we conclude that plans can be developed for the Seabrook site that will assure that adequate protective measures can and will be taken in the event of a radiological emergency. Continued construction does not prejudice the ability to develop or implement effective emergency plans.

To put this decision in perspective, it must be emphasized that this decision does not presume to decide the adequacy of emergency preparedness for the Seabrook Station. That issue must be resolved, of course, in the context of the staff's review of the recently tendered application for operating licenses. A notice of opportunity for hearing will be published when the application is docketed. All that is at issue here is whether I should take the extraordinary step of suspending construction of the Seabrook Station pending resolution of a matter that will be addressed in the operating license review. Neither the new emergency planning regulations nor the Commission's policy on severe accident considerations direct the institution of a permit suspension proceeding under these circumstances. As indicated in this discussion, the current evacuation time estimates for Seabrook are not so extraordinary that institution of proceedings apart from the operating license proceeding is warranted.

Continued construction of a facility does not in itself pose any danger to public health and safety even though there may be issues which remain for resolution in the operating license review. *Porter County Chapter of the Izaak Walton League, Inc., supra*, 606 F.2d at 1369. The adequacy of

emergency planning, including plans for evacuation, is a consideration that is relevant to the assessment of whether a plant should operate. While SAPL and the Commonwealth of Massachusetts argue that institution of proceedings is necessary to protect public health and safety, neither demonstrates any imminent threat to public health and safety that would require institution of proceedings apart from the operating license review.

As a basis for instituting a show cause proceeding, the Commonwealth of Massachusetts suggests that permitting continued construction may result in "perhaps billions" of dollars of wasted investment if the Commission ultimately rejects the Seabrook operating licenses on the basis of inability to adequately cope with emergencies. That risk of lost investment is the risk that every holder of a construction permit carries. *See Power Reactor Development Co. v. International Union of Electrical, Radio & Machine Workers*, 367 U.S. 396 (1961). The permittee's investment in constructing the facility is not, however, a proper factor for consideration in determining at the operating license stage whether a nuclear power plant is safe to operate. *Id.* at 415. In order to receive an operating license, the applicant must do all things necessary to ensure safe operations of the facility. *See Public Service Company of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-623, 12 NRC 670, 677-78 (Dec. 9, 1980). Institution of proceedings at this juncture is not necessary to assure that the Commission's requirements for emergency planning are met before the Seabrook Station operates.

I have determined, therefore, not to institute a proceeding to suspend or revoke the Seabrook Construction Permits. Accordingly, SAPL's request, in which the Commonwealth of Massachusetts joined, is denied. A copy of this decision will be filed with the Secretary for the Commission's review in

accordance with 10 C.F.R. 2.206(c) of the Commission's regulations. As provided in 10 C.F.R. 2.206(c), this decision will constitute the final action of the Commission 25 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 15th day of July, 1981.

Enclosure:
Table 1

Table 1

Evacuation Time Comparisons

	Winter Weekday Normal Weather	Peak Summer Seabrook FEMA Estimates	Other Sites Normal Conditions*	
			NUREG/CR-1856 Median	NUREG/CR-1856 Maximum
2 mile radius	-	5.2 hours	1.5 hours	6.0 hours
5 mile radius	-	5.5 hours	2.2 hours	8.0 hours
10 mile radius	4.5 hours	6.2 hours	5.0 hours	21.0 hours**

*General Population Evacuation Times - Normal Conditions from NU REG/CR-1856, "An Analysis of Evacuation Time Estimates Around 52 Nuclear Power Plant Sites."

**Licensee estimate, judged to be too high. Next highest licensee estimate is 13 hours.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Joseph M. Hendrie, Chairman

Victor Gillinsky

Peter A. Bradford

John F. Ahearne

In the Matter of

Docket No. PRM-2-6

ECKERT, SEAMANS, CHERIN & MELLOTT

July 8, 1981

The Commission denies a request for reconsideration of its earlier denial of the petition for rulemaking (PRM-2-6) submitted by Eckert, Seamans, Cherin & Mellott. The petitioner, on behalf of the Westinghouse Electric Corporation, had requested the Commission to amend its regulations to prescribe fixed time periods for the completion of licensing reviews by the Commission's regulatory staff and Atomic Safety and Licensing Boards.

NRC: ADJUDICATORY RESPONSIBILITIES

While the Commission is responsible for and concerned with efficiency in its licensing process and believes that unnecessary or inappropriate delays should be avoided whenever possible, of overriding importance is the Commission's statutory responsibility to ensure that issuance of a license to an applicant will not be inimical to the health and safety of the public and will satisfy the requirements of applicable environmental laws.

NRC: ADJUDICATORY RESPONSIBILITIES

The imposition of fixed time periods for the completion of licensing reviews would unduly restrict the necessary discretion of the Commission's regulatory staff and licensing boards.

DENIAL OF REQUEST FOR RECONSIDERATION OF PETITION FOR RULEMAKING

By letter dated March 14, 1981, Eckert, Seamans, Cherin & Mellott, a private law firm, resubmitted for reconsideration a petition for rulemaking which the Commission had recently denied. The request for reconsideration, submitted by the law firm on behalf of the Westinghouse Electric Corporation, states, in pertinent part, that:

We previously filed this Petition by letter dated December 29, 1978, which letter is attached hereto and incorporated as part of this Petition. As noted in the December 29, 1978 Petition, the Commission has recognized repeatedly that there is a substantial public interest which demands that its licensing proceedings be conducted and concluded in a timely manner. Recently the need for the expeditious conduct of Commission proceedings has been reemphasized in light of the lengthy delays encountered in the licensing process during the past two years. Accordingly, although the December 29, 1978 Petition for Rulemaking was denied by the Commission on August 13, 1980, we are resubmitting the Petition at this time for reconsideration.

Timely completion of Commission licensing proceedings depends on timely review of applications by the Regulatory Staff and timely completion of the hearing process controlled by the Atomic Safety and Licensing Boards. Regulations of the type we are proposing, which would prescribe time limits for such review and completion (which limits could be modified for good cause shown) are needed to emphasize and enforce the Commission's determination to have timely decisionmaking. The proposed regulations would bring to the review and hearing process early and direct Commission oversight in the event that delay in timely decisionmaking is threatened.

A copy of the request for reconsideration is available for public inspection and copying for a fee at the NRC Public Document Room at 1717 H Street, N.W., Washington, D.C.

The December 29, 1978 letter requested the Commission to amend its regulations, "Rules of Practice for Domestic Licensing Proceedings," 10 C.F.R. Part 2, to prescribe fixed time periods for completion of licensing review by the Commission's regulatory staff and Atomic Safety and Licensing Boards. Notice of filing the petition for rulemaking (PRM-2-6) and a request for public comments was published in the *Federal Register* on February 5, 1979 (44 FR 6994). After careful consideration of the petition

and the 4 letters of public comment which were received with respect to the petition, the Commission denied the petition on August 13, 1980. Notice of the denial, and the reasons therefore, was published in the *Federal Register* on August 18, 1980 (45 FR 54916). [See Appendix A.] Copies of the petition, the public comments, and the Commission's letter of denial are available for public inspection and copying for a fee at the NRC Public Document Room.

The Commission has considered the request for reconsideration and hereby denies the request. The Commission believes that its August, 1980 denial of the petition for rulemaking adequately and reasonably sets forth the rationale and basis for its action at that time. Therefore, no lengthy rearticulation of its position is warranted now. Suffice it to emphasize that while the Commission is responsible for and concerned with efficiency in its licensing process and believes that unnecessary or inappropriate delays should be avoided whenever possible, of overriding importance is the Commission's statutory responsibility to ensure that issuance of a license to an applicant will not be inimical to the health and safety of the public and will satisfy the requirements of applicable environmental laws. The petitioner's proposals for the imposition of fixed time periods for the completion of licensing reviews would unduly restrict the necessary discretion of the Commission's staff and licensing boards. The request for reconsideration adds nothing of substance to the original petition (it simply adopts the earlier petition) and the Commission is aware of no compelling reason to alter its judgement rendered last August with respect to the petition. Moreover, the Commission has continued to pursue its oft stated policy of eliminating unnecessary or inappropriate delays in the licensing process. Extensive meetings have been held on this subject in recent weeks and amendments to Appendix B of 10 C.F.R. Part 2 of the Commission's Regulations, "Suspension of 10 C.F.R. 2.764 and Statement of Policy on Conduct of Adjudicatory Proceedings," were published in the *Federal Register* by the Commission on May 28, 1981 (46 FR 28627). A "Statement of Policy on the Conduct of Licensing Proceedings" was also issued by the Commission. In addition, several other amendments to the Commission's Rules of Practice to expedite the licensing process were adopted after consideration of public comments and proposed rules to further facilitate expedited proceedings were published in the *Federal Register* for public comment (45 FR 30328, 30349, June 8, 1981). In addition, the Commission recently directed the Boards to attempt where possible to set hearing schedules so that the board initial decision would issue within 300 days and directed staff to use that same period as a reference hearing process period

for scheduling reviews for cases where boards have not yet set specific schedules.

In view of the foregoing, the Commission denies the March 14, 1981 request for reconsideration filed by Eckert, Seamans, Cherin & Mellott on behalf of the Westinghouse Electric Corporation. A copy of the Commission's letter of denial is available for public inspection and copying for a fee at the NRC Public Document Room at 1717 H Street, N.W., Washington, D.C.

For the Nuclear Regulatory
Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 8th day of July, 1981.

APPENDIX A

Federal Register Notice

August 18, 1980

[Docket No. PRM-2-6]

Eckert, Seamans, Cherin & Mellott; Notice of Denial of Petition for Rulemaking

Agency: U.S. Nuclear Regulatory Commission

Action: Denial of petition for rulemaking

SUMMARY: The Nuclear Regulatory Commission is hereby denying a petition for rulemaking [PRM-2-6] submitted by Eckert, Seamans, Cherin & Mellott. The petitioner had requested the Commission to amend its regulations to prescribe time periods for the completion of licensing review by the Commission's regulatory staff and Atomic Safety and Licensing Boards.

FOR FURTHER INFORMATION CONTACT: Bruce A. Berson, Office of the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Telephone (301) 492-7678.

SUPPLEMENTARY INFORMATION: The petition for rulemaking (PRM-2-6) submitted by Eckert, Seamans, Cherin & Mellott, 600 Grant Street, Pittsburgh, Pennsylvania, by letter dated December 29, 1978, requested the Commission to amend its regulation, "Rules of Practice for Domestic Licensing Proceedings," 10 C.F.R. Part 2 to prescribe time periods for completion of licensing review by the Commission's regulatory staff and Atomic Safety and Licensing Boards.

The petitioner stated that:

The timely completion of Commission licensing proceedings is in large measure dependent on (1) the duration of application review by the Regulatory Staff under the immediate direction and control of the Director of Nuclear Reactor Regulation, and (2) the duration of the hearing process controlled by the Atomic Safety and Licensing Boards. The Commission's existing Rules of Practice are silent with regard to the responsibilities of the Regulatory Staff in this regard and only prescribe some time limits for the Atomic Safety and Licensing Boards. In recent years there has been an increasing tendency by the Regulatory Staff to miss, without apparent justification, scheduling commitments, and other evidence of Staff difficulty in properly managing its review function so as to bring it to a conclusion

within a reasonable length of time. It is believed that such unnecessary delay on the part of the Regulatory Staff can be attributed in part to the lack of any regulations prescribing time periods for application review. It is therefore submitted that regulations of the type proposed which would prescribe time limitations for Regulatory Staff application review, limitations which could be modified for good cause shown, are needed to insure that the Staff pays more than mere lip service to the Commission's mandate for timely decision making.

The petitioner proposed that a Subpart J—Duration of Commission Review—be added to 10 C.F.R. Part 2 in order to insure the making of both sound and timely licensing decisions by the regulatory staff. Two amendments to existing sections of Part 2 also were proposed by the petitioner with the view of insuring timely completion of the Atomic Safety and Licensing Board hearing process. The text of the proposed Subpart J and the amendments of §§ 2.751a(a) and 2.760 were set out in the petition.

Specifically, petitioner's proposed Subpart J would require the staff to establish an estimated schedule for completion of its safety and environmental reviews within 30 days after an application is docketed. The schedule would have to call for publication of the staff's safety evaluation report and draft environmental statement within 12 months of docketing. The first deviation from the schedule would require the staff to demonstrate good cause in a petition to the Director of Nuclear Reactor Regulation who could authorize an extension of up to 3 months. A second deviation would require Commission approval after a staff showing of good cause; and, upon a showing of extraordinary circumstances, the Commission could grant a third extension. The applicant and any party to the licensing proceeding could file written responses to the staff petitions. The final environmental statement would be published within 60 days after the close of the public comment period specified in the draft environmental statement. Changes from that date would be made in accordance with the procedure outlined above.

The petitioner also proposed amendments to 10 C.F.R. 2.751a and 2.760. These amendments would require an Atomic Safety and Licensing Board to commence hearings within 60 days after publication of the relevant staff documents and render an initial decision within 60 days after the parties' proposed findings of fact and responses thereto were filed. The Commission could grant an extension for issuance of the initial decision upon a showing of good cause by the presiding officer.

A notice of filing of the petition and request for comments by April 6, 1979 was published in the Federal Register on February 5, 1979 (44 FR 6994). Four letters of public comment were received. One commenter opposes the petition without providing reasons. A letter from a committee

on nuclear technology and law of a state bar association generally supports the petition but maintains that the proposed amendments requiring an Atomic Safety and Licensing Board to schedule hearings and render a decision within specific time periods might be overly specific and inappropriately reduce the Commission's flexibility. Two letters from electric utility companies, citing the cost of unnecessary delays, favor the proposed rule change. The petition and comments are available for public inspection and copying at the NRC Public Document Room at 1717 H Street, N.W., Washington, D.C.

The Commission has carefully considered the petitioner's proposals that time limits be prescribed for (1) completion of environmental and radiological health and safety reviews by the Commission's Regulatory Staff in licensing proceedings and (2) commencement of the hearing and issuance of an initial decision by an Atomic Safety and Licensing Board following the adjudicatory hearing. For the reasons set forth below, the Commission has determined that the proposals, if adopted, would unduly restrict the necessary discretion of its staff and licensing boards. Therefore, the petition is denied.

The Commission has long recognized that the staff's expertise is central to, and an inherent part of, the execution of the agency's mission. In the context of operating license and construction permit proceedings, the staff subjects the utility's license application to independent radiological health and safety and environmental reviews. The staff's safety and environmental analyses are published in separate reports which are made a part of the record, along with the views of the intervening parties and the license applicant. All of these views are considered by an Atomic Safety and Licensing Board during the adjudicatory hearing it conducts. The Atomic Safety and Licensing Board then renders a decision which can be appealed to the Atomic Safety and Licensing Appeal Board, and, in the Commission's discretion, to the Commission itself. A final agency decision may be appealed to a United States Court of Appeals.

The Commission is responsible for and concerned with efficiency in the Commission's licensing process, and believes that unnecessary or inappropriate delays should be avoided whenever possible. However, of overriding importance is the Commission's statutory responsibility to ensure that the issuance of a license to an applicant will not be inimical to the health and safety of the public and will satisfy the requirements of applicable environmental laws.

The published reports, the product of the staff's environmental and radiological health and safety reviews, are vital to the adjudicatory process and the regulatory scheme. The timing of the publication of these necessary documents will, to a large extent, depend upon the adequacy and

completeness of the information the staff possesses at a given time (information usually supplied by the license applicant) and the time required by the staff to analyze that information.¹ Hence schedule changes are often justified.²

The Commission believes that as a matter of sound management policy its staff should retain discretion to make reasonable adjustments in its review schedule to account for changed or unforeseen circumstances. Within the past year, the necessity to consider the lessons learned from the accident at Three Mile Island has demonstrated the need for flexibility. Requiring formal Commission or Office Director approval for any schedule change (in the manner suggested by the petitioner) would unnecessarily burden the review process. The Commission has undoubted authority to rectify unreasonable staff delays and a mechanism already exists to promptly bring such cases to the Commission's attention. (See the decision of the Atomic Safety and Licensing Appeal Board in *Offshore Power Systems* (Floating Nuclear Power Plants). ALAB-489, 8 NRC 194 (1978)).

The Commission also believes that the petitioner's proposal to require an Atomic Safety and Licensing Board to commence required hearings and render an initial decision within a time certain unduly restricts the discretion of the Licensing Boards. The Commission recognizes that many proceedings raise novel or especially difficult questions concerning radiological health and safety or the environment. Although the Commission expects its Licensing Boards to render decisions with reasonable expedition, it is not in the public interest to place in jeopardy the quality of these decisions with an undue emphasis on speed. Possible schedule conflicts could also result from the imposition of fixed time schedules. Moreover, the Commission believes that sound management principles should not require presiding officers of Atomic Safety and Licensing Boards to routinely seek Commission approval of time extensions for rendering decisions.

¹The Commission notes that its staff strives to issue its safety evaluation report and draft and final environmental statements within 20, 8 and 14 months, respectively, after an application for a construction permit is docketed. The goal is similar in operating license proceedings.

²The Commission's proposed amendments to its regulations implementing the National Environmental Policy Act of 1969 provide that its staff will establish a time schedule for any part of its NEPA review process upon request of an applicant and will inform the applicant in writing of the reason for any delay. See proposed 10 C.F.R. 51.15 (45 FR 13739, March 3, 1980).

In view of the foregoing, the Commission denies the petition for rulemaking filed by Eckert, Seamans, Cherin & Mellott on December 29, 1978. A copy of the Commission's letter of denial is available for public inspection and copying at the NRC public Document Room at 1717 H Street, N.W., Washington D.C.

For the Nuclear Regulatory
Commission

Samuel J. Chilk
Secretary to the Commission

Dated at Washington, D.C.,
this 13th day of August, 1980.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gillinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket No. 50-289
(Restart)

METROPOLITAN EDISON COMPANY, et al.
(Three Mile Island Nuclear Station,
Unit 1)

August 13, 1981

The Commission revised its July 2, 1979 order by extending its provision that Metropolitan Edison Company keep Unit 1 in cold shutdown condition until further Commission order to GPU Nuclear Corporation. The Commission also revises its August 19, 1979 (CLI-79-8) and March 6, 1980 (CLI-80-5) orders to provide that the Licensing Board consider GPU Nuclear's management competence, rather than Metropolitan Edison's, during the restart proceedings for Unit 1. The Commission further authorizes the NRC staff to issue an amendment to the operating license for Unit 1 which will transfer operating authority for the unit to GPU Nuclear.

ORDER

On January 26, 1981, Metropolitan Edison advised the Commission that it had filed an application for an amendment to its operating license with the NRC staff which would transfer from Metropolitan Edison to GPU Nuclear Corporation the authority to possess, use and operate the TMI-1 facility. It also filed a motion requesting the Commission to modify its July 2, 1979 Order as appropriate to extend to GPU Nuclear the restriction on Metropolitan Edison that Unit One be maintained in a cold shutdown condition. On that same date it also filed a motion requesting the Commission to amend its August 9, 1979, CLI-79-8, 10 NRC 141, and March 6, 1980, CLI-80-5, 11 NRC 408, Orders to authorize the TMI-1 Restart

Licensing Board to consider the qualifications of GPU Nuclear, rather than Metropolitan Edison to restart and operate TMI-1. On February 17, 1981, the NRC staff filed a response to the motions which requested that the Commission defer action on these requests until the NRC staff had the opportunity to complete its review of the proposed license amendment. On March 23, 1981 the Commission issued an Order, CLI-81-3, 13 NRC 291, 294, stating that it would defer ruling on the motions until it had heard further from the NRC staff.¹ On July 6, 1981, the NRC staff filed a supplemental pleading with the Commission recommending that Metropolitan Edison's requests be granted. No other party has filed pleadings addressing the issue.

After reviewing the staff's submissions, the Commission has granted the requests made by Metropolitan Edison. The July 2, 1979 order, as amended by the March 23, 1981 order, is revised to provide that GPU Nuclear shall keep Unit 1 shutdown pending further order of the Commission. The Commission's August 9, 1979 and March 6, 1980 orders are revised to provide that the Atomic Safety and Licensing Board presiding over the restart proceeding is to consider the management competence of GPU Nuclear rather than that of Metropolitan Edison, and the NRC staff is authorized to issue an amendment to the TMI-1 operating license which will transfer authority to operate the facility to GPU Nuclear.

Commissioner Gilinsky did not participate in the decision.

It is so ORDERED.

For the Commission

JOHN C. HOYLE

Acting Secretary of the Commission

Dated at Washington, D.C.
this 13th day of August, 1981.

¹ Among other things, the Order also authorized the licensee to commence hot functional testing.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gillnsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket No. 11000495
Application No.
XSNM-1471

WESTINGHOUSE ELECTRIC CORP.
(Export of LEU to the Philippines)

August 20, 1981

The Commission denies petitioners' request for leave to intervene and for a hearing on applicant's request for authorization to export special nuclear material to the Philippines, finding that petitioners failed to assert the requisite "affected interest" or "injury-in-fact" to entitle them to a hearing as a matter of right and that since the Commission has decided in earlier proceedings (CLI-80-15, 11 NRC 672, and CLI-76-6, 3 NRC 563) not to consider health, safety and environmental impacts in evaluating fuel export applications, there is no basis for holding further public proceedings on the request.

ORDER

On April 19, 1979 a petition was filed on behalf of the Center for Development Policy, Jesus Nicanor P. Perlas, III, and the Philippine Movement for Environmental Protection seeking leave to intervene and a hearing on application No. XSNM-1471. Westinghouse Electric Corporation had filed that application with the Commission requesting authorization to export special nuclear material to the Philippines. The material would be used to fuel the Napot Point reactor. The petitioners also requested the Commission to consolidate consideration of the application with two other pending applications covering exports to the Philippines, XR-120 and XCOM-0013. Petitioners specifically requested a hearing on seven issues, most of which pertained to whether operation of the Napot

Point nuclear reactor would have an adverse affect on the health, safety, and environment of individuals residing in the Philippines.

On October 19, 1979, the Commission issued an order soliciting public comments on certain procedural and jurisdictional issues raised by the petition. It also denied in part the consolidation request, noting that it would not be appropriate to consolidate the fuel application with the other applications because the Commission had not yet received Executive Branch views on the fuel application.¹ The Commission consolidated consideration of applications XR-120 and XCOM-0013. However, the Commission stated that because:

the issues raised by all three applications are substantially the same, ... the Commission would expect to consider all relevant matters pertaining to the Philippine exports in the scope of the proceeding commenced by this order. Order at pp. 5-6.

After receiving the comments solicited by that Order, the Commission solicited a second round of comments focusing on those issues raised by the petition that fell within the Commission's jurisdiction. On May 15, 1980, the Commission issued two orders which authorized the issuance of XR-120 and XCOM-0013. CLI-80-14, 11 NRC 631; CLI-80-15, 11 NRC 672. The Commission's decisions of May 15, 1980 have recently been upheld by the United States Court of Appeals for the District of Columbia Circuit. See *Natural Resources Defense Council v. NRC*, 647 F.2d 1345 (1981).

The Commission has decided not to hold further proceedings on the fuel application. Petitioners are not entitled to a hearing as a matter of right under Section 189 of the Atomic Energy Act. The rationale for this decision is found in earlier Commission opinions which denied the Center for Development Policy a hearing on export applications relating to contemplated exports to Taiwan and South Korea. See *In the Matter of General Electric Company*, CLI-81-2, 13 NRC 67 (1981); *In the Matter of Westinghouse Electric Company*, CLI-80-30, 12 NRC 253 (1980). In brief, the Center for Development Policy has not asserted the requisite

¹ Pursuant to 10 CFR 110.84(d), the Commission does not hold public hearings until it has received Executive Branch views on an application.

"affected interest" or "injury in fact" which would entitle it to a hearing as a matter of right.²

The Commission has now received Executive Branch views on XSNM-1471. In light of the fact that the earlier proceeding ventilated the issues raised by the fuel application, that the petitioners gave the Commission the benefit of their views in that proceeding, and that the Commission has decided not to consider health, safety and environmental impacts in evaluating fuel export applications,³ there is no basis for holding further public proceedings on the fuel application. Accordingly, a hearing would not be in the public interest or assist the Commission in making the statutory determinations required by the Atomic Energy Act. The Commission therefore has denied the intervention petition and request for a hearing.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 20th day of August, 1981.

² Petitioner Jesus Nicanor P. Perlas, III is a citizen of the Philippines who is currently residing in the United States. He has published articles on the potential dangers of nuclear power to Philippine agriculture and lectures on issues relating to nuclear power. He is also Executive Secretary of the Philippine Movement for Environmental Protection, another petitioner. The Philippine Movement for Environmental Protection is an unincorporated association comprised primarily of Philippine citizens who reside within 40 miles of the Napot Point reactor site. It seeks to determine and evaluate the potential risks and benefits of the proposed reactor and assure that citizens of the United States and the Philippines receive pertinent information regarding the Napot Point reactor so that they can formulate views on matters relating to the reactor.

Under the Commission's previous opinions these interests are not sufficient to entitle these petitioners to a hearing as a matter of right because they cannot demonstrate, *inter alia*, "inquiry in fact". See *In the Matter of Edlow International Company*, CLI-76-6, 3 NRC 563; *In the Matter of Westinghouse Electric Company*, CLI-80-30, 12 NRC 253 (1980).

³ *In the Matter of Westinghouse Electric Corporation*, CLI-80-15, 11 NRC 672 (1980); *Edlow International*, CLI-76-6, 3 NRC 563, 584, 585 (1976).

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

Nunzio J. Palladino, Chairman
Victor Gilinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of**Docket No. 50-289**

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

August 20, 1981

The Commission issues an order in this Restart proceeding stating its intention to begin its immediate effectiveness review of the Licensing Board's first partial initial decision (on management competence) soon after its expected issuance later in the month, if the Board resolves the management competence issues in a manner favorable to the eventual operation of Unit 1. The Commission requests the views of the parties on the immediate effectiveness of the Board's decision. The Commission also modifies its Order of August 9, 1979, CLI-79-8, 10 NRC 141 (which provided that the record in the proceeding be certified by the Licensing Board directly to the Commission for final decision), to provide that an Atomic Safety and Licensing Appeal Board be established to hear initial appeals in this proceeding, subject to possible Commission review in response to petitions for review filed pursuant to 10 CFR 2.786 or on the Commission's own motion.

ORDER

It is the Commission's present understanding that the Licensing Board for the TMI Unit One Restart Proceeding will issue two partial initial decisions. The first partial initial decision, which is scheduled for later this month, will address management competence issues. The second decision, which is expected to be issued in October, will address the remaining issues in the proceeding, primarily the hardware/design and emergency planning contentions. The Commission cannot predict, at this time, whether the

Board's second decision will authorize operation of Unit One. However, the Commission does not wish to await that decision before commencing its review. Therefore, the Commission intends to begin its immediate effectiveness review shortly after the Licensing Board issues its first partial initial decision if that decision resolves management competence issues in a manner favorable to the eventual operation of Unit One.

Parties are requested to file comments with the Commission on whether the partial initial decision on management competence should be made immediately effective so that they will be received by the Commission no later than fifteen days after the Licensing Board decision is rendered. Reply submissions must be received by the Commission no later than ten days after service of the comments. Because of the importance of the management competence issue, the Commission will afford the parties an opportunity to make oral presentations to the Commission on the immediate effectiveness of that partial initial decision. The Commission will issue an order which sets the time and date for such presentations after the Licensing Board renders its decision. The Commission will also issue an order at a later date setting forth a schedule for the parties to file comments on whether the Board's second partial initial decision should be made immediately effective if that decision authorizes operation of Unit One.

In its Order of August 9, 1979, CLI-79-8, 10 NRC 141, which initiated the TMI Unit One Restart Proceeding, the Commission stated that the record would be certified directly to the Commission for final decision. At the time the Commission made this decision to deviate from its customary practice of having an Atomic Safety and Licensing Appeal Board hear initial appeals, the Commission did not contemplate that the proceeding before the Licensing Board would take more than two years, involve so many complex issues, or result in the development of a record that exceeds 35,000 pages. In light of these unanticipated developments and its concern that the appeals be handled efficiently and agency resources be used effectively in this important proceeding, the Commission has modified its August 9, 1979 Order to provide that an Atomic Safety and Licensing Appeal Board be established to hear initial appeals in this proceeding. Pursuant to 10 CFR 2.786, the parties to the proceeding will, of course, be able to file petitions requesting the Commission to take review of the Appeal Board decision. The Commission may also review the Appeal Board decision on its own motion.

The Commission wishes to emphasize that, pursuant to the August 9, 1979 Order and its Order of March 23, 1981, CLI-81-3, 13 NRC 291, 295, it intends to decide within 35 days after issuance of the Licensing Board's second partial initial decision, if that decision authorizes operation of Unit One, whether the Board's authorization should be effective during

the pendency of any appeals. During review the Commission will closely examine the major issues raised in the proceeding.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 20th day of August, 1981.

**SEPARATE VIEWS OF
COMMISSIONERS GILINSKY AND BRADFORD**

We do not approve the Commission's decision to shift appeals in this case to the Appeal Board. The Commission should have abided by its commitment of August 9, 1979, to take direct review of the TMI-1 decision.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Richard S. Salzman*

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)

August 10, 1981

The Appeal Board reverses the Licensing Board's initial decision (LBP-80-28, 12 NRC 459) and authorizes the issuance of an amendment to applicant's materials license, allowing, subject to one condition, the highway transportation of 300 spent fuel assemblies from the applicant's Oconee Nuclear Station to the McGuire Nuclear Station for storage.

NEPA: ENVIRONMENTAL
IMPACT STATEMENT (NEED)

NEPA requires the preparation of an environmental impact statement only in connection with major federal actions which can be expected to have a significant impact on the quality of the human environment.

* Mr. Salzman participated in the consideration and disposition of these appeals. Prior to his resignation from the Appeal Panel as of July 19, 1981, he reviewed a preliminary draft of the Board's opinion and noted his agreement with the result reached therein. He was not available, however, to review the substantially revised final version of the opinion and, in the circumstances, should be deemed to have concurred in the result alone.

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

Where federal approval is sought of a portion of a private plan, developed without federal involvement, an agency may confine its scrutiny under NEPA to the portion of the plan for which approval is sought so long as (1) that portion has independent utility; and (2) as a result, the approval does not foreclose the agency from later withholding approval of subsequent portions of the overall plan.

NEPA: ENVIRONMENTAL IMPACT APPRAISAL (REQUIREMENTS)

An environmental impact appraisal must supply "convincing reasons" why an action with arguably potentially significant environmental impacts does not require a detailed impact statement; the appraisal should (1) reflect that a hard look was taken at the problem; (2) identify the relevant areas of concern; and (3) make a convincing case that the impact is significant. *Maryland-National Capital Park and Planning Comm'n v. U.S. Postal Service*, 487 F.2d 1029, 1039-40. (D.C. Cir. 1973).

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

An environmental impact statement need not consider remote and highly speculative consequences; neither do they trigger the obligation to prepare a detailed environmental impact statement.

NEPA: SCOPE OF ENVIRONMENTAL ANALYSIS

Neither Section 102(2)(C) nor Section 102(2)(E) of NEPA obligates the federal agency "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." *Portland General Electric Co. (Trojan Nuclear Plant)*, ALAB-531, 9 NRC 263, 266 (1979).

APPEARANCES

Mr. J. Michael McGarry, III (with whom Messrs. Malcolm H. Phillips, Jr., Washington, D.C. and William L. Porter, Charlotte, North Carolina, were on the brief) for Duke Power Company, *applicant*.

Ms. Elyn R. Weiss (with whom Messrs. William S. Jordan, III, Lee L. Bishop, and S. Jacob Scherr, Washington, D.C., were on the brief) for Natural Resources Defense Council, *intervenor*.

Mr. Jesse L. Riley, Charlotte, North Carolina, for Carolina Environmental Study Group, *intervenor*.

Mr. Leonard M. Trosten, Ms. M. Reamy Ancarrow, and Mr. Michael F. McBride, Washington, D.C., filed a brief on behalf of Electric Utility Companies Nuclear Transportation Group, *amicus curiae*.

Mr. Stephen M. Sohinki (Messrs. Edward G. Ketchen, Richard K. Hoefling, and Bruce A. Berson on the brief) for the Nuclear Regulatory Commission staff.

DECISION

On October 31, 1980, the Licensing Board issued an initial decision¹ on the application of the Duke Power Company for a license amendment which would permit it to receive and store at its McGuire Nuclear Station 300 spent fuel assemblies generated at its Oconee Nuclear Station.² If approved, the amendment would also allow the transportation of those assemblies to the McGuire facility so long as the packaging requirements of 10 CFR 71.12 are met. Prior to the hearing, the NRC staff has undertaken an environmental analysis of the sought license amendment (including the

¹ LBP-80-28, 12 NRC 459.

² More particularly, the application, dated March 9, 1978, seeks an amendment to Special Nuclear Materials License SNM-1773 issued to the Duke Power Company by the Commission pursuant to 10 CFR Part 70. That license now authorizes Duke to store new, unirradiated nuclear fuel at its McGuire Nuclear Power Station, a facility not yet in full operation. Duke initially sought a license amendment to cover 400 Oconee spent fuel assemblies. The staff thereafter proposed a limit of 300 spent fuel assemblies, to which the applicant agreed.

impact of transporting the spent fuel over the highways between the two facilities) which led it to determine that the proposed activities would be without significant environmental effect. The Licensing Board decided, however, that the analysis did not comply with the requirements of the National Environmental Policy Act of 1969 (NEPA). It further concluded that the grant of the amendment would be inimical to the public health and safety. The Board therefore denied the application.

Both the applicant and the staff have appealed from the decision below. The intervenors, Natural Resources Defense Council (NRDC) and the Carolina Environmental Study Group (CESG), urge affirmance. In addition, the Electric Utility Companies Nuclear Transportation Group (NTG) has filed a brief *amicus curiae* challenging the Licensing Board's adverse environmental and safety findings relating to the transportation of the spent fuel.

For the reasons explained below, we reverse the decision of the Licensing Board and authorize the grant of the sought license amendment.

I. NEPA CONSIDERATIONS

Section 102(2)(C) of NEPA requires all agencies of the Federal Government to prepare detailed environmental statements on, *inter alia*, major federal actions significantly affecting the quality of the human environment.³ Pursuant to Commission regulation,⁴ the staff performed an environmental review of the proposed license amendment to determine whether such a statement was necessary in this instance. Upon that review, it issued an environmental impact appraisal (EIA), in which it concluded that a full environmental impact statement (EIS) was "not warranted"

³ 42 U.S.C. 4332(2)(C). More specifically, the agency must include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on —

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

⁴ See 10 CFR 51.5(c)(1).

because “there will be no environmental impact significantly affecting the quality of human environment attributable to the proposed action.” In accordance with that conclusion, the staff published a “Negative Declaration” under 10 CFR 51.7.⁵

On the basis of its evaluation of the evidence before it, however, the Licensing Board disagreed with that assessment. It determined that the “issuance of the license amendment and activity thereunder would significantly affect the quality of the human environment, and therefore [would] require [*inter alia*] the preparation of an environmental impact statement.” 12 NRC at 517. Additionally, the Board found that the “Environmental Impact Appraisal and Negative Declaration [were] improperly segmented and unduly limited in scope, inadequate in the consideration of reasonably predictable environmental impacts, and fail[ed] to properly evaluate and give weight to preferable alternatives, as required by NEPA and the Commission’s Regulations.” *Ibid.*

We consider *seriatim* the underpinnings of the Board’s dissatisfaction with the staff’s environmental analysis.

A.1. The staff had conducted its environmental analysis in terms of a proposal to ship not more than 300 spent fuel assemblies from Oconee to McGuire. But the Licensing Board found that those shipments would be but one part of a so-called “Cascade Plan” — a “first step in a plan or program to ship excess spent fuel from older nuclear reactors in Duke’s system to newer reactors.” *Id.* at 469. In carrying out this “Cascade Plan”, according to the Board, the applicant “would move fuel from an operating reactor to another reactor storage pool and upon perhaps filling of that, on to the next pool.” *Ibid.* Likening the plan to “a game of musical chairs, which goes on and on until the government develops and provides nuclear waste storage facilities” (*id.* at 476), the Board reasoned that compliance with NEPA required an assessment of the environmental impact of the “Cascade Plan” (*ibid.*), and not, as the staff had done, of a single series of spent fuel shipments from Oconee to McGuire for storage at the latter facility.

On the appeal, the applicant (supported by the staff) disputes that the record below discloses the existence of any such long-range plan — at least one to which the applicant is committed.⁶ It claims that a definite corporate plan exists only for the shipment of spent fuel from Oconee to McGuire and that past company consideration of other possible shipments of spent fuel (including further transshipment of the Oconee spent fuel

⁵43 *Fed. Reg.* 61057-58 (December 29, 1978);

⁶Applicant’s Br., p. 53; App. Tr. 15.

from McGuire to its Catawba nuclear plant) was in the nature of contingency planning.⁷ It thus argues that the scope of the environmental inquiry conducted by the staff was properly limited to the shipment of the 300 spent fuel assemblies from Oconee to McGuire and storage at the latter facility.⁸ It insists, moreover, that the staff analysis satisfactorily demonstrates that that shipment and storage will not have a significant impact on the environment.

For its part, intervenor NRDC presses us to accept the Licensing Board's finding on the existence of the plan. In its view, "[t]he evidence in this case establishes beyond question that Duke has a plan to ship spent fuel around its system at least from Oconee to McGuire to Catawba."⁹

In short, there is a sharp difference of opinion among the parties on an issue of basic fact. This is not too surprising. Questions addressed to previously-formulated intentions as to future courses of action are often the subject of murky evidence and thus difficult to answer with confidence.

But in this instance, fortunately, it may not be necessary to come to grips with the matter of the extent of the applicant's commitment to the "Cascade Plan." As the parties recognize, that matter is significant here only if the Licensing Board is right in its additional holding that, if it existed, the "Cascade Plan" in its entirety had to be taken into account in the staff's environmental analysis. Although on this issue, to which we now turn, the parties likewise are in disagreement, it is more readily susceptible of resolution.

2.a. As above noted, NEPA requires the preparation of an environmental impact statement only in connection with major *federal* actions which can be expected to have a significant impact on the quality of the human environment. Thus, the question is whether, as the Licensing Board apparently believed although it did not explicitly so find, the assumed "Cascade Plan" amounts to a proposal for federal action.

There can be no doubt that if a federal agency had participated substantially in its development — financially or otherwise — the plan necessarily would have to be deemed a federal proposal for NEPA purposes. As such, an environmental analysis of the *full* plan would have had to be conducted at this time no matter how much or little of the plan was being left for later implementation. This is the teaching of a line of judicial decisions exemplified by *Scientists' Institute for Public Information, Inc. v. Atomic Energy Commission*, 481 F.2d 1079, 1085-93 (D.C. Cir. 1973).

⁷ Applicant's Br., p. 63.

⁸ *Id.* at pp. 19-22.

⁹ NRDC Br., p. 18.

Here, however, the assumed plan was not devised by this or any other federal agency. Nor was there any federal participation in its formulation. If, as alleged, the applicant does indeed have a multi-step program for moving spent fuel among its facilities, that program is wholly of its own making. Not only was there no federal involvement but, according to the Licensing Board,¹⁰ the applicant took pains to keep its intentions to itself.

Although the Board below did not focus upon it, this consideration weighs heavily in deciding whether the staff could properly confine its environmental analysis to the 300 spent fuel shipments for which the applicant now seeks federal approval. In the instance of a segmented non-federal plan, NEPA does not impose an inflexible requirement that the entire plan receive an environmental assessment at the time that the first segment is put before a governmental agency for licensing action. Rather, it is settled that the agency may confine its scrutiny to the portion of the plan for which approval is sought *so long as* (1) that portion has independent utility; and (2) as a result, the approval does not foreclose the agency from later withholding approval of subsequent portions of the overall plan. See *e.g.*, *Atlanta Coalition v. Atlanta Regional Commission*, 599 F.2d 1333 (5th Cir. 1979); *Swain v. Brinegar*, 542 F.2d 364 (7th Cir. 1976); *Sierra Club v. Froehlke*, 534 F.2d 1289 (8th Cir. 1976); *Trout Unlimited v. Morton*, 509 F.2d 1276 (9th Cir. 1974); *Indian Lookout Alliance v. Volpe*, 484 F.2d 11 (8th Cir. 1973). As summarized by the Eighth Circuit in *Froehlke*, 534 F.2d at 1297:

The courts have been presented with the issue of "segmentation" of impact statements in various contexts and we do not propose to attempt the impossible, namely, the enunciation of a general rule that will cover all cases. The crucial dependence is upon the facts before the court in the particular case *sub judice*. Where it is found that the project before the court is an essentially independent one, an EIS for that project alone has been found sufficient compliance with the act. In such case there is no irretrievable commitment of resources beyond what is actually expended in an individual project.

b. Albeit in a different context, the Licensing Board faced the question of the independent utility of the transfer of 300 spent fuel assemblies from Oconee to McGuire.¹¹ It found no such utility to attach to the "Cascade Plan" as a whole (and, thus by implication, to attach to any

¹⁰12 NRC at 471.

¹¹In 1975, the Commission announced its intention to prepare a generic environmental impact statement on spent fuel disposal. Pending the completion of that generic statement, licensing

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portion of it). 12 NRC at 479-84. While not all of the Board's discussion of the point is fully clear to us, it would appear that central to its finding is the fact that the movement of spent fuel between the applicant's various facilities does not constitute a permanent solution to this applicant's waste storage problems. In this connection, the Board observed that the removal of spent fuel assemblies from Oconee "is accomplished only at the expense of prematurely using up equivalent spent fuel storage space at the McGuire facility. This multiple transshipment process goes on and on, involving the premature using up of storage space at Catawba and possibly the Perkins and Cherokee facilities as well." *Id.* at 482-83. Further, it noted that a "nuclear waste transportation and transshipment program" does not either (1) have "the independent utility of increases in or enlargement of the onsite storage capacity of reactor spent fuel pools" or (2) "operate to reduce or eliminate radioactive waste." *Id.* at 483.

This all may well be true. But it scarcely follows from such considerations that the now-proposed Oconee to McGuire shipments would be devoid of inherent usefulness. Nor is there any reason to conclude that, by authorizing those shipments, the Commission perforce would be foreclosing a rejection of any subsequent application to transport spent fuel assemblies from one Duke facility to another.

The introduction to the relatively recent generic environmental impact statement on the handling and storage of spent fuel (see fn. 11, *supra*) reflects that the waste disposal problem confronting nuclear power plant operators stems from the limited storage capacity of on-site reactor spent fuel pools (taken in conjunction with the unavailability of offsite storage repositories).¹² As matters now stand, when the exhaustion of that capacity approaches the plant operator likely will have no more than four choices: expansion of the spent fuel pool's storage capability by reracking or some other means; building of an independent spent fuel storage installation

action designed to ameliorate the consequences of a possible shortage of spent fuel storage capacity was to be based upon a weighing and balancing of five factors. — including that of independent utility. 40 *Fed. Reg.* 42801, 42802 (September 16, 1975); *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 269-70 (1979).

The Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel (NUREG 0575) was issued by the staff in August 1979. At the time of the Licensing Board's decision in the present case, however, the Commission had not as yet acted on the statement. Hence, that Board considered each factor. 12 NRC at 476-88.

On February 23, 1981, the Commission published a notice to the effect that the issuance of the GEIS "represents final Commission action with respect to that document" and that "the five-factor test ... is no longer applicable to proposed licensing actions relating to spent fuel handling and storage." 46 *Fed. Reg.* 14506, 14507. In these circumstances, we need not decide whether the Board below correctly applied the factors. Although we still must inquire into the matter of the independent utility of the sought license amendment, as discussed in the text it is for a discrete purpose.

¹²See also EIA, p. 1.

(ISFSI) either on-site or off-site; transportation of the spent fuel to another of its facilities; and shutdown of the plant for want of an ability to off-load the spent fuel then in the reactor core.

In any particular case, not all of the first three alternatives may be practicable. For example, it may not be possible to enlarge further the capacity of the existing spent fuel pool (especially if it has previously been expanded). Similarly, there may be timing or economic obstacles in the path of construction of an ISFSI. And, obviously, an operator could not resort to the movement of the spent fuel between facilities unless it in fact had multiple nuclear plants and adequate unused storage space at the receiving station.

But, where available, each of these alternatives had manifest independent utility. Whether or not it provides a long-term benefit, it most assuredly offers a significant near-term one. If nothing else it enables the reactor to remain in operation.

This does not mean that an application for a license amendment to allow, *e.g.*, transportation between facilities must be invariably granted. In common with any other proposal for handling spent fuel beyond the existing capacity of the on-site pool, it must, *inter alia*, undergo and survive an environmental analysis. The significance of the independent utility of a particular proposal is simply that, for NEPA purposes, the environmental analysis may be confined to that proposal.

It is equally apparent that the outcome of the license amendment application at hand portends nothing insofar as any future application of this or another plant operator is concerned. Should Duke (pursuing the "Cascade Plan") seek at some future date permission to make further spent fuel shipments between its facilities, the request will have to receive a separate environmental assessment. That assessment will not be influenced by, let alone turn upon, how the present application might have fared. Rather, the initial inquiry will be into whether those further shipments will have a significant environmental effect. Should that question be answered affirmatively, a full environmental impact statement will be required in order to comply with the Section 102(2)(C) mandate. In that statement, the staff will, of course, have to identify and weigh the benefits and costs of the proposal in the context of the overall waste disposal situation then obtaining. In doing so, it might well conclude, upon a consideration of all factors, that the proposed additional shipments are an unacceptable solution.¹³

¹³ We are cognizant of the Licensing Board's suggestion that, by confining its environmental assessment to the 300 spent fuel assembly shipments, the staff may have overlooked

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B. Having determined that the staff was under no NEPA obligation to consider the entire "Cascade Plan" in its environmental assessment of the specific proposal before it, we proceed to the next question: Was that assessment comprehensive enough in scope and, if so, did it justify the conclusion of the staff that the shipment and handling of the 300 spent fuel assemblies would not have significant environmental effects.

The staff was required by Commission regulation to include in its environmental impact appraisal: "(1) a description of the proposed action; (2) a summary description of the probable impacts of the proposed action on the environment; and (3) the basis for the conclusion that no environmental impact statement need be prepared." 10 CFR 51.7(b). Examination of the appraisal reflects that it covers the environmental effects of the various activities associated with the proposal. In an analysis running some 100 pages, the staff, *inter alia*, looked at the McGuire site; the operation of the McGuire spent fuel storage facility; the motor carrier transportation of 300 spent fuel assemblies from Oconee to McGuire in special casks; the possible sabotage of spent fuel in transit; the likelihood and possible consequences of a transportation accident; and the handling of the transported fuel assemblies at destination.

As the Licensing Board saw it, the appraisal had several serious defects. 12 NRC at 517. One of them — the failure to consider the full "Cascade Plan" — needs no further discussion. Nor, for reasons that will later appear, is there occasion to dwell at this juncture upon the Board's perception that the appraisal did not properly evaluate alternatives to the proposal. Rather, what must be now scrutinized is the Board's view that

"cumulative environmental impacts" which might be associated with the "Cascade Plan" as a whole. 12 NRC at 486. Assuming the possible existence of such impacts, they would have to be considered when and if the applicant seeks permission to carry out another segment of the Plan. The Licensing Board did not, however, illumine what it thought to be potential cumulative effects of spent fuel movements over a period of time. And, given our conclusion see pp.317-319, *infra*) that the 300 shipments hereinvolved (to take place over a relatively protracted period) will be without environmental significance, no basis exists for concern on this score.

The situation here is thus quite different from that in *NRDC v. Callaway*, 524 F.2d 79 (2nd Cir. 1975) — which is claimed by NRDC to be "the case perhaps most directly on point" (Br. p. 20). There, the Navy proposed to dredge a channel and to dump 2.8 million cubic yards of "highly polluted" material at a specific location in Long Island Sound. The court held that, in its environmental impact statement, the Navy was obliged to evaluate the cumulative effects of that project and several other pending proposals for dumping similar material in the same general area. As the court pointed out, "[t]he combined spoil from these proposed projects and from the Navy's project totals approximately 5 million cubic yards. Were it all to be dumped within the next 5 years at the New London site the amount would far exceed the average of approximately 250,000 cubic yards dumped there annually prior to 1972." 524 F.2d at 87.

the appraisal was "inadequate in [its] consideration of reasonably predictable environmental impacts." *Ibid.* ¹⁴

1. NEPA does not refer to environmental impact appraisals, let alone set forth detailed criteria by which the adequacy of a particular appraisal is to be judged. Nor are such criteria found in the Commission regulation concerned with the content of EIAs (10 CFR 51.7(b)). As the District of Columbia Circuit has observed, however, the function of the appraisal is to supply "convincing reasons" why an action "with 'arguably' potentially significant environmental impacts does not require a detailed impact statement." *Maryland-National Capital Park and Planning Comm'n v. U.S. Postal Service*, 487 F.2d 1029, 1039 (D.C. Cir. 1973, Leventhal, J.). Thus, to pass muster the appraisal should (1) reflect that "a hard look [was taken] at the problem, as opposed to bald conclusions, unaided by preliminary investigation"; (2) "identify the relevant areas of concern"; and (3) "make a convincing case that the impact is insignificant." *Id.* at 1040.

2. Our independent review of the EIA at hand satisfies us that it fulfills these requirements insofar as (to use the phraseology of the Board below)¹⁵ the "reasonably predictable environmental impacts" of the transportation of the 300 spent fuel assemblies are concerned.

In determining otherwise, the Licensing Board pointed to the possible environmental consequences of a vehicular accident or attempted sabotage involving the truck carrying the spent fuel. 12 NRC at 489-90; 497-99. These contingencies were explored in the EIA, which concluded (at pp. 17-19, 33-37) that, should they materialize, there would not be a significant resultant environmental impact. Accordingly, at bottom we are confronted with a difference of opinion between the staff and the Board as to the substantiality of the basis for that conclusion.

The Board assumed that the 300 shipments would be made at the rate of 25 per month over a 12-month period. Consequently, "every day for a

¹⁴The Board also faulted the appraisal for failing to "analyze and adequately consider" the "political and social impacts" of the proposed shipments. 12 NRC at 493. Contrary to that Board, however, we do not find any such duty to have been imposed upon the staff by the Commission's 1975 notice of intent to prepare a generic environmental impact statement on spent fuel storage (see fn. 11, *supra*). Our reading of that notice is that the Commission intended such impacts to be "examined in a broader context" than individual licensing proceedings "from the standpoint of longer range policy." 42 *Fed. Reg.* at 42802. At least this much is clear: neither expressly nor by necessary implication did the Commission direct that, in analyzing a particular spent fuel storage proposal, the staff take into account political or social implications in addition to the effect implementation of the proposal would have upon the environment.

¹⁵See p. 311, *supra*.

six-day work week for a year, a large truck loaded with a spent fuel cask carrying radioactive materials will pass each house, building or establishment located on that highway."¹⁶ 12 NRC at 489. According to the Board, "such an unusual concentration of shipments in a period of one year might or could intensify some of the risks and problems associated with the transportation of high-level radioactive waste or spent fuel." *Id.* at 490. In this connection, the Board pointed to the historical record of two reported highway accidents in 3,600 spent fuel shipments. Employing these data, it found that there was one chance in six of a highway accident in the course of the 300 shipments of current interest. *Id.* at 490. fn. 117.

It is fair inference that (apart from the perceived sabotage threat) it was solely this accident possibility which undergirded the Board's transportation concern. (The Board found that the radiation exposure associated with "routine" transportation of the spent fuel would be so small as to give rise to no unacceptable health effects. 12 NRC at 505-09). But acceptance for present purposes of the Board's calculation regarding the degree of probability of an accident¹⁷ does not perforce justify that concern.

The Board implicitly made the further assumption that the occurrence of an accident was to be equated with the release of radioactive materials and, thus, with radiation exposure beyond that which attends upon uneventful transportation. We are told by the staff (Br. p. 30), however, that neither of the two prior accidents produced any release of radioactive materials. More significantly, is emphasized in the EIA (at pp. 16-17), spent fuel assemblies must be transported in specially designed and manufactured casks which offer a high degree of protection against the release of radioactivity in the event of an accident.¹⁸ Specifically, the casks must comply with the stringent safety and other requirements which have already been prescribed by the Commission (10 CFR Parts 71 and 73). Beyond that, spent fuel shipments must also comply with Department of Transportation requirements covering the packaging and movement of radioactive materials (49 CFR Parts 171-79).

Recently, that Department completed an exhaustive thirty-month study of the transportation of radioactive materials.¹⁹ On the basis of this study, including documented risk studies and past accident experience for radioactive material transport, that agency concluded that the public risks

¹⁶ These casks weigh about 25 tons and are 18 feet in length (App. Exh. 29 at p. 1, Tr. 4342) and must be constructed to meet stringent Commission requirements. See pp. 318, *infra*; EIA, pp. 16-17.

¹⁷ Needless to say, without knowing more about the circumstances surrounding the two reported accidents (including such factors as location and prevailing road and climatic conditions), it is difficult to assess the reliability of the premise that, on the average, 1800 spent fuel shipments will produce one highway accident.

¹⁸ EIA, pp. 33-37.

¹⁹ 46 *Fed. Reg.* 5298-99 (January 19, 1981).

in transporting such materials by highway were too low to justify the unilateral imposition by local governments of total prohibitions or restrictions upon motor carrier utilization. At the same time, it confirmed that the packaging requirements were adequate to protect the public.²⁰

On the matter of the possible sabotage of a spent fuel shipment, for a variety of assigned reasons the EIA (at pp. 17-19) found that it would be most difficult to breach the cask. Moreover, a year ago the Commission imposed by rule new routing and physical security requirements on spent fuel shipments. 10 CFR 73.37. In doing so, the "Commission reaffirm[ed] its judgment that spent fuel can be shipped safely without constituting unreasonable risk to the health and safety of the public."²¹

3. In addition to focusing upon the environmental consequences of an untoward occurrence in the course of transporting the spent fuel assemblies, the Licensing Board addressed the possibility of an accidental drop of a cask during handling at the McGuire facility. At that facility, fuel loading or unloading takes place in a specially constructed rectangular water-filled cask pit located adjacent to the spent fuel pool.²² The pit is separated from the pool by a 3-foot thick wall and is 9 feet wide measured from that wall (App. Exh. 27, Sketch #3). In unloading operations, the 18-foot long cask is moved into the pit area by means of an overhead crane. While over the pit (the crane is prevented by physical stops from moving beyond the pit to the area of the pool), the cask is lowered to the pit bottom where it is fully submerged. The cask is opened and the fuel is then removed and transferred under water by a second crane into the pool through a slot in the wall between the pit and the pool (Tr. 4319-29). To assure that water will not be lost in the pool in the event of damage to the pit, the slot is blocked by a gate which can be opened to allow the passage of spent fuel (Final Safety Analysis Report, 3.8-27a. Revision 9). During and after its removal from the cask, the spent fuel is always kept under water.

No one disputes that, if an accidentally dropped cask were to land in the pit, no health and safety or environmental consequences would ensue. Intervenor CESH postulated, however, a series of events which it claimed might lead to the cask striking and rupturing fuel elements stored in the pool. More specifically, according to CESH, a cask might (1) drop near the far side of the pit (the side away from the pool); (2) strike the edge on that side; and (3) then topple over the 3-foot thick wall into the pool (CESH Exh. 13).²³

²⁰ *Id.* at 5299.

²¹ 45 *Fed. Reg.* 37403 (June 3, 1980).

²² In the ensuing discussion, the terms "pit" and "pool" refer, respectively, to the cask pit and the spent fuel storage pool.

²³ Intervenor NRDC did not raise the cask drop issue below and has not taken a position on it before us. Rather, it has been pressed throughout by CESH alone.

In response to this concern, the applicant presented evidence to the effect that, even were a dropped cask to strike the far side edge of the pit, it would not ultimately fall into the pool. See 12 NRC at 510. Nonetheless, to provide an additional measure of safety, the applicant proposed the establishment of certain administrative controls designed to remove any possibility of a dropped cask falling into the pool. These controls would require the crane operator to follow a designated path in moving the cask in and out of the pit area. That path would pass over the far side of the pit near its end so that, should the cask drop at that point, it would strike the corner formed by that side and the end side of the pit and, if it then toppled, would fall inward into the pit (App. Exh. 29, Sketch #4). The staff agreed with this proposal and affirmatively stated that it would be adopted as a license condition (Staff Exh. 33).

Neither CESC nor the Licensing Board has assigned any good reason — and none is apparent — why such a license condition (which we hereby direct be imposed) will not provide adequate assurance that a cask will not be accidentally dropped into the pool.²⁴ That being so, we find it unnecessary to dwell at length upon the Board's finding that such an occurrence might be expected to have serious consequences in terms of radioactive releases. 12 NRC at 513. We are constrained to note, however, our difficulty with that finding — which seems plainly unsupported by the record.

As the Board appears to have recognized, the drop of a cask into the pool would not have a significant effect upon either facility personnel or the general public unless it gave rise to a "criticality accident." *Ibid.* Our attention has been called to no evidence which suggests that the rupture of spent fuel assemblies installed in the pool would produce criticality. Even if (the staff's calculations to the contrary notwithstanding²⁵) criticality might result from the impact of a dropped cask on *fresh* fuel, the record establishes that such fuel is not normally stored in the pool during spent fuel transfer operations (Tr. 4777-78). Moreover, for criticality to occur, in all events the concentration of boron in the pool would have to fall

²⁴ CESC claimed below that it was "not certain" that the control over the path of crane travel would "provide a sufficient safeguard." It argued that an "excess of travel along the final portion of the proposed path might reasonably be expected to deform the handrail" running along the far side of the pit "making a tipping accident possible." CESC's Exh. 13, p. 5. But our examination of the matter satisfies us that there is sufficient clearance between the cask (following the path) and the handrail that the cask will not come in contact with the handrail. In the circumstances, we do not understand how such a "tipping accident" is possible. See Exh. 29, Sketch #4.

²⁵ See 12 NRC at 512.

"significantly" below specified limits. 12 NRC at 512-13. At Oconee, where the concentration level must be checked at least twice weekly, the limits have always been met (Tr. 5081-82). The McGuire pool is similar to that at Oconee (Tr. 5082) and presumably is subject to the same boron surveillance practices.

In sum, the disclosures of record, many of which are cited in the Licensing Board's decision, compel the finding that there is a vanishingly small possibility of a cask drop accident with consequential environmental impact.²⁶

4. In reaching its conclusion that the preparation of a full environmental impact statement was unnecessary, the EIA thus did not overlook any "reasonably predictable environmental impacts" associated with the proposed transfer of 300 spent fuel assemblies between the two facilities. The short of the matter is that (1) if carried out without incident, that transfer will have (as the Licensing Board itself recognized) negligible environmental effects;²⁷ and (2) the possibility of an untoward event at any point in the course of the transfer with accompanying serious environmental consequences is extremely remote.

It is beyond dispute that an environmental impact statement need not consider "remote and highly speculative consequences." See *e.g.*, *Trout Unlimited v. Morton*, *supra*, 509 F.2d at 1283, quoted in *Public Service Electric and Gas Co.* (Hope Creek Generating Station, Units 1 and 2), ALAB-518, 9 NRC 14, 38 (1979). It perforce follows that asserted consequences of that stripe do not trigger the obligation to prepare an EIS.

It also follows from the absence of any "reasonably predictable environmental impacts" that we need not pass judgment here upon the Licensing Board's discussion of alternatives to the spent fuel transfer proposal. On this score, our decision in the *Trojan* spent fuel pool expansion proceeding²⁸ is directly in point. We there expressly held that neither Section 102(2) (C) nor Section 102(2)(E)²⁹ of NEPA obligates the federal agency "to search out possible alternatives to a course which itself will not

²⁶ For the purposes of this discussion, we have accepted the Licensing Board's apparent implicit assumption (without explanation of its basis) that there is a reasonable possibility that a cask will be accidentally dropped. In actuality, however, that assumption is questionable. The crane's load capacity is 125 tons (almost five times the weight of a filled cask) and its cable and mechanical components (*e.g.*, gears) are designed to withstand five times that load capacity (Tr. 4342). In that circumstance, the likelihood of a cask breaking free from the crane would appear slight indeed.

²⁷ Before us, NRDC Counsel had this to say on the matter: "I don't believe, and I don't contend that this record establishes that there is any substantial environmental impact associated with 300 shipments of spent fuel assemblies." App. Tr. 84.

²⁸ *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263 (1979).

²⁹ 42 U.S.C. 4332(2)(E). That Section directs federal 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."

either harm the environment or bring into serious question the manner in which this country's resources are being expended." 9 NRC at 266. *Accord, Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 457-58 (1980); *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station, Unit 1), ALAB-650, 14 NRC 43, 65 fn. 33 (July 17, 1981). To our mind, it simply cannot be seriously contended that the transportation by motor carrier of 300 spent fuel assemblies over the 170-mile distance separating Oconee and McGuire presents a substantial national resources commitment question.

II. ATOMIC ENERGY ACT CONSIDERATIONS

In addition to rejecting the requested license amendment on NEPA grounds, the Licensing Board made these ultimate safety findings:

1. There is not a reasonable assurance that the activities authorized or encompassed by the license amendment can be conducted without endangering the health and safety of the public.
2. The issuance of the license amendment could be inimical to the health and safety of the public.

12 NRC at 516. Regrettably, however, the Board did not indicate precisely on what foundation those findings rested.

We have previously stressed the importance that initial decisions explicate the basis for each crucial determination contained therein. See *e.g.*, *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 41 (1977). Where this has not been done, it is open to us to remand the cause to the Licensing Board to enable it to provide the missing explanation. But here it is not necessary to pursue that course.

To repeat what has previously been said, the Licensing Board did not find (and no one claims before us) that the uneventful transfer of the spent fuel assemblies from Oconee to McGuire would pose a radiological health and safety threat to the public. Thus, the Board must have had in mind the several accident and sabotage possibilities which we have already addressed. But, as has been seen, it is extraordinarily improbable that any of the postulated unusual occurrences would have a significant radiological effect. This being so, none of them can serve to support a determination that the safety standards of the Atomic Energy Act and the Commission's implementing regulations will not be met. See Sections 104d and 182a of

the Atomic Energy Act, 42 U.S.C. 2134(d) and 2232(a); 10 CFR 70.31(d).³⁰

For the reasons above stated, the Licensing Board's October 31, 1980 initial decision is *reversed*. The Director of Nuclear Reactor Regulation is authorized to issue the license amendment in question, subject to the imposition of the condition referred to at p. 320, *supra*.

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Bishop
Secretary to
the Appeal Board

³⁰ NRC licensees are required to "make every reasonable effort to maintain radiation exposures, and releases of radioactive materials in effluents to unrestricted areas, as low as is reasonably achievable." 10 CFR 20.1(c). The Licensing Board read this requirement to mandate a comparison of the radiation exposure associated with the spent fuel transfer proposal at bar with that which would attend upon alternative means of handling and storing such fuel. 12 NRC at 501.

Although the comparison then made by the Board did not enure to the disadvantage of its proposal (*id.* at 503), the applicant nevertheless asks us (Br. p. 121) to hold that the Board below misconstrued Section 20.1(c) and that, in the present circumstances, it was not necessary to examine the radiological effects of alternatives. We decline, however, to render what would be essentially an advisory opinion on that question. There will be time enough to reach it when and if it arises in a non-academic context.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**John F. Wolf, Chairman
Glenn O. Bright
Dr. Jerry Kline**

In the Matter of

**Docket Nos. 50-275 OL
50-323 OL**

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

August 4, 1981

The Licensing Board rules on contentions asserted by Joint Intervenor's in connection with their petition for reopening the full-power licensing proceeding for the plant. The Board admits a contention on emergency planning but denies intervenor's other contentions as not meeting the requirements of the Commission's order of April 1, 1981 (CLI-81-5) for reopening a record which has been closed, as not presenting litigable issues, as not presenting an issue which has already been decided, or as too general to be accepted for purposes of litigation.

MEMORANDUM AND ORDER

Pursuant to an Order issued May 27, 1981, a Conference of Counsel in this matter was held on July 1, 1981. The parties discussed Joint Intervenor's Statement of Clarified Contentions dated June 30, 1981. The Board took under advisement the question of the admissibility of the contentions. Proposed hearing schedules were also discussed. The Board is refraining from adopting a schedule of hearings until the NRC staff issues an SER Supplement covering matters discussed in contention 14, herein.

The Board's determination of the admissibility of the Joint Intervenor's "clarified" contentions follows:

Contention 1 (as restated by the Board)

PG&E and the combined onsite, state and local emergency response plans and preparedness do not comply with 10 CFR 50.33(g); 50.47 and revised Appendix E to Part 50.

Joint Intervenors filed a motion to reopen the full-power licensing proceeding based in part on emergency planning issues on May 9, 1979 shortly after the accident at TMI. The Staff concluded in the Conference of Counsel held July 1, 1981 that the motion was timely filed after the accident (Tr. 11386). The Board agrees.

The Board admitted an emergency planning contention in the low-power test hearings held May 19-22, 1981 but limited issues to those relevant to low-power testing. Staff and Applicant argued in that proceeding that while full compliance with the new emergency planning regulations would not be in effect at Diablo Canyon such compliance was not needed because of the reduced risk to the public associated with low-power testing. Full compliance with the NRC's new regulations for full-power operation has therefore not been previously litigated in this proceeding.

The new regulations and the requirements contained in NUREGs-0737 and -0694 constitute significant new information on emergency planning which was not available during previous full-power hearings. This new information could have caused a different result had it been considered originally. 10 CFR 50.47c(1) states that "Failure to meet the standards set forth in paragraph (b) of this section may result in the Commission declining to issue an operating license ..." The conditions for reopening the full-power proceeding as restated by the Commission in CLI-81-5, p. 6, have therefore been met on this issue.

At the Conference of Counsel held July 1, 1981 Joint Intervenors submitted a statement of clarified contentions which provided sufficient specificity and basis to the emergency planning contention to place the applicant on notice as to the subjects it would be required to defend.

The Board concludes that the requirements for reopening the full-power proceeding for the purpose of hearings on emergency planning have been met. The emergency planning contention is *admitted*.

Combined Contentions 2 and 3: Hydrogen

This contention asserts that the Diablo Canyon hydrogen control system is based on the assumption that the amount of fuel cladding that would react chemically to produce hydrogen would under all circumstances be limited to less than 5 percent. The TMI accident demonstrated that this assumption is not valid since as much as 50 percent of the cladding at TMI reacted to form hydrogen.

Other assertions claim that the Applicant has not demonstrated that hydrogen will not combust, that systems important to safety can withstand conditions resulting from hydrogen combustion, and that offsite radiation releases in excess of 10 CFR 100.11(a)(2) will be prevented.

Joint Intervenors make a number of assertions in this contention but they have not provided the Board with any new significant factual information regarding hydrogen generation as would be required by the Commission Order of April 1, 1981 (CLI-81-5) to reopen a record which has been closed. The matters addressed are not required by NUREG-0737.

Furthermore, on matters related to hydrogen generation in excess of the criteria of 10 CFR 50.44 the Commission has specifically ruled 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.” [11 NRC 674 (1980)].

Joint Intervenors have not supplied information of any kind which could be interpreted as a credible loss of coolant accident scenario. This contention is therefore *denied*.

Contention 4: Decay Heat Removal

Joint Intervenors contend that the Staff has failed to address the shutdown decay heat removal issue in a SER supplement.

Decay heat removal is a new unresolved generic safety issue (Task A-45) that was published in March 1981 in NUREG-0705. There is no requirement that new issues be published in a SER each time a generic problem is developed. There is therefore no basis for admitting this contention in the absence of significant new factual information which Intervenors have not provided. We note that NUREG-0705 provides a description of the problem and the means by which the Staff is addressing it. This contention is *denied*.

Combined Contention 8 and 9: Relief and Block Valves

Joint Intervenors contend that the present classification of Diablo Canyon relief valves and associated block valves, instruments and controls does not comply with 10 CFR 50, Appendix A, Criterion 1, 10 CFR Part 50, Appendix B, Reg. Guide 1.26 and SRP (Reg. Guide 1.70) Section 3.22.

Joint Intervenors also contend that general design criteria 1, 14, 15 and 30 are violated because relief and block valves have not been qualified under all transient and accident conditions.

Joint Intervenors have not supplied new significant factual information which would raise serious questions concerning the safety or operability of relief or block valves at Diablo Canyon. This contention stands therefore as a bare allegation which at this stage of the proceeding is insufficient to require reopening the record on this issue. (CLI-81-5.)

The Board heard evidence on valves in the low-power test proceeding held May 19-22, 1981. The Board limited the issues in that hearing to the question of when block valve testing should be completed. This limitation perhaps leaves the door open to hear a factually supported contention on valves in a reopened full-power proceeding. However, in order to do so Joint Intervenors would need at least some new information to show why valves are likely to fail or are otherwise unreliable at full power. They carry a burden to bring forward new information if they have it at this stage of the proceeding. No such information has been provided.

The Board, however, has received a notification from the Staff that the EPRI valve testing program has been delayed. Relief valve and safety valve testing was not completed by July 1, 1981 as required by NUREG-0737, Item II.D.1. While some tests may be completed by October 1, 1981 others may be delayed for up to eight months. (BN 81-15 dated July 16, 1981 and Staff Counsel letter to Board dated July 24, 1981.) In its decision of July 17, 1981 the Board anticipated that this testing would be completed prior to fuel load.

These notifications do not change our views on this contention since the Staff plans to bring the change in program completion dates to the Commission as a generic NUREG-0737 action item. Prior to any change in Commission policy, however, the Board continues to expect that the Staff will implement current licensing requirements related to valve testing. The contention on valves is *denied*.

Contention 10: Reactor Vessel Level Instrumentation System

This is a specific requirement of II.F.2 of NUREG-0737. Joint Intervenors contend that the RVLIS to be installed at Diablo Canyon is deficient in a number of respects: it is still under development; it may provide erroneous or ambiguous readings under some dynamic conditions; it may not comply with single-failure criteria; it is not qualified for seismic conditions; and it is not in full conformance with the Staff's isolation criteria. It will therefore not provide an unambiguous, easy-to-interpret indication of inadequate core cooling.

Section II.F.2 of NUREG-0737 is entitled "Instrumentation for Detection of Inadequate Core Cooling". Knowledge of the water level in the core is considered to be very important, and for this reason a water-level measuring device is required to be installed in all reactors by January 1, 1982. The basic thrust of II.F.2 is, however, on detection of inadequate core cooling, and for this purpose a multi-component system is required of which a water-level indicator is only a part. Implicit in this requirement is a realization by the Commission that no one instrument can be depended upon to provide the necessary information under all conditions. The water-level indicator does not bear the entire burden of determining inadequate core cooling and it is not required to.

Joint Intervenors appear to believe that the RVLIS must be the primary instrument in detecting inadequate core cooling because of the standard set forth in 10 CFR §50.55a(h) which requires that instrumentation should directly measure the desired variable. The Board would note that 50.55a(h) applies to protective, rather than monitoring instrumentation, and also does not apply to reactors which were issued construction licenses prior to January 1, 1971. (Diablo Canyon Unit 1 issued in April, 1968, and Diablo Canyon Unit 2 issued in December, 1970). In any event, the application of IEEE 279, §4.8 (the requirement in 50.55a(h) only required direct measurement of variables "To the extent feasible and practical ...". Joint Intervenors do not maintain that there is any feasible and practical method to measure water level directly under all conditions, but only that RVLIS may not do so.

Joint Intervenor's concerns concerning single-failure criteria, seismic qualification and isolation criteria are addressed directly in NUREG-0737, pp. 3-114 and 3-115 under (7) and (8). These are requirements which must be complied with before acceptance of the RVLIS.

As explained above, the Board finds that the Joint Intervenors have presented no genuine issue to be litigated. The contention is therefore *denied*.

Contention 11: Small-Break LOCA Analysis

This contention is almost word for word the Joint Intervenors' Contention 14 which the Board considered in the proceedings on low-power operation. The contention was denied in the Board's Prehearing Conference Order of February 13, 1981. We can find no reason presented by the Joint Intervenors to change our former decision. Contention 11 is therefore *denied*.

Contention 14: Environmental Qualification of Safety-Related Electrical Equipment

The Board has determined that this contention does not encompass a NUREG-0737 requirement, but is based on necessary conformance with General Design Criteria, Regulatory Guides and other Staff requirements.

The first part of the contention points out "... significant deficiencies in the qualification of Diablo Canyon equipment ...", which were obtained from a June 10, 1981 letter from PG&E to the NRC Staff. This letter, as the Board understands it, was in the nature of a report from PG&E to the Staff on the status of their qualification effort. With this information as a basis, Joint Intervenors first allege that "... the Diablo Canyon safety-related electrical equipment is not capable of maintaining functional operability under all service conditions during the installed life for the time it is required to operate ...", and, later, that "Diablo Canyon should not be permitted to operate until all safety-related electrical equipment has been demonstrated to be qualified to operate as required by the GDC".

The Board agrees in part with the sentiments expressed by the Joint Intervenors. It is obvious that as of June 10, 1981 not all Diablo Canyon electrical equipment had been fully qualified. The Board, however, expects that Diablo Canyon will not be permitted to operate until the safety-related electrical equipment has been qualified in accordance with the mandates of the various general design criteria, as required by regulation. Having said this, the Board does not see herein a litigable issue set forth. This part of the contention is therefore *denied*.

Joint Intervenors also contend that the Staff has failed to determine that environmental qualification of Class 1E electrical equipment for full-power operation is adequate, and that the Staff has not determined the adequacy of the radiation qualification of safety-related equipment. Joint Intervenors are quite correct in this assertion. The Staff has stated (SER, Supp. 13, p. 7-1; SER, Supp. 14, p. 3-8) that the Staff evaluation of these matters will be presented in a following SER supplement. The Board, therefore, will allow Joint Intervenors, if they so desire, to file a contention on these matters setting forth specific areas of inadequacy in the Staff's evaluation to be contained in a forthcoming SER supplement. The contention will be due fifteen days after service of the SER supplement.

Contention 15 and 16: Systems Interaction

Joint Intervenors contend that Diablo Canyon cannot be granted an operating license until PG&E demonstrates that structures, systems and components important to safety will not be prevented from operating and performing their intended functions as a result of interactions with non-safety-related systems. The Board has determined that this is not an explicit requirement of NUREG-0737.

To establish a basis for their contention, Joint Intervenors cite letters written by NRC personnel to persons both within and without the Commission concerning a need for system interaction analyses. They also cite a PG&E study on seismically-induced interactions, in which some 677 interactions were identified. They then conclude that no license should be granted to Diablo Canyon until all adverse interactions between safety and non-safety systems are identified and remedied.

The Board is not aware of any requirement in the regulations for this kind of comprehensive study. Even the seismically-induced interaction study by PG&E was undertaken at the specific request of the Staff and the Advisory Committee on Reactor Safeguards, in recognition of the fact that Diablo Canyon is located in an area of known seismicity. No special circumstances have been established by the Joint Intervenors, and no specific interactions have been identified.

The Board finds that this contention is too broad and non-specific to be accepted. The contention is *denied*.

Contention 17: Documentation of Deviations

Joint Intervenors contend that the NRC Staff has (i) failed to require PG&E to document in the FSAR where Diablo Canyon design, structures and components deviate from current regulatory practices (i.e., regulatory guides, Branch Technical Positions and Standard Review Plans) and the basis for and acceptability of those deviations, and (ii) failed to set forth in the Safety Evaluation Report the standards against which Diablo Canyon has been reviewed and the basis for any deviations approved by the Staff from current regulatory practices.

Joint Intervenors cite the accident at TMI and several documents which were prepared in the aftermath of the accident in support of this contention. (Rogovin Report, Kemeny Report and others).

The Board finds that neither the accident at TMI nor the analyses which followed now constitute new information which would alone justify reopening a closed record. The analyses which followed the accident indicate that the Commission has considered it in detail for the purpose of licensing. NUREG-0737 is the Commission response to this consideration. The Commission has stated that: "... current operating license applications

should be measured by the NRC Staff against the regulations, as augmented by these requirements." (CLI-80-42, Dec. 18, 1980, p. 6.)

Joint Intervenors Contention 17 would establish a requirement which is not found either in the Commission regulations or in NUREG-0737. Neither is new significant factual information supplied which could reasonably lead to a conclusion of improved safety if this proposed requirement were implemented.

In view of the foregoing we conclude that this contention is nothing more than a generalization regarding the Intervenor's views of what applicable policies ought to be. This requires rejection under the criteria established in *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3, ALAB-216, 8 AEC 13, 20-21 (1974)). Contention 17 is *denied*.

ORDER

On this 4th day of August 1981 it is

ORDERED

That the following contention will be litigated by the parties: PG&E and the combined onsite, state and local emergency response plans and preparedness do not comply with 10 CFR 50.33(g); 50.47 and revised Appendix E to Part 50.

That discovery will begin immediately.

ATOMIC SAFETY AND LICENSING BOARD

John F. Wolf, Chairman
ADMINISTRATIVE JUDGE

Glenn O. Bright
ADMINISTRATIVE JUDGE

Jerry Kline
ADMINISTRATIVE JUDGE

Issued and entered at
Bethesda, Maryland.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Michael A. Duggan
Robert M. Lazo
Ivan W. Smith, Alternate

In the Matter of

Docket No. 50-389A

FLORIDA POWER & LIGHT COMPANY
(St. Lucie Plant, Unit No. 2)

August 5, 1981

The Licensing Board denies an untimely petition for leave to intervene in this antitrust proceeding upon balancing the factors in 10 CFR 2.714(a)(1); the Board denies the petition also for lack of a nexus between petitioners' allegations and the proceeding.

RULES OF PRACTICE: INTERVENTION PETITIONS (ANTITRUST)

Where a late petition for intervention is involved, the special factors set forth in 10 CFR 2.714(a)(1) must be balanced and applied before the petition may be granted. These factors are: (1) Good cause, if any, for failure to apply on time. (2) The availability of other means whereby the petitioner's witness will be protected. (3) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record. (4) The extent to which the petitioner's interest will be represented by existing parties. (5) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

RULES OF PRACTICE: INTERVENTION PETITIONS (ANTITRUST)

A late petition for intervention shall not be granted if a remedy for the alleged harm is available before the Federal Energy Regulating Commission and petitioner has not shown how that remedy is insufficient.

RULES OF PRACTICE: INTERVENTION PETITIONS (ANTITRUST)

Under 10 CFR 2.714(a)(1), the test for intervention becomes increasingly vigorous as time passes.

RULES OF PRACTICE: INTERVENTION PETITIONS (ANTITRUST)

For purposes of intervention in an antitrust proceeding under the Atomic Energy Act, a competitor to an applicant for a license to construct and operate a nuclear plant normally need only allege the nature of its business and the existence of a situation inconsistent with the antitrust laws to show "nexus" since a nuclear plant would place it at a competitive disadvantage; such allegations by a non-competitor are not sufficient to show a "nexus" to the license proceeding.

MEMORANDUM AND ORDER Concerning Petitions For Leave To Intervene Filed By Parsons And Whittemore, Inc. And Resources Recovery (Dade County), Inc.

On April 24, 1981, Parsons and Whittemore, Inc. and Resources Recovery (Dade County), Inc. (hereinafter "RRD") filed a Petition for Leave to Intervene and Request for Hearing (Petition). This Memorandum and Order analyzes the merits of the Petition.

A conference of Counsel was conducted on July 20, 1981, for the purpose of considering the RRD Petition. At that conference, the parties argued the merits of this motion and responded to a series of questions posed in our Order of July 7, 1981.

RRD's Petition to intervene in this antitrust proceeding was filed after Florida Power & Light (FPL) refused to buy power or wheel power to third parties from an electrical generating facility (EGF) located in Dade County, Florida and controlled by RRD. The EGF is part of a plant designed to generate steam and electricity from waste. The plant was built by RRD for Dade County, which contracted to buy the entire plant and in a separate contract, agreed to reconvey the EGF to FPL.

Prior to the completion of construction of the plant, the project became mired in dispute, including federal court litigation, arbitration, filings before the Federal Energy Regulatory Commission, this proceeding and an incipient proceeding before the Florida Public Service Commission.

RRD argues that, as the result of this dispute, it is currently the owner of the EGF. It also claims that the facility is a qualifying small power production facility, covered by the Public Utilities Regulatory Policy Act of 1978 (PURPA), which was designed to encourage unconventional means of small power production. Under PURPA, RRD requested that FPL buy its power at FPL's "avoided cost" and that it wheel its power to third persons. However, FPL refused RRD's request for PURPA rights and contested its claim before FERC.

RRD argues that FPL's refusal was at the same time a violation of PURPA and inconsistent with the antitrust laws. In this proceeding, it seeks to intervene because of its antitrust concerns and its desire to impose on FPL license conditions favoring PURPA entities.

FPL argues that the EGF was built for it, that RRD has created the present situation by refusing to abide by its contractual commitments to Dade County, that there are specific contractual provisions prohibiting RRD from operating the EGF, that the EGF is not a qualifying facility under PURPA and that it has not violated PURPA nor committed an act that is inconsistent with the antitrust laws. It also argues that RRD has failed to allege a nexus between its complaint and the operation of St. Lucie 2 and that RRD has not met the criteria for intervention in this proceeding, concerning an application for a construction permit filed by FPL eight years ago.

I. THE APPLICABLE REGULATIONS

Under 10 CFR 2.714(a)(2), a petition for leave to intervene as a party

shall set forth with particularity the interest of the petitioner in the proceeding, how that interest may be affected by the results of the proceeding, including the reasons why petitioners should be permitted to intervene with particular reference to the factors in paragraph (d) of this section, and the specific aspect or aspects of the subject matter of the proceeding as to which petitioner wishes to intervene.

Paragraph (d) of §2.714 states:

[T]he Atomic Safety and Licensing Board designated to rule on petitions to intervene and/or requests for hearing shall, in ruling on a petition for leave to intervene, consider the following factors, among other things:

- (1) The nature of the petitioner's right under the act to be made a party to the proceeding.

- (2) The nature and extent of the petitioner's property, financial or other interest in the proceeding.
- (3) The possible effect of any order which may be entered in the proceeding on the petitioner's interest.

In addition to these factors, which are applied to any intervention petition, there are special factors that must be balanced and applied to late petitions. Those factors, found in §2.714(a)(1), 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.

II. CONSIDERATION OF FACTORS GOVERNING LATE INTERVENTION

Although the bulk of the effort expended by the participants has been related to the standing of RRD, we consider it more important to apply to this case the standards governing late intervention. On balance, we find that those standards require that RRD's intervention petition be denied. In this portion of the Memorandum, we shall discuss the application of those standards.

A. Other Means to Protect RRD's Interest

(1) Position of RRD

RRD's principal argument about the availability of other means to protect its interest is its statement that "petitioner's interest can be protected only by allowing them to be heard in the interrelated construction and operating licensing proceedings." (Petition at 8.) Petitioner also states that "the Commission has ample power to implement its statutory mandate to protect Petitioners' interest at this stage of the licensing proceedings." (*Ibid.*).

The Petition does not compare the remedy provided by Federal Energy Commission regulations to the remedy that might be provided in this proceeding. RRD does state that FERC regulations, at 18 CFR

§292.305(b)(1), provide that upon request of a qualifying facility, a utility:

shall provide (i) Supplementary power, (ii) Back-up power, (iii) Maintenance power, and (iv) Interruptible power.

(Petition at 5.) Furthermore, RRD informs us in its petition to intervene in the operating license proceeding for St. Lucie (OL Application), which it attached to its petition to intervene here, that:

Section 210 of PURPA [Public Utilities Regulatory Policy Act of 1978] seeks to encourage cogeneration and small power production. It does so by conferring upon Qualifying Facilities the right to sell their electrical output to an electric utility, to interconnect with a utility and to buy at retail from the utility electric power needed within the facility. The implementing regulations exempt Qualified Facilities from most utility-type regulations to encourage competitive entry by industrial concerns into the generation business. Congress enacted these PURPA provisions to overcome the reluctance of electrical utilities to do business with such Qualifying Facilities on an economically viable basis.

(OL Application at 4-5).

RRD is currently involved in a FERC proceeding. (July 20 transcript [Tr.] at 13.) It also is about to initiate a proceeding before the Florida Public Service Commission. (*Ibid.*)

RRD's apparent reason for believing that its FERC remedy is incomplete is its concern that a settlement agreement entered into between Staff, the United States Justice Department and FPL will adversely affect its PURPA rights. It states that "Petitioners' PURPA rights and their competitive interests will be directly impacted by the issuance of an operating facility license containing, or subject to, the conditions of the Settlement agreement." (OL Application at 8.)

(2) Position of FPL

FPL asserts that petitioner seeks to protect interests that arise under PURPA and not the Atomic Energy Act. Partial Response of Florida Power & Light Company, etc. (Response) at 29. It also states that PURPA contains provisions [16 U.S.C. §824; (Supp. III 1979)], which empower FERC to order any electric utility to provide transmission service upon the application of any qualifying small power producer.

At oral argument, FPL enlarged upon this position in the following language:

The reason [RRD] ... is not getting wheeling under the

[settlement] license condition is that we don't concede they're a qualifying facility [under PURPA]. If we conceded they were a qualifying facility or if someone found that they are a qualifying facility — and that someone clearly ought to be FERC — then something is going to happen pretty quickly. On the other hand, if we go through a year's worth of proceeding here and at the end of that time this Board concludes that people who are qualifying facilities are entitled to something a little different, if these people still aren't qualifying facilities they won't get anything out of that.

Tr. 58. In addition, the following dialogue occurred:

JUDGE BLOCH: I take it if there were an antitrust violation under PURPA, a refusal to deal, [FERC] ... would not be a forum for that aspect of it

MR. BOUKNIGHT (FPL): ... I think that the FERC's position is that under PURPA it can consider antitrust positions

(3) Conclusion

We conclude, based on the facts and argument before us, that RRD can seek complete relief for all its grievances from FERC. RRD has not shown us any aspect of the relief it seeks which could not be granted by FERC, which has the authority to require FPL to buy power from a qualifying small power producer, and to physically connect with and wheel power for qualifying small power production facilities. 16 CFR §824i and §824k. Furthermore, in reaching that determination, FERC is required to consider antitrust issues, so that any antitrust problems relevant to the case also can be considered by FERC. *See Gulf States Utilities Co. v. Federal Power Commission*, Dist. Col. 1973, 93 S.Ct.1870, 411 U.S. 747, 36 L.Ed. 635, rehearing denied 93 S.Ct. 2767, 412 U.S. 944, 37 L.Ed.2d 405.

In addition to the FERC remedy, RRD also is engaged in arbitration, which could completely resolve its problems. During the Conference of Counsel, we learned that RRD also is pursuing action before the Florida Public Service Commission. Since we were not informed what is at issue in that proceeding, it is possible that RRD's entire problem also could be cleared up there.

In short, RRD has a plethora of remedies and has not explained why it is in special need of intervening in this case.

We also agree with FPL that RRD appears to have brought this proceeding to protect interests that arise under PURPA rather than under the Atomic Energy Act. Petitioners explained their interest in intervention primarily in terms of PURPA. Petition 3-6; OL Petition 2-6. Indeed, as the following language indicates, the principal harm of which RRD com-

plains is that a partial settlement agreement previously approved by the Board in this case adversely affected their PURPA rights:

Petitioners contend overall, that FP&L has used the settlement process as part of a calculated effort to diminish qualifying facilities' benefits under PURPA, thereby weakening them competitively. This has occurred without prior notice to the affected qualifying facilities and without their participation or comment

Petition at 5; see also OL Petition at 7-9, 16-20.

However, RRD has not moved to reopen the question of whether or not the Board should approve the partial settlement agreement, which was reached by the Department of Justice, Staff and FPL. The Order approving the Agreement was issued on April 27, 1981, three days after RRD petitioned to intervene in this proceeding. Consequently, that Order has become final and even were RRD to succeed in intervening it could not challenge that Order.

In addition, as RRD conceded at the Conference, neither the April 27 Order nor the settlement agreement deprived RRD of PURPA rights. If RRD chooses to avail itself of the licensing terms, it may do so. However, Section XII(c) of the Settlement Licensing conditions, expressly preserves the jurisdiction of FERC. (See Response at 19.) If RRD finds that in some respects rights available to it under PURPA are more extensive than the licensing rights, then there is nothing in the settlement or the licensing conditions that prevents RRD from asserting PURPA rights. (See Tr. 16-18, 131-134.)

At this stage of the proceeding, Florida Cities continues to be a party because it did not agree to the settlement. It tried and failed to have the Board attempt to persuade the parties to make the settlement favorable to it. In particular, it was unable to show how the settlement would injure it.

Florida Cities is contending that a situation inconsistent with the antitrust laws exists. If it proves that contention it will be entitled to appropriate relief, in the form of remedial conditions ordered by the Board. Those conditions, if imposed, may consider the terms of the settlement. However, the reason for imposing conditions on FPL would be that Florida Cities prevailed on the merits, and not because a settlement was negotiated. See April 24 Order, pp. 12-13.

As a result of this procedural posture of our case, which seems not to have been fully appreciated by RRD, there is no quick way for us to resolve the problem confronting RRD. Tr. 24-25. RRD's request would require us to determine the merits of the case. Although we may conclude this case before FERC concludes its, that is by no means certain.

Were RRD seeking to participate fully in the adjudication of the merits of this case, then it is possible that relief would be available before the NRC that is not available before FERC. But RRD wants to limit its participation as much as possible to exactly the same issues as pend before FERC. RRD does not seek to participate in adjudicating the merits of the case. Tr. 22. It seeks limited participation only with respect to the circumstances surrounding FPL's refusal to sell it power.

The limits RRD places on its own participation make it clear that its FERC remedy is adequate for its purposes. Since FPL states that it is willing to permit P&W to operate the steam generating portion of the plant on a one year basis and to pay PURPA prices for steam bought by the EGF, even the adjudicatory delay at FERC does not seem a serious problem for RRD. (Tr. 41.) Furthermore, we agree with FPL that the antitrust issues impliedly raised by RRD are peculiarly within the competence of FERC. Were these issues legitimately raised by a party to our proceedings, we would necessarily resolve them. But when the issues may be admitted or not in our discretion, we can weigh the special competence of FERC in deciding whether to admit the issues. That competence arises because FERC has the responsibility for administering PURPA and the antitrust issue impliedly raised here is whether small power facilities have antitrust rights additional to their PURPA rights or whether PURPA rights preempt antitrust rights.

To summarize, we have concluded that the other remedies available to RRD are not only sufficient for its purposes but, for public policy reasons, are actually superior. RRD has failed to demonstrate any way in which an NRC proceeding might provide it relief which it cannot receive from FERC if, as it claims before both agencies, it is a qualifying small power producer.

B. Good Cause for Late Filing

(1) Position of RRD

The Petition's only stated ground for good cause for late filing is that RRD "recently unearthed" the partial settlement agreement adopted in this case. Petition 7-8.

In the course of the Conference of Counsel, the Board suggested that RRD's filing implied better cause for late filing than had been explicitly stated. Tr. 56-57. Later, RRD adopted the suggested argument as its own. RRD stated that:

[W]e had discussions [with Dade County] ... about changing the contracts, but we had had those before. The thing blew up at the end of 1980, with a lawsuit by Dade that got aborted by the

Court's throwing it out on [lack of] diversity on its own motion, [by] our arbitration, [by] our demand for partial payment, [and by] their claim of anticipatory breach. And then we qualified the facility in March of 1981 [and] asked them to wheel in April, and we get involved here in April

We had a disagreement. There was never any intention on our part prior to that to just take what they consider to be their plant. But after things became intractable and we were sued and we had to go to arbitration, we terminated the contracts pursuant to [the contract] ... terms [W]e had to do something with [the facilities] And that is where we are.

Tr. 116-117. RRD also argued that it would not have had standing had it sought to intervene prior to the contract problems because it was only then that they began to have a need to exercise PURPA rights, including a request for interconnection and wheeling. Tr. 117.

(2) Position of FPL

FPL highlights the Petition's claim that the settlement license conditions create and maintain a situation inconsistent with the antitrust laws. FPL regards this argument as patently false as a matter of law and argues, therefore, that RRD's failure to hear of these conditions cannot create "good cause," as a matter of law. (Response 18-19, 25-27.) FPL also cites *St. Lucie*, CLI-78-12, 7 NRC at 946-947, for the proposition that, "A very late petition must present a very strong reason for late intervention."

FPL also argues that the Board's "good cause" determination should weigh adverse factors in the balance. It suggests that the Board make a subjective judgment about whether RRD is attempting to use Commission proceedings merely to gain commercial advantage in a contract dispute. It also suggests that RRD's Petition should have fully disclosed the contract dispute concerning ownership of the EGF and that failure to disclose constitutes an unacceptably "recalcitrant attitude."

At the Conference of Counsel, FPL argued that the proceedings are so far advanced that no further intervention should be allowed. (Tr. 57.) It also argued that even if intervention were allowed at this stage for egregious violations of the antitrust laws, the present allegations arise in the context of a contract dispute and do not constitute egregious antitrust violations. (Tr. 57-58, 55-56.)

FPL advanced the argument that RRD must bear the burden of showing cause for late filing. In this instance, FPL argues that RRD would have to show "that indeed only at that very moment did it occur to Parsons & Whittimore that they might want to wheel some power out of

this facility." Tr. 86. Furthermore, FPL said that considerably before December 1980, at a time not specified in the record, RRD had indicated that it was financially unable to operate the EGF according to its contractual commitment. Tr. 38, 92-93 (citing Dade County's federal district court complaint, since dismissed for want of diversity of jurisdiction), 98 (complaint does not just "get filed out of the blue"). FPL also said it was prepared to show that an official of Parsons & Whittimore told FPL last autumn that Parsons & Whittimore never had any intention of transferring title to FPL. Tr. 86-87. Consequently, FPL argues that RRD did not suddenly wake up last April and decide it wanted to get power wheeled out of its facility. Ibid. Hence, it is FPL's position that RRD also has not shown good cause for late filing due to its unexpected position as owner of the EGF. FPL also requested discovery on this possible ground for good cause. Tr. 87-88.

(3.) Conclusion

(a) Seriousness of Problem in View of Extreme Lateness

We find that the antitrust problem alleged by RRD is not sufficiently serious to justify intervention.

The proceeding is eight years old and FPL estimates an October 1981 date for St. Lucie 2 to begin operations. Although we are not prepared to accept FPL's argument that intervention is impossible in so old a proceeding, we agree that the test for intervention becomes increasingly rigorous as time passes.

If RRD were alleging an egregious violation of the antitrust laws, particularly one which differed in nature and kind from other allegations in the proceeding, we would be more ready to accept intervention. But RRD's allegation of a situation inconsistent with the antitrust laws is not particularly egregious.

The record contains contracts pursuant to which FPL expected to assume ownership of the EGF. We have been informed, without contradiction by RRD, that if RRD begins generating electricity from that plant FPL would lose a tax credit for which it had bargained. In addition, should FPL later gain title to this facility it would not be able to commence generating power without first petitioning FERC for the right. The FERC petition would be necessary because FPL would be seeking to begin selling electricity from a plant which had previously generated electricity (other than for demonstration or test purposes). Tr. 40, 42.

Under these circumstances, it is possible that after a lengthy evidentiary hearing RRD could persuade us that it was inconsistent with the antitrust laws for FPL to decide to contest RRD's alleged PURPA rights before FERC. However, the extent of the alleged fault would be that FPL, as

part of a broader scheme of monopolization, was participating in a proceeding provided for by law under circumstances where it has an arguable ownership right in the alleged small power facility. We find that not to be the kind of egregious antitrust violation for which such late intervention is appropriate.

In addition, we note that the only ground RRD alleged for its late intervention had to do with lack of knowledge of a settlement agreement reached in this case. However, notice of a hearing concerning that agreement was published in the Federal Register of January 15, 1981 at 3683. RRD had not sought to show that it was entitled to personal notice of that agreement. Hence, we are not able to find that lack of notice deprived it of due process of law.

For reasons we already stated, RRD has no legal grievance at all resulting from the settlement agreement. Its rights have not been adversely affected by the agreement. Consequently, lack of knowledge of that agreement can not have created good cause for intervention.

(b) Excuse for Lateness

We find that RRD's reasons for late filing were not specific enough.

It was initially our impression that RRD had better grounds for intervention than it had stated in its Petition. We hinted as much in our July 7 Order at p. 13. We stated as much at the Conference. Tr. 56. However, we are persuaded by FPL that, despite our prompting, RRD's statements at the Conference did not allege good cause with sufficient specificity.

In particular, we are concerned that RRD failed to contradict FPL's representations that RRD should have filed soon after February 1980. FPL stated that by then, RRD knew that it could not afford to operate the EGF pursuant to the operating contract. Furthermore, RRD apparently learned shortly thereafter that its demand for renegotiation of key payment terms would not be met.

RRD conceded that Dade County's decision not to pay it for the facility occurred only after RRD had informed Dade that it would not live up to the terms of the operating agreement. This subject was addressed extensively at the Conference. FPL asserted (Tr. 38) that:

Some time in 1979, Parsons & Whittimore told Dade County:
"We are going to lose our shirts if we have to comply with that contract. We will be operating at a loss every year. We've got to have some more money in order to make the deal go."

Later, FPL appears to have modified this assertion by stating that it possesses a letter, which is not in our record, documenting that Parsons and Whittimore said in February 1980 it would not operate the EGF.

FPL also referred to paragraph 39 of a complaint that Dade County filed in federal district court; and that complaint, which is attached to FPL's request for a subpoena, asserts that RRD would not operate the EGF under the terms of the EGF contract.

By contrast, RRD never denied the validity of either the 1979 date or the February 1980 date suggested by FPL. Nor did RRD suggest its own date. Instead, it admitted on several occasions a lack of detailed knowledge of the ongoing arbitration proceedings. Tr. 10, 74, 78-79. It also participated in the following dialogue (Tr. 76), which we interpret to confirm that RRD's decision not to meet its obligation to operate preceded Dade's decision to refuse to pay for the facilities:

JUDGE BLOCH: So your understanding was that the first thing to occur was a refusal to pay based on nonperformance, and that other issues concerning whether or not you were going to operate occurred later.

MR. KUCIK (RRD): They said that they were afraid that if it were true, what we were saying, that the shortfall was so great that we simply wouldn't be able to operate and we would walk away from it, and therefore they were not going to pay us any money and they were going to go to court. We said, look, we just want to talk about it, the plant is substantially completed, we need the \$90 million. We have earned it and we are getting killed by the interest and we are now in arbitration. We were in court and we are in this big mixup.

We conclude that RRD may have known of its serious contractual impasse on or before February 1980. RRD had not asserted anything to the contrary, and it is its burden to allege with particularity its good cause for late filing. Similarly, RRD has not explained its delay in petitioning for intervention from the date it knew of the contract impasse to the present. That is a substantial delay during which a company of RRD's size should have uncovered potential forums for its concerns, including this forum.

Had RRD learned of this proceeding earlier, it could have sought to persuade the Staff and the Justice Department to seek more stringent settlement terms with respect to PURPA facilities. This could have gone part way to resolve its current problems. It also could have sought to persuade the Board to require amendment of the settlement agreement. Or, it could have sought PURPA status before FERC, thereby forcing FPL to declare whether it would concede that RRD had PURPA rights or would stand by contract provisions that prevented any other firm from first operating the EGF. Once FPL had declared its position before FERC, RRD could have decided to seek more timely intervention here.

In summary, RRD failed to show good cause for late filing because it failed to state with specificity when it first learned that it might have to operate the EGF and it failed to excuse the delay between finding out about the need to operate and petitioning to intervene in this proceeding.

C. Delay

(1) Position of RRD

RRD states that its intervention will not broaden the issues or delay the proceeding. Petition at 10. It does not intend to participate in litigation of general issues in this proceeding, even by way of submitting briefs on an issue such as the appropriateness of summary judgment. Tr. 22-23. It would accommodate its needs to the needs of the ongoing proceedings. Tr. 25. It would stipulate that the issuance of the operating license need not be held up pending the determination of its claim. Tr. 90.

(2) Position of FPL

FPL argues that the PURPA issues RRD raises are complex and that they are not likely to be considered unless RRD becomes a party to this proceeding. Response at 32. Furthermore, FPL argues that we cannot resolve antitrust issues related to RRD unless we first address the contractual dispute between the parties. Response at 32-33. That, in FPL's opinion, would itself be a lengthy inquiry involving discovery concerning over 60,000 documents. Tr. 91.

FPL also asserts that the antitrust issues raised in this case are complex and would involve matters of first impression relating to the relationship between antitrust law and PURPA. Tr. 46-50. Necessarily, the decision would require evidence concerning the structure of markets and the relationship, if any, between this one refusal to deal and an alleged pattern of refusals to deal. Tr. 103 (implication).

(3) Conclusion

Although RRD sincerely desires to keep its intervention from complicating this case, we find that it would be unable to accomplish that purpose. For us to consider whether there has been a PURPA violation would require us to investigate in depth the entire dispute concerning the sale of the EGF. At that point, we might be only starting our antitrust inquiry, into whether RRD's injury were also a competitive injury. We would need to consider the relationship of RRD's claim to market structure and whether this is a single bona fide contract claim or part of a pattern of behavior that was inconsistent with the antitrust laws.

Although RRD's intervention would not retard the licensing of St. Lucie, because it has stipulated to permitting the plant to open, its

participation in this proceeding inevitably would complicate and delay it. Hence, this factor mitigates against approving RRD's intervention.

D. Assistance in Developing a Sound Record

(1) Position of the Parties

RRD argues that without its assistance the record will not adequately reflect its interests or the interests of other PURPA facilities. Petition 9-10. FPL argues that RRD's interests relate primarily to PURPA questions and that its concerns would not contribute to resolution of other substantive issues in the proceeding. Response at 31.

(2) Conclusion

RRD's principal interest concerns the relationship between a single commercial dispute and the operation of the antitrust laws. Although we do not know enough as yet to resolve the knotty factual questions lurking behind this legal issue, we know that FPL's position on its contract rights is not frivolous and that an inquiry into the possible relationship between this dispute and other behavior would substantially overlap facts already in controversy. Hence, RRD either would begin against its will to participate in the entire case or it would choose to restrict itself to one very limited matter.

We find that elaboration on the record of this tiny facet of FPL's overall conduct is unlikely to be highly probative of whether operation of St. Lucie 2 would create or maintain a situation inconsistent with the antitrust laws. Consequently, we conclude that inquiry into this issue would not contribute to the development of a sound record.

On the other hand, this proceeding could arrive at a posture in which RRD could help to protect its interests and contribute to the development of a sound record. Should we decide that the operation of St. Lucie would create or maintain a situation inconsistent with the antitrust laws, we would then need to fashion relief. At that time, RRD could present legal arguments concerning the appropriateness of granting relief to PURPA facilities to supplement rights already granted by PURPA. The two principal issues that apparently would be involved are whether PURPA facilities are "competitors" entitled to antitrust protection and whether license conditions should supplement relief provided for by PURPA. So that we might have RRD's assistance at that time, we grant it conditional status as *amicus curiae* for the purpose we have just outlined.

We note that in our July 7 memorandum and order we permitted RRD to participate as *amicus curiae* in the summary judgment proceeding scheduled for August 17 and 18, 1981. However, RRD has stated that it

does not intend to accept that invitation. Tr. 22. Consequently, that invitation is withdrawn.

E. Representation by Existing Parties

RRD argues that no existing party has the same interests as it does. Petition at 10. FPL agrees with RRD, on the ground that RRD's interests, as expressed in its Petition, have no nexus with this proceeding. Response at 31.

We disagree with both parties. RRD's success in this proceeding necessarily would depend on some party proving that the operation of St. Lucie would create or maintain a situation inconsistent with the antitrust laws. However, RRD is satisfied to permit Florida Cities to pursue this issue without its aid. Tr. 22. Hence, RRD acknowledges that Florida Cities would adequately represent its interest in that portion of the proceedings.

Although Florida Cities does not have identical interests with RRD, it does have an interest in showing that FPL is maintaining a situation inconsistent with the antitrust laws. In its discovery efforts, Florida Cities has obtained some documents relevant to whether FPL's conduct toward incipient PURPA facilities is inconsistent with those laws. Tr. 19-20. Florida Cities apparently intends to pursue that issue.

However, even if Florida Cities does not pursue the PURPA issue, we do not believe that we would be restricted in fashioning relief from protecting legitimate interests of PURPA facilities providing we first find that there is a situation inconsistent with the antitrust laws. If we were to make that general finding, based on evidence presented by Florida Cities, we would be in a position to fashion appropriate relief to protect all affected entities, including PURPA entities.

Under these circumstances, we conclude that Florida Cities adequately represents RRD's interests in this proceeding, up to the point at which its participation *amicus curiae* is required to address issues uniquely related to PURPA facilities. Since we decided, in the previous section of this Memorandum, to grant RRD limited status as *amicus curiae*, we find that RRD's interests are already adequately represented and that this factor operates against its intervention.

F. Conclusion About Late Intervention

After examining the five factors governing late intervention, we are convinced that RRD should not be permitted to intervene.

We find that the balance is heavily weighted against intervention. Unless we were required to find that one or more of the other factors weighed heavily in favor of intervention, we would exclude RRD solely

based on its failure to show good cause for late intervention and we also would exclude it solely based on the availability of other means to protect its interest. Although we consider the other factors to weigh against RRD's intervention, findings on those factors are not, in our opinion, required for the balance to weigh against intervention.

III. NEXUS

A. Arguments of FPL and Staff

FPL argues:

[T]he Petition fails utterly to allege a situation inconsistent with the antitrust laws ..., and does not address whether "activities under the license would create or maintain" any such situation. (Atomic Energy Act §105(c)(2), 42 U.S.C. §2135(c)(5) (1976)) [*Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit No. 1)*, ALAB-279, 1 NRC 559 (1975); *Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit No. 1)*, ALAB-299, 2 NRC 740 (1975).]

. . .

[T]he successful petition must show a "meaningful nexus" between the activities under the nuclear license and the "situation." [*Louisiana Power and Light Co. (Waterford Steam Electric Generating Station, Unit 3)*, CLI-73-25, 6 AEC 619 (1973); *Wolf Creek*, ALAB-279, 1 NRC at 566]. Petitioner makes no effort to allege any nexus between the situation inconsistent with the antitrust laws and activities under the operating license for St. Lucie Unit No. 2. This is not surprising in view of the absence of any factual basis for demonstrating such a nexus. The closest that Petitioner comes to acknowledging any such requirement is in paragraphs (18) and (19) of the OL Petition, where it states, in essence, that its interest will be affected by FPL's "intended implementation" of the settlement conditions. (OL Petition, pp. 8-9). As is demonstrated above, the settlement conditions affect Petitioner only in that they do not go as far as Petitioner would like in addressing what Petitioner contends is a situation inconsistent with the antitrust laws — a "situation" which is not alleged to bear any nexus to activities under the license. The requirement of such a nexus is jurisdictional [*Waterford* 6 AEC at 619.], and Petitioner's failure to allege any such nexus is fatal to the substance of its allegations.

(Response 2, 21.)

Staff agrees with FPL that RRD had not specified, with the specificity required by *Wolf Creek*, the nexus between its petition and the operation of St. Lucie 2. Tr. 66-68.

FPL expanded its arguments at the Conference. It argues that PURPA "has nothing to do with competition." Tr. 47. A PURPA facility is given special protections that are more stringent than are afforded to competitive entities. RRD is, therefore, not a competitor of FPL, in the sense of an entity striving to survive in open market competition. Tr. 46-47. It also argues that if RRD is a PURPA facility it can gain its rights through FERC; and if it is not a PURPA facility, then its claim that it was improperly denied PURPA rights does not constitute an allegation of a violation of the antitrust laws or of any other law or regulation. Tr. 48.

B. Arguments of RRD

In its Petition, RRD relied on the partial settlement agreement to establish its nexus to this proceeding. Petition 4-6; OL Petition 2-4. At the Conference, RRD appears to have conceded that a settlement agreement, which was "trying to give us something" could not provide a nexus with the proceeding. Tr. 17.

However, later in the same Conference, RRD was asked to address "nexus" specifically. At that time, RRD appears to have resurrected its argument that its nexus to the proceeding rests on "the wheeling and transmission provision for PURPA facilities and neighboring entities" which are already contained in the license conditions. They claim "a nexus with that, and ... a nexus with whatever underlay that that made it part of this proceeding." Tr. 118.

At that point, Judge Bloch asked RRD the following question:
How will the fact that they are going to open a nuclear facility adversely affect your situation or create or maintain a situation inconsistent with the antitrust laws with relationship to P&W?

RRD refused to specify a nexus but relied, instead, on an earlier decision in this case which it said stood for the proposition that "An unambiguous demonstration of a connection between violations of law and NRC-licensed activities is not, in our view, a necessary precondition to the institution of a section 105(a) antitrust proceeding." Tr. 119. RRD also stated that "we do not have to have a nexus with ... this particular [nuclear] plant." Tr. 126.

In another part of the record, RRD relies on the proposition that the license conditions negotiated by the Justice Department was the ground for withdrawing the Justice Department's request for a §105(a) proceeding.

Tr. 120-121. On that ground, RRD asserts that it has a nexus with the settlement condition and a nexus to the proceeding.

RRD also asserts that FPL has the only transmission grid in the area (Tr. 123) and that the opening of St. Lucie 2 would enhance FPL's ability to maintain its transmission monopoly. Tr. 121-122.

C. Conclusion

We find that RRD has not alleged the required nexus to this proceeding and that, on this independent ground, it should not be permitted to intervene in this proceeding. *Compare Kansas Gas and Electric Company and Kansas City Power and Light Company (Wolf Creek Generating Station, Unit No. 1), LBP-75-13, 1 NRC 268 at 271 (1975)* (finding a nexus between failure to wheel and an inability of petitioner to obtain "meaningful access to nuclear generated power"); reversed on other grounds, *Wolf Creek, ALAB-299, 2 NRC 740 (1975)*.

RRD's petition is extraordinary. It is not a municipal utility or cooperative engaged in the regular business of selling power at wholesale. Unlike such businesses, it is not concerned about the impact of nuclear power on its cost structure. It does not depend on its ability to sell power at competitive prices, and it is not concerned that the opening of a nuclear plant will adversely affect its ability to compete.

In this proceeding, RRD does not seek to obtain a share in St. Lucie or to purchase unit power. If it were granted such rights, they would not help it. Since it has no obligations to supply retail power and is not interested in competitively bidding for retail franchises, these rights would be of no value to it.

In many cases, merely by alleging the nature of its own business and the existence of a situation inconsistent with the antitrust laws, a petitioner to intervene will have alleged a sufficient nexus to the opening of a nuclear plant that likely will sell cheaper power. A nuclear plant would place it at a competitive disadvantage. Consequently, competitive entities may not need to make a particularly strong showing of nexus.

However, RRD's extraordinary situation requires more of it. It is by no means obvious that it will be hurt by FPL opening a nuclear power plant. Although there may be some weak connection between the opening of a plant and the maintaining of a monopoly on transmission (as RRD argues), there is little reason to believe that a transmission monopoly would abate merely because FPL could not open a nuclear plant. We find that the remote chance of an abatement of a transmission monopoly is insufficient nexus to this proceeding to support intervention.

We also are persuaded by FPL's arguments concerning relief. If RRD proves that it is a qualified facility, it will be entitled to PURPA relief,

which will in every way meet its needs. If RRD is not a qualified facility under PURPA, then it has alleged no further ground for relief in this proceeding.

If FERC agrees, RRD will be able to sell power at avoided costs, to interconnect, to buy power and to wheel power to third party purchasers. 16 CFR §824i and §824k. RRD's PURPA rights are not affected by whether or not FPL opens St. Lucie or by whether or not FPL maintains a transmission monopoly. RRD has PURPA rights that are not even affected by whether or not the operation of St. Lucie will create or maintain a situation inconsistent with the antitrust laws.

As a PURPA facility, RRD would have no need to intervene in an NRC antitrust proceeding. Because it has alleged special PURPA status as its entire ground for relief in this proceeding, RRD also has failed to allege a nexus to this proceeding. It has failed to allege how the opening of St. Lucie would injure it or even how the existence of a situation inconsistent with the antitrust laws would injure it.

We conclude that RRD's claim is a PURPA claim and not an antitrust claim and should not be admitted in this proceeding.

IV. PROCEDURAL RULINGS

In its June 20 Motion to Add Questions, RRD requested to file a written response concerning its ownership of the EGF, an issue that was hotly contested in this proceeding. We find that the motion was not properly made in the invited filing, which was solely for the purpose of adding questions to the agenda for the Conference. We also find that it would not be proper to grant the motion because RRD has had several opportunities to respond in detail to FPL's allegations. It could have forthrightly described the property dispute in its Petition, in its May 14, 1981 Motion for an extension of time to respond to FPL's request for issuance of a subpoena, in its June 1, 1981 response to FPL's request for issuance of a subpoena or at the Conference.

We also note that ownership of the EGF is irrelevant to the grounds of the Board's decision. We are convinced that RRD has a sufficient interest in the EGF to support its participation in this proceeding had it been able to meet the other grounds for intervention and late intervention. It would not be necessary for it to establish both equitable and legal title as a condition to intervention. While FPL might be able to use its alleged equitable title to the facilities as a defense to the argument that its actions have been inconsistent with the antitrust laws, its alleged right to the facilities would not have defeated RRD's standing in this proceeding, nor would it have been entitled to extensive pre-intervention discovery.

As a result of this decision, FPL's request for the issuance of a subpoena is moot and shall not be granted. Dade County's contingent petition to intervene, filed on July 9, 1981, also is moot and shall not be granted.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 5th day of August 1981

ORDERED

- (1) The Petition to Intervene filed by Parsons and Whittimore and Resources Recovery (Dade County), Inc. on April 24, 1981 is denied.
- (2) Florida Power & Light Company's May 8, 1981 request for the issuance of a subpoena is moot and shall not be granted.
- (3) Dade County's July 9, 1981 petition to intervene is moot and shall not be granted.
- (4) Pursuant to 10 CFR §2.751a(d) objections to this Order may be filed by a party within five (5) days after service of this order, except that the regulatory staff may file objections within ten (10) days after service.
- (5) Paragraph (1) of this Order is appealable to the Atomic Safety and Licensing Appeal Panel within ten (10) days after service of this order, pursuant to 10 CFR §2.714a(b).

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD,
WITH THE CONCURRENCE OF
JUDGE MICHAEL A. DUGGAN
AND
JUDGE ROBERT M. LAZO**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**August 5, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Elizabeth S. Bowers, Chairman
Dr. Emmeth A. Luebke
Dr. Oscar H. Paris**

In the Matter of

**Docket No. 50-142 OL
(Proposed Renewal of
Facility License)**

**THE REGENTS OF THE
UNIVERSITY OF CALIFORNIA
(UCLA Research Reactor)**

August 10, 1981

The Board grants an intervenor's motion for the qualification of an expert interrogator under 10 CFR 2.733.

RULES OF PRACTICE: EXPERT INTERROGATORS

A expert interrogator under 10 CFR 2.733(a) need not meet the same standard of expertise as an expert witness. The standard for interrogators under 10 CFR 2.733(a) is that the individual "is qualified by scientific training or experience to contribute to the development of an adequate decisional record in the proceeding by the conduct of such examination or cross-examination."

**ORDER RELATIVE TO PARTICIPATION
OF DANIEL O. HIRSCH UNDER 10 CFR §2.733**

On June 3, 1981, CBG moved for the qualification of Daniel O. Hirsch as an expert interrogator under 10 CFR §2.733. The motion stated that approval was sought for all issues except the security issue. The motion alleged that Mr. Hirsch is qualified by virtue of his scientific and technical experience and that he would be fully prepared to conduct a meaningful and expeditious examination or cross-examination under the direction and control of counsel. The affidavit of Mr. Hirsch recited that he graduated

magna cum laude from Harvard in Special Studies, has been a lecturer at UCLA on energy issues with a focus on nuclear power, has experience in researching the nuclear issue, and has testified in hearings on nuclear matters.

On June 12, 1981, UCLA stated that no objection was being made to Mr. Hirsch acting as interrogator but that Mr. Hirsch should be required to be more explicit about his formal education. The Board's order of June 16, 1981 requested Mr. Hirsch to be explicit about his formal education, since a degree in Special Studies was not informative, and also to be more explicit about the courses on "energy issues" he is teaching.¹

On June 30, 1981, Mr. Hirsch responded to the Board's order by stating that his particular program at Harvard focused on how various disciplines are utilized in public policy decisions. He also stated that since his formal education, he has had a deep immersion in the scientific and technical aspects of energy issues with particular emphasis on nuclear power. He enclosed a thorough description of his course at UCLA entitled "Energy Alternatives and Public Policy". Mr. Hirsch is a member of the Los Angeles Federation of Scientists, and he enclosed a strong statement from that group in support of his expertise regarding nuclear matters. The statement mentioned his presentations to the organization on the technical aspects of the UCLA research reactor.

On July 16, 1981, UCLA stated that Mr. Hirsch's response was vague and that his technical and scientific training and experience are at best very limited. The statement concluded that Mr. Hirsch has not demonstrated that he is qualified to proceed with interrogation on any contention. On July 20, 1981, CBG stated the UCLA filing did not explicitly withdraw the prior approval and that there was no basis for the criticism that Mr. Hirsch's information was vague and did not demonstrate his ability to proceed as an interrogator. Counsel for CBG reiterated his need to have this "modest" request granted because of his need for the aid of Mr. Hirsch in competently representing the interests of CBG.

On July 30, 1981, the Staff quoted 10 CFR §2.733 in part and concluded that an expert interrogator must meet the same standard of expertise required for an expert witness and that Mr. Hirsch does not qualify since he has not had formal education or working experience in engineering or physics or other areas directly related to the subject matter of the contentions. The Staff also states that Mr. Hirsch's formal education and teaching experience are in the field of public policy and since the proceeding is concerned with a research reactor and not a nuclear power

¹ On June 19, 1981, the Staff stated that since the Board's order was issued before their response to the motion was due, they would await Mr. Hirsch's answer before filing a response.

plant, his involvement with public policy on energy issues could not be even remotely relevant here. The Staff requested the Board to deny the motion.

The Board does not agree with the Staff position that an expert interrogator must have the same standard of expertise as an expert witness. The standard to be applied is set forth in §2.733(a) as follows: "That the individual is qualified by scientific or technical training or experience *to contribute to the development of an adequate decisional record in the proceeding by the conduct of such examination or cross-examination.*" (Emphasis supplied)

Mr. Hirsch's formal education was interdisciplinary proceeding under a committee composed of a geologist, an economist and a member of the school of education. For the last seven years, Mr. Hirsch has had a part time appointment as a Lecturer at UCLA, and for the last ten years he has been a researcher and technical advisor to CBG, with emphasis in the past few years on nuclear matters. His presentations on the UCLA research reactor to the Los Angeles Federation of Scientists were obviously well received. All of the above points to a probability that Mr. Hirsch might well have the ability to proceed as an expert interrogator. But what is most persuasive to the Board is the fact that at the prehearing conference on February 4 and 5, 1981, Mr. Hirsch in an articulate and technically knowledgeable manner discussed and explained the basis for the various contentions. He demonstrated an excellent grasp of the technical aspects of the issues.

We also recognize that CBG has limited resources, and if the burden can be shared, their resources can be used with greater productivity. However, if during the hearing the Board perceives that the interrogation by Mr. Hirsch indicates a lack of technical competence and is not contributing to the development of an adequate record in the proceeding, his approval to proceed will be rescinded in part or in the total.

Both Mr. Hirsch and counsel for CBG have acknowledged their respective obligations under §2.733. Mr. Hirsch has the obligation under (b) and (c) to have read the written testimony or documents and to be prepared to conduct a meaningful and expeditious examination or cross-examination. Counsel has acknowledged that he shall be responsible for Mr. Hirsch's conduct in proceeding with the examination or cross-examination.

**The motion is granted.
IT IS SO ORDERED**

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**Elizabeth S. Bowers, Chairman
ADMINISTRATIVE JUDGE**

**Bethesda, Maryland
August 10, 1981**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Marshall E. Miller, Chairman
Dr. Emmeth A. Luebke
Dr. Oscar H. Paris**

In the Matter of

**Docket Nos. 50-250-SP
50-251-SP
(Proposed Amendments to
Facility Operating
Licenses to Permit
Steam Generator Repairs)**

**FLORIDA POWER AND LIGHT COMPANY
(Turkey Point Nuclear
Generating, Units 3 and 4)**

August 12, 1981

The Licensing Board denies an intervenor's application for a stay pursuant to 10 CFR 2.788 of the Board's Final Order (LBP-81-16) cancelling further hearings on license amendments to permit steam generator repairs.

RULES OF PRACTICE: STAY OF ORDER

In deciding whether to grant a stay of an order, a Licensing Board is governed by the four-factor test of 10 CFR 2.788, which essentially codifies the judicial principles applicable to motions for preliminary injunctions.

RULES OF PRACTICE: STAY OF ORDER

No single factor among the four to be considered for a stay decision under 10 CFR 2.788 is necessarily dispositive. Rather, the "strength or weakness of the showing by the movant on a particular factor influences principally how strong his showing on the other factors must be in order to

justify the sought relief." *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-338, 4 NRC 10, 14 (1976).

MEMORANDUM AND ORDER

A Final Order was entered in this proceeding on June 19, 1981, permanently cancelling the previously scheduled evidentiary hearing on license amendments to permit steam generator repairs.¹ The Director of Nuclear Reactor Regulation was authorized to issue the appropriate license amendments. By our previous Memorandum and Order entered May 28, summary disposition had been granted of all remaining contentions of the Intervenor.² The authorized license amendments were issued by the Director on June 24, 1981, and the steam generator repairs were immediately commenced.

The Intervenor filed an application for a stay of the Final Order on June 27, 1981, pursuant to the provisions of 10 CFR §2.788. The four factors to be considered in determining whether to grant or deny a request for a stay are as follows:

- (1) Whether the moving party has made a strong showing that it is likely to prevail on the merits;
- (2) Whether the party will be irreparably injured unless a stay is granted;
- (3) Whether the granting of a stay would harm other parties; and
- (4) Where the public interest lies (10 CFR §2.788(e)).

These rules governing the consideration of a stay are a codification of the judicial principles applicable to motions for preliminary injunctions.³ No single factor among the four to be considered is necessarily dispositive. Rather, the "strength or weakness of the showing by the movant on a particular factor influences principally how strong his showing on the other factors must be in order to justify the sought relief."⁴

¹ LBP-81-16, 13 NRC 1130 (1981).

² LBP-81-14, 13 NRC 677 (1981).

³ *Virginia Petroleum Jobbers Association v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958); *Washington Metropolitan Area Transit Commission v. Holiday Tours*, 559 F.2d 841, 843-44 (D.C. Cir. 1977).

⁴ *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-338, 4 NRC 10, 14 (1976).

1. Likelihood of Success on Appeal

It is the burden of the Intervenor to "make a strong showing that it is likely to prevail on the merits of its appeal. Mere establishment of possible grounds for appeal does not meet this standard."⁵ In fact, it has been suggested that without a strong showing that the movant is likely to prevail on the merits of an appeal, there is no right to a stay "even if irreparable injury might otherwise result."⁶ And where the movant cannot establish that serious irreparable injury will result in the absence of a stay, the movant must make an "overwhelming" showing that he will succeed on the merits of the appeal.⁷

In the instant case, the Intervenor does not attempt to show or argue that he is likely to prevail on the merits of his appeal. The first of the above four factors is not even addressed in the Application for Stay. There was abundant evidence in the record that under either normal or hurricane conditions, the onsite storage of solid low-level waste generated by the repairs would not pose a significant risk to public health and safety.

This evidence establishes that the steam generator lower assemblies (SGLAs) will be adequately protected from hurricanes or tornadoes while stored in the steam generator storage compound.⁸ An SGLA outside of the containment would be immovable by hurricane winds or wind-driven water, and a tornado-borne missile could not penetrate the steel walls of an SGLA.⁹ The solid wastes with relatively high concentrations of radioactivity will be kept inside the Turkey Point Radwaste Building, which is designed to withstand hurricanes, pending shipment offsite.¹⁰

Based also upon facts set forth more fully in paragraph 2, *infra*, we hold that the Intervenor has failed to make the required showing on the first factor governing a stay application.

2. Irreparable Injury

The issue of whether irreparable injury will result unless a movant is granted a stay is often a "crucial" factor in NRC deliberations.¹¹ It is well

⁵ Toledo Edison Co. *et al.* (Davis-Besse Nuclear Power Station, Units 1, 2 and 3), LBP-77-7, 5 NRC 452, 454, *aff'd.* ALAB-385, 5 NRC 621, 631 (1977). *See also* Environmental Defense Fund v. Froehke, 477 F.2d 1033 (8th Cir. 1973).

⁶ Virginian Ry. Co. v. United States, 272 U.S. 658, 672 (1926).

⁷ Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 635 (1977); Florida Power and Light Company (St. Lucie Nuclear Plant, Unit No. 2), ALAB-404, 5 NRC 1185, 1189 (1977).

⁸ Memorandum and Order entered May 28, 1981, p. 36.

⁹ *Id.*

¹⁰ Final Order, p. 3.

¹¹ *Marble Hill, supra*, 6 NRC at 632.

established that a party is not ordinarily granted a stay of an administrative order without an appropriate showing of irreparable injury.¹² This requires a showing that alleged threats of irreparable injury are not remote and speculative, but are actual and imminent.¹³ Thus, irreparable injury is not shown "against something merely feared as liable to incur at some indefinite time in the future."¹⁴

Intervenor's allegation of irreparable injury states as follows:

If the waste, containing from 1470-3270 ci., is released to the marine environment during a hurricane there will be irreparable injury not only to the Intervenor, but also to the general public (Intervenor's Application for Stay, at 3).

Intervenor's estimate apparently is based on the affidavit of Douglas King, dated June 27, 1981. However, Mr. King fails to address the procedures for securing or tying down radioactive waste, attested to by Mr. Gould in the latter's affidavit dated June 12, 1981, which we found adequate in our Final Order entered June 19, 1981.

Alan J. Gould, affiant for Licensee, attested that Mr. King had greatly overestimated the amounts of radioactive waste that would be generated during the repair of Unit 3 (Gould Affidavit at 2). Whereas King had estimated that 270 Ci of low-level solid radioactive waste would result from processing the primary coolant from a single unit, Gould estimated that only 40 Ci would be produced by the processing of primary coolant. Similarly, whereas King estimated that 400-1,000 Ci of solid radioactive waste would be produced from the decontamination of each Steam Generator Lower Assembly, Gould estimated that the radioactive waste that will thus be produced will amount to only 45 Ci. Mr. King also apparently assumed that there would be a "lack of adequate precautions in storing these wastes [which could] lead to an irreversible contaminating if a hurricane or tornado should breach the waste containers and scatter the contaminated material over the Turkey Point site and its surrounding waters" (King Affidavit, Conclusion). This ignores the record regarding the securing or tying down of barrels containing solid waste, described above.

¹²Permian Basin Area Rate Cases, 390 U.S. 747, 773 (1968).

¹³State of New York v. NRC 550 F.2d 745, 755 (2nd Cir. 1977).

¹⁴Eastern Greyhound Line v. Fusco, 310 F.2d 632, 634 (6th Cir. 1962), quoting Connecticut v. Massachusetts, 282 U.S. 660, 674 (1931).

In the Final Order we also found that an accidental release into the atmosphere of all of the radioactivity in the stored low-level waste from the repair of one unit, would result in a site boundary dose well within the limits set forth in 10 CFR Part 50, Appendix I. We found, further, that the accidental release of all of that radioactivity into the cooling canals would be within the limits set forth in 10 CFR Part 20, Appendix B, for releases to uncontrolled areas. Intervenor has adduced nothing to controvert the record on which our findings in the Final Order were based, and the second factor weighs against granting a stay.

3. Harm to Other Parties

The record clearly shows that the granting of a stay would seriously harm the Licensee, contrary to the third factor for consideration. It appears that Turkey Point Unit No. 3 recently experienced an unplanned repair outage, caused by the failure of the electrical generator. The Licensee then decided to reverse the order of steam generator repairs, and to make the electrical generator and steam generator repairs concurrently while Unit 3 is down.¹⁵ If the Licensee is required to interrupt the on-going steam generator repairs to Unit No. 3 by a stay order, substantial economic injury will result. The Affidavit of H. D. Mantz states that the costs of a 2 1/2 month delay would be approximately \$63,000,000. A seven month delay would cost approximately \$219,000,000. These costs are related to the cost of replacement power, escalation costs and the costs of relocating 400-450 discharged personnel. Consequently, the third factor weighs against granting a stay.

4. The Public Interest

We agree with the Staff that the public interest will best be served by the completion of the Turkey Point steam generator repairs as soon as is reasonably possible. Such repairs will permit the plant to operate with a greater degree of safety and efficiency than is possible where periodic shutdowns for inspections are required. Such inspection shutdowns necessarily entail some occupational exposures and economic costs. The record further demonstrates that the steam generator repairs can be carried out safely under either normal or adverse weather conditions.

One final matter remains for consideration, involving the discovery of a void in the containment building while the Intervenor's application for a stay was under advisement. On July 28, 1981 the Board issued an Order directing Florida Power and Light (FPL, Licensee) and the NRC Staff to

¹⁵Letter from Norman A. Coll to the Board, dated June 12, 1981.

provide full information about the discovery of a void in the containment building during the Steam Generator Repair activity, which the Board had authorized. It was the Board's understanding that the containment building would not be breached during the repair.

In the July 28 Order, the Board asked the following questions:

1. How was the void in the containment wall discovered?
2. Did the discovery result from breaching of the containment wall, or in some other fashion?
3. If the wall was breached, why was the Licensing Board not informed?
4. Should the statements of Licensee in the SGRR be considered a commitment?
5. What has been the role of the NRC Staff in this matter?

FPL answered by filing the Affidavit of F. G. Flugger on August 5, 1981, and the Staff responded with the Affidavit of Marshall Grotenhuis on August 7, 1981.

From these filings, the Board has learned that the containment building has not been breached. The void was discovered when a portion of the equipment hatch sleeve was removed as described in §3.2.5 of the Steam Generator Repair Report (SGRR). The removed section of the sleeve had to be replaced with thicker steel to assure load transfer from heavy equipment being moved through the hatch during the repair. The void was discovered in the wall beneath the hatch when the sleeve section was removed. No portion of the containment pressure boundary was modified or affected by removal of the sleeve. The Licensing Board was not informed about the void because the void was not caused by the Steam Generator repair activity, the containment wall was not breached, and the void will not affect the repairs. The Licensee did report the existence of the void to NRC's Office of Inspection and Enforcement (I&E) in appropriate fashion, and I&E is investigating the problem.

We therefore conclude that the performance of the Licensee in this matter was entirely consistent with the commitments it made in the SGRR and that the NRC Staff has been appropriately discharging its responsibility with regard to the problem. The discovery and reporting of the void in the wall of the containment need not influence our determination with regard to the Intervenor's motion to stay our Final Order.

For the foregoing reasons, the Intervenor's application for a stay of the Final Order in this proceeding is denied.

It is so ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

**Dr. Emmeth A. Luebke
ADMINISTRATIVE JUDGE**

**Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE**

**Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland
this 12th day of August, 1981.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Richard F. Cole
Dr. A. Dixon Callihan

In the Matter of

Docket Nos. STN 50-454-OLA
50-455-OLA

COMMONWEALTH EDISON COMPANY
(Byron Station, Units 1 and 2)

August 18, 1981

The intervention board was only attempting to determine whether there was at least one viable contention in order to trigger an evidentiary hearing in an operating license proceeding. It is sufficient for an intervenor at the pleading stage merely to state his reasons (*i.e.*, the basis) for the contentions, and he is not required to plead evidence or to establish that the assertions are well-founded in fact.

RULES OF PRACTICE: JURISDICTION OF BOARDS

"Petition" or "intervention" board does not rule on admissibility of all contentions, but it only determines standing and at least one viable contention in operating license proceedings.

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

A petition for intervention is not required to plead evidence or to establish that the assertions are well-founded in fact, but at the pleading stage it is sufficient to state the reasons (*i.e.*, the basis) for contentions.

RULES OF PRACTICE: DISCOVERY

Applicants are entitled to prompt discovery concerning the bases of contentions, as much information is already available from the FSAR and

other documents, which should be supplemented by later information.

RULES OF PRACTICE: DISCOVERY

The involvement of a party's lawyers in other litigation or professional business does not excuse noncompliance with nor extend deadlines for compliance with discovery requests or other rules of practice.

MEMORANDUM AND ORDER

I.

Pursuant to leave previously granted, the Commonwealth Edison Company (Applicant) on February 13, 1981, filed its petition for reconsideration of the Board's Memorandum and Order entered December 19, 1980.¹ That Order ruled upon the admissibility of the revised contentions filed by the Rockford League of Women Voters (League). The Staff's response to the petition, essentially supporting the request for reconsideration, was filed March 3, 1981. The League filed its memorandum in opposition to the petition on April 13, 1981.

The first ground relied upon by Applicant for reconsideration is the renewed argument that the revised contentions are untimely because they are greatly expanded in number beyond the original 13 contentions filed by the League. The original Order had pointed out that the revised contentions were not untimely because the Board, acting as an Intervention Board at the special prehearing conference, found standing and at least one viable contention to be set forth in the League's petition.² All parties were then requested to confer and negotiate regarding contentions, but the Board did not limit the Intervenors (not then represented by counsel) to the number or scope of the proffered contentions.³

The Applicant's petition asserts that evidently "the Board felt that the revised contentions were not untimely since Intervenor had not been represented by counsel at the special prehearing conference" (p. 4). That is not correct. The Board noted that the Intervenors were not represented by counsel, but it did not hold that this fact tolled the period when contentions could be amended. Rather, the Board acting as an "intervention board" or a "petitions board" which found a viable intervention petition in

¹ LBP-80-30, 12 NRC 683 (1980).

² *Id.*, at 690.

³ *Id.*

an operating license proceeding, then requested the parties to confer and negotiate regarding contentions.

The differences between an intervention board and a hearing board are well recognized in NRC practice. The Appeal Board has thus described these differences:

"In virtually all NRC proceedings in which a hearing is not mandatory but rather is dependent upon a successful intervention petition being filed in response to the published notice of *opportunity* for hearing, an 'intervention' licensing board is especially established for the sole purpose of passing upon such petitions as may have been filed. If that board denies each and every petition placed before it, absent appellate reversal no further adjudicatory action need be taken. Should, however, at least one petition be granted in whole or in part, thus giving rise to the necessity for adjudication of the merits of the issues presented therein, a discrete licensing board is then established to perform that function The second or 'hearing' board may or may not have the same composition as the 'intervention' board which preceded it. This determination is made by the Chairman of the Licensing Board Panel when and if the occasion arises and will depend upon, among other things, his appraisal of the continuing availability of the members of the 'intervention' board In the totality of circumstances, we think the settled division of jurisdiction between 'intervention' and 'hearing' boards to be as sensible as it is venerable and therefore reject out-of-hand the applicant's claim to the contrary." (Emphasis in original; footnotes omitted).⁴

The leading case in establishing the appropriate functions of a petition or intervention board is *Grand Gulf*, wherein it was stated:

"a board need not pass upon all contentions to resolve the question of whether intervention will be permitted, for it is sufficient for intervention purposes that one contention has been validly presented. The questions as to whether other contentions shall be allowed, and whether, ultimately, any contentions previously allowed can be disposed of by summary procedures, can be dealt with through further proceedings, and need not be considered in ruling upon intervention, fn. 2 ... Having reached those conclusions, the

⁴ Pacific Gas and Electric Company (Stanislaus Nuclear Project, Unit No. 1), ALAB-400, 5 NRC 1175, 1177-78 (1977).

Licensing Board properly acted on the petition without abiding the event of future rulings on other contentions which the Board believed to require further elaboration.” fn. 2 — “In an operating license proceeding ... the question of whether the intervention petition should be granted is often considered by a licensing board especially established for that purpose and, if the petition is granted, a discrete licensing board is then established to conduct all further aspects of the proceeding.”⁵

In the instant operating license proceeding, the Board at the August 21-22, 1979, special prehearing conference was following the “venerable” practice of acting as an intervention board reviewing petitions for a hearing. At the very beginning of the special prehearing conference, the parties were told that “its function is to determine whether or not there should be an evidentiary hearing in this proceeding.”⁶ The Chairman further stated:

“This proceeding is upon application for an operating license, and the Intervention Board or Petitions Board, which is what this board is, must pass upon the sufficiency of the petitions, both to show interest and standing, and then further at the prehearing conference to establish whether or not there is one or more viable contentions. If so, then a notice of hearing would be published and a licensing board would then be established. I mention this so there won’t be any confusion as to the nature and function of this special prehearing conference.”⁷

The fact that this Intervention Board was only attempting to determine whether there was at least one viable contention, in order to trigger an evidentiary hearing in an operating license proceeding, was stated repeatedly.⁸ It was eventually conceded by both the Staff and the Applicant that there were one or more viable contentions, and that therefore an evidentiary hearing should be held.⁹

The Staff at one point suggested that the Board did not need to review all of the contentions at that time, nor “come out with a prehearing order stating what the contentions are.”¹⁰ Rather, the parties could confer with each other after the special prehearing conference to arrive at “contentions

⁵ Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423, 424 (1973).

⁶ Transcript of Special Prehearing Conference held in Rockford, Illinois August 21-22, 1979 (Tr.), at 5.

⁷ Tr. 5.

⁸ Tr. 9, 13, 15-16, 18, 25-38, 53-54.

⁹ Tr. 25.

¹⁰ Tr. 26.

which can be litigable during the course of a proceeding ... These intervenors, for the most part, have been cooperating, and Mr. Goddard and I have come out to Illinois on several occasions to work with them in an effort to reduce the contentions. *Not to reduce them in number*, but reduce them to the point of clarity and specificity within the guidelines of the Commission's rules"¹¹ (Emphasis supplied).

The Staff further recommended that after the parties had negotiated, they could submit a report on contentions to the Board, which could then either issue a special prehearing order or call another conference.¹² The Applicant also indicated its willingness to proceed in this fashion.¹³

The Board then accepted these recommendations, and directed the parties to confer on contentions. There were no limitations placed on the scope, number or pedigree of contentions that might be submitted to the Board in the future, to establish the litigable issues in this OL proceeding.¹⁴ In fact, the Intervenor was expressly told that "You are not being coerced in any way or pressured by this board or any board to agree or not to agree to the formulation of your contentions, removal of them or *expansion* of them. You are perfectly free. Sit down and talk."¹⁵ (Emphasis supplied).

In this state of the record, it would be manifestly unfair to hold that the revised contentions were late or untimely. Clearly the Intervenor was granted an extension of time to confer and negotiate regarding the framing of their contentions, without time or subject limitations. If the Intervenor had been represented by counsel, it is possible that a formal request for a time extension would have been made. But it should be noted that counsel for the Applicant and the Staff did not make any requests for time or subject limitations. On the contrary, it was suggested that no prehearing order setting forth contentions was then necessary, and that further conferences among the parties might serve to provide more clarity and specificity to the contentions, but "not to reduce them in number."¹⁶

The Board also followed the Staff's suggestion that a prehearing order stating the contentions need not be entered at that time.¹⁷ In fact, no special prehearing order was entered at that time, as is usually done pursuant to the provisions of 10 CFR §2.751a. The reason for deferring an

¹¹*Id.*

¹²Tr. 27-28, 110.

¹³Tr. 30, 42.

¹⁴Tr. 36-38, 42, 44.

¹⁵Tr. 40.

¹⁶Tr. 26.

¹⁷*Id.*

order on contentions was that the Board concurred in the suggestions of the parties that further conferences and negotiations be undertaken by them regarding the framing of contentions. This Board action amounted to the granting of additional time to file contentions after conferences among the parties. The fact that some of the parties may now be disappointed because more rather than fewer contentions were ultimately filed, does not justify us in rewriting history or proceeding unfairly.

The second ground urged for reconsideration concerns the original Order's admission of contentions regarding unresolved generic safety issues.¹⁸ We adhere to our ruling that as a pleading matter, these contentions adequately plead the bases for such allegations (10 CFR §2.714). It is sufficient for an intervenor at the pleading stage merely to state his reasons (*i.e.*, the basis) for contentions,¹⁹ and he is not required to plead evidence or to establish that the assertions are well-founded in fact.²⁰

The Applicant is entitled to obtain discovery concerning the bases of these contentions, since a good deal of information is already available to the League from the FSAR and other documents. The League must furnish such information promptly, and it cannot delay until the SER or other documents are filed. The factual or evidentiary bases for such contentions may in part reflect such later information, but discovery may precede such filings, subject to later supplementation.

The third ground asserted for reconsideration concerns the admission of contentions relating to compliance with Staff Regulatory Guides.²¹ These objections, as in the original Order, are governed by the same reasons discussed under unresolved safety issues. Without attempting to become involved in the merits of these assertions, we note that the League argues that "if an Applicant chooses not to comply with a Regulatory Guide, we ought to know whether what it plans is sufficient." Its supporting footnote 8 states:

"A review of the Byron FSAR Appendix A indicates that according to Edison's own assessment, Byron does not comply, or complies only in part, with over 20% of the relevant Division 1

¹⁸ 12 NRC at 694-96.

¹⁹ Houston Lighting and Power Company (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).

²⁰ Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 AEC 423 (1973); Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-522, 9 NRC 54 (1979).

²¹ 12 NRC at 696-97.

Regulatory Guides; that as to a further 23%, the most Edison is willing to offer is a 'commitment' that at some unspecified future point, Byron will comply with the 'intent' of the Guide; and that Edison disagrees, or has 'qualifications', or reservations, or interpretations of its own, with over 20% of the pertinent Guides." (Emphasis supplied). (Memorandum of Intervenor Rockford League of Women Voters In Opposition to Petition for Reconsideration, p. 11).

The Petition for Reconsideration will be denied.

II.

The original Order entered December 19, 1980 directed that discovery should commence immediately upon all issues included in the admitted contentions. All parties are directed to proceed expeditiously with discovery and other trial preparation. The Staff's documents are expected to be issued in accordance with the following schedule:

Draft Environmental Statement	January, 1982
Final Environmental Statement	June, 1982
Safety Evaluation Report	April, 1982
Supplemental Safety Evaluation Report	May, 1982

As an aid to the parties in conducting discovery fairly and expeditiously, we incorporate herein by reference the following provisions from a recently entered Memorandum and Order in *Texas Utilities Generating Company, et al.* (Comanche Peak Steam Electric Station, Units 1 and 2), LBP-81-22, 14 NRC 150, 155-57.

"The following Commission statement regarding the purposes of and reasonable limitations upon discovery, is brought to the attention of all parties to this proceeding:

"Board Management of Discovery

"The purpose of discovery is to expedite hearings by the disclosure of information in the possession of the parties which is relevant to the subject matter involved in the proceeding so that issues may be narrowed, stipulated, or eliminated and so that evidence to be

presented at hearing can be stipulated or otherwise limited to that which is relevant. The Commission is concerned that the number of interrogatories served in some cases may place an undue burden on the parties, particularly the NRC staff, and may, as a consequence, delay the start of the hearing without reducing the scope or the length of the hearing.

"The Commission believes that the benefits now obtained by the use of interrogatories could generally be obtained by using a smaller number of better focused interrogatories and is considering a proposed rule which would limit the number of interrogatories a party could file, absent a ruling by the Board that a greater number of interrogatories is justified. Pending a Commission decision on the proposed rule, the Boards are reminded that they may limit the number of interrogatories in accordance with the Commission's rules.

"Accordingly, the boards should manage and supervise all discovery, including not only the initial discovery directly following admission of contentions, but also any discovery conducted thereafter. The Commission again endorses the policy of voluntary discovery, and encourages the boards, in consultation with the parties, to establish time frames for the completion of both voluntary and involuntary discovery. Each individual board shall determine the method by which it supervises the discovery process. Possible methods include, but are not limited to, written reports from the parties, telephone calls, and status report conferences on the record. In virtually all instances, individual boards should schedule an initial conference with the parties to set a general discovery schedule immediately after contentions have been admitted." (Statement of Policy on Conduct of Licensing Proceedings, May 20, 1981, pp. 5-6.)

The large number of motions and disputes relating to interrogatories and discovery lead the Board to conclude that the matter has almost gotten out of hand. It is similar to the "farrago of motions, objections and rulings" described by the Appeal Board in *Pennsylvania Power and Light Company, et al.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 337 (1980). Such a blizzard of paper reflects a lack of understanding that discovery is intended by our rules of practice to be conducted by the parties, usually without Board involvement. Those rules, like their judicial counterparts, "attempt to minimize involvement by the trial board." (*Id.*, at 322.)

To clarify and expedite further discovery in this proceeding, the Board adopts the following measures:

1. All parties are directed to confer directly with each other regarding alleged deficiencies in discovery before resorting to motions involving the Board. To this end, voluntary discovery and disclosure are highly encouraged. All motions involving discovery controversies shall describe fully the direct efforts of the parties to resolve such disputes themselves.
2. We reaffirm a rule previously adopted, requiring that pursuant to the provisions of 10 CFR §2.740(e)(3), all interrogatories filed by any party to this proceeding, past or future, shall be deemed to be continuing in nature, and the party to whom they are addressed shall be under a continuing duty to supplement the responses as necessary to keep them currently accurate.
3. Objections to interrogatories or document requests shall be set forth in an appropriate motion for protective order, accompanied by points and authorities sufficient to enable the Board to rule immediately upon receipt of the opposing party's answer to be filed within ten (10) days (10 CFR §§2.718, 2.730, 2.740, 2.740b, 2.741).
4. All filings scheduled by the Board shall be physically lodged with the Board and parties on or before the due date, not merely mailed on that date. Expedited or following day delivery shall be employed when necessary.
5. The sheer number, volume and complexity of interrogatories should be substantially reduced. Boiler plate formulas involving unnecessary and redundant details should be avoided. The Board will consider limiting the number of interrogatories in accordance with the Commission's suggestion above, to achieve a smaller number of better focused interrogatories.
6. A failure to furnish requested information based upon a claim of awaiting further discovery is unresponsive unless precise information is given as to the nature and status of pending discovery, and a specification of the relevancy of such facts to the requested information.
7. All discovery shall be expedited to the maximum extent reasonably possible, to accommodate an accelerated hearing schedule that will be issued shortly.
8. A party who files a motion shall not have a right to reply to an answer in opposition thereto, unless prior leave is obtained from the presiding officer (10 CFR §2.730(c)). Such leave will be granted sparingly, and then only upon a strong showing of good cause.

9. The parties are reminded that interrogatories are not the sole discovery method established by our Rules of Practice (10 CFR §§2.740-2.742). A well-timed deposition can often accomplish more than six months of back-and-forth fencing over interrogatories and answers.

The following comments by the Appeal Board in *Susquehanna*, *supra*, may also be of assistance:

“General objections, such as the objection that the interrogatories will require the party to conduct research and compile data, or that they are unreasonably burdensome, oppressive, or vexatious, or that they seek information that is as easily available to the interrogating as to the interrogated party, or that they would cause annoyance, expense, and oppression to the objection party without serving any purpose relevant to the action, or that they are duplicative of material already discovered through depositions, or that they are irrelevant and immaterial, or that they call for opinions and conclusions, are insufficient.”²²

III.

The Applicant filed a motion on July 30, 1981 to compel the League to answer interrogatories directed to it on July 8, 1981. Responses to these discovery requests were alleged to be due by July 27, 1981. Objections to those interrogatories were filed by the League on August 5, and a response to the motion to compel discovery was filed by it on August 7, 1981.

The League's objections based largely upon the argument that the four interrogatories are premature, are denied. While more information may be available when the SER is filed, there is presently available a large amount of documentary and other information. The movant is entitled to full and responsive answers based upon the presently known status of these matters, and to additional information when it becomes available.

The League's response to the motion to compel discovery is likewise overruled. The involvement of a party's lawyers in litigation or other professional business does not excuse noncompliance with nor extend deadlines for compliance with our rules of practice. The League's response is also a bit too casual about the length of time available for trial preparations leading to the commencement of evidentiary hearings. A schedule will be issued soon by the Board. However, a large number of somewhat

²²12 NRC at 323.

complex contentions have been filed by the League, and the Applicant is not required to delay discovery or trial preparation.

The last point relied on by the League's response concerns the request for consultation on discovery between or among the parties. This request is covered by paragraph 1 of the discovery rules set forth *supra*. The parties will be allowed a reasonable period of time to confer. However, responsive answers shall be filed to these and other interrogatories promptly, and discovery shall be conducted expeditiously.

The Applicant also filed a motion on July 30, 1981 to compel DAARE and SAFE to answer interrogatories served upon them July 8, 1981. It was alleged that responses were due by July 27, 1981.

As of this date, DAARE and SAFE have neither answered nor objected to these interrogatories. Accordingly, they are ordered to file responsive answers forthwith.

ORDER

For all the foregoing reasons and based upon a consideration of the entire record, it is this 18th day of August, 1981

ORDERED

- (1) That the Applicant's petition for reconsideration of the Memorandum and Order entered December 19, 1980, is denied.
- (2) That discovery shall proceed expeditiously in accordance with the guidelines set forth in Section II, *supra*, and the Commission's Rules of Practice.
- (3) That the Applicant's motion to compel discovery by the League is granted, subject to a prompt conference between the parties.
- (4) That the Applicant's motion to compel discovery by DAARE and SAFE is granted, and those Intervenors are directed to file responsive answers to interrogatories forthwith.

FOR THE
ATOMIC SAFETY AND
LICENSING BOARD

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

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

In the Matter of

Docket Nos. 50-409-OL
50-409-SC
(Provisional Operating
License DPR-45)

DAIRYLAND POWER COOPERATIVE
(La Crosse Boiling Water Reactor)

August 19, 1981

The Board orders the consolidation of an operating license proceeding (to convert a provisional operating license to a full-term license) with another proceeding resulting from a Commission show-cause order.

RULES OF PRACTICE: CONSOLIDATION

Under 10 CFR 2.716, consolidation is permitted if found to be conducive to the proper dispatch of the Board's business and to the ends of justice.

MEMORANDUM AND ORDER
(Consolidating Show Cause and
Operating License Proceedings)

Pending before this Licensing Board are two proceedings. The first (OL proceeding) concerns the application of Dairyland Power Cooperative (hereinafter "Applicant" or "Dairyland") for a full-term operating license for the La Crosse Boiling Water Reactor (LACBWR), a 50 MW reactor

located in Genoa, Wisconsin.¹ The other proceeding (SC proceeding) resulted from the Commission's Order to Show Cause, dated February 25, 1980.² The NRC Staff has filed a motion to consolidate these proceedings. The Applicant supports the motion, and no other party has responded. For the reasons which follow, and subject to certain conditions, we grant the Staff's motion.

1. The Notice of Hearing in the OL proceeding was published more than three years ago.³ Hearings on safety issues have awaited completion of the Staff's Safety Evaluation Report (SER), which in turn must await the completion of the Staff's Systematic Evaluation Program (SEP), a program under which the NRC Staff is reviewing the eleven oldest, operating plants (including LACBWR) against the NRC's current design criteria for nuclear power plants.⁴ One of the matters to be dealt with by the SEP program is an evaluation of the adequacy of the seismic design of SEP plants.

The SC proceeding commenced well after the OL proceeding was under way.⁵ The contested matters essentially have focused on two questions: (1) the necessity of a site dewatering system to preclude liquefaction in the event of a magnitude 5.0-5.5 earthquake producing a peak ground acceleration of 0.12g at the site; and (2) whether the seismic parameters, particularly the 0.12g acceleration value, applied by the NRC Staff and Dairyland in responding to the foregoing question are appropriate.⁶ In our Partial Initial Decision of February 24, 1981, LBP-81-7, 13 NRC 257, we found no necessity for a site dewatering system to preclude liquefaction in the event of an earthquake producing peak ground acceleration at the site of 0.12g. We did not address the second question inasmuch as the Staff was still undertaking its review of the seismic parameters. However, we reiterated our earlier conclusion of the necessity of definitively ascertaining the size of the safe shutdown earthquake (SSE), including the resultant ground acceleration, prior to any final determination of the need for a site dewatering system. We also determined that there was no undue risk to

¹ Dairyland is currently operating LACBWR pursuant to provisional operating license DPR-45.

² Published at 45 Fed. Reg. 13850 (March 3, 1980).

³ 43 Fed. Reg. 28261 (June 29, 1978).

⁴ Also at issue in the OL proceeding are certain environmental issues. The Staff issued its Final Environmental Statement (FES) in April, 1980. Pretrial procedures concerning environmental issues, and the environmental hearings, were postponed during the pendency of the SC proceeding. Order dated September 29, 1980 (unpublished).

⁵ The Notice of Hearing was published at 45 Fed. Reg. 66537 (October 7, 1980).

⁶ The latter issue was raised by the Board, which determined that it was within the scope of the SC proceeding. See LBP-80-26, 12 NRC 367, 376-78 (1980); ALAB-618, 12 NRC 551 (1980). By a 2-2 vote, the Commission declined to review ALAB-618. Letter to O. S. Hiestand from S. J. Chilk (April 21, 1981).

the public health and safety in permitting operation *pendente lite*, without installation of a site dewatering system.

2. In seeking consolidation, the Staff points out that the only remaining issue in the SC proceeding—the seismic issue—is subsumed within the seismic design issue being evaluated in the SEP program. We have not yet ruled on health and safety contentions in the OL proceeding, pending completion of the SEP program and issuance of the Staff's SER based on it. It is clear, however, that the seismic issue in the SC proceeding could as well be litigated in the OL proceeding; indeed, as the Staff points out, the scope of the OL review, and the remedies we could consider in the OL proceeding (if any remedies for liquefaction were warranted), are considerably broader than in the SC proceeding. In short, the Staff claims that determination of the SSE and the associated ground acceleration in both proceedings involves consideration of the same geologic and seismic data, scientific analyses, and expert opinion. The Staff further asserts that the commonality between the two proceedings extends to the makeup of the Licensing Board and (with one exception)⁷ the parties. Finally, the Staff concludes that consolidation would provide savings in both time and expense to all parties and would help ease the burden on the resources of the NRC Staff and Licensing Board Panel.

We agree with the Staff that consolidation would achieve the benefits described.⁸ Under the Commission's Rules of Practice, consolidation is permitted if found to be "conducive to the proper dispatch of [the Board's] business and to the ends of justice." 10 CFR §2.716. This rule has been construed by the Commission as mirroring Rule 42(a) of the Federal Rules of Civil Procedure, which provides for consolidation of proceedings that, *inter alia*, involve common questions of law or fact. *Edlow International Co.* (SNM Export), CLI-77-16, 5 NRC 1327, 1328 (1977). As we have seen, these two proceedings do so. Furthermore, there is precedent for the consolidation of Commission enforcement and licensing proceedings. See, e.g., *Consumers Power Co.* (Midland Plant, Units 1 and 2), Prehearing Conference Order Ruling on Contentions and on Consolidation of Proceedings (unpublished), slip op. pp. 13-14 (October 24, 1980); *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2),

⁷ The Staff would have us permit that party to participate in the consolidated aspects of the OL-SC proceeding.

⁸ We note, however, that failure to consolidate might not result in "two separate hearings on the SSE", as claimed by the Staff. Relitigating any aspects of the SSE matter heard in the SC proceeding might be obviated through application of principles of *res judicata* or collateral estoppel. Cf. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 26-27 (1978); *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), CLI-74-12, 7 AEC 203 (1974).

LBP-74-49, 7 AEC 1183, 1185 (1974). Finally, no party has objected to the consolidation and no party would apparently be adversely affected thereby. The Applicant, the NRC Staff, and the Coulee Region Energy Coalition (CREC) are parties to both proceedings and may participate in all aspects of either proceeding, whether or not consolidated. Mr. Frederick M. Olsen, III, is an intervenor in the SC proceeding but not the OL proceeding. He has been consolidated with CREC in the SC proceeding (LBP-80-26, *supra*, 12 NRC at 375), and he will be permitted to participate in the same capacity in the consolidated proceeding insofar as the liquefaction question (and the proposed dewatering system) are considered. No prejudice to any party will thus arise from consolidation. We find, therefore, that consolidation would be consistent with the provisions of 10 CFR §2.716—but with one *caveat*.

This *caveat* stems from the delay in completion of the SC proceeding which likely will result from consolidation. Delay in one proceeding is a factor which we may take into account in determining whether consolidation of two proceedings is appropriate. *Alabama Power Co.* (Alan R. Barton Nuclear Plant, Units 1-4, and Joseph M. Farley Nuclear Plant, Units 1 and 2), CLI-75-12, 2 NRC 373, 374 (1975). The Staff acknowledges that, absent consolidation, it intends to submit an evaluation of the seismic issue in the SC proceeding by September 1, 1981. It also concedes that it presently estimates that the SEP evaluation for LACBWR will not be issued before the spring of 1982.⁹ Consolidation thus might lead to a delay of at least 6-9 months in completing the SC proceeding.

The Staff sees no safety significance in such delay. It relies on our calculation in LBP-81-7 that it might take until late 1981 or longer to litigate the seismic question in the SC proceeding, and on our conclusion that *operation pendente lite* presents no undue risk. LBP-81-7, *supra*, 13 NRC at 263, 274, 279. Moreover, the Staff claims that any urgency in resolving the show-cause proceeding stemmed from the NRC Staff's original concern, expressed in the show-cause order, that liquefaction might occur at the LACBWR site as a result of an earthquake producing 0.12g peak ground acceleration. According to the Staff, our determination that liquefaction under pile-supported structures at LABWR would not result from the 0.12g earthquake effectively resolved any uncertainties raised in the show-cause order which required some urgency in completing the SC proceeding. In addition, the Staff cites "uncontroverted evidence" admitted at the December, 1980 evidentiary hearing that the 0.12g value is a

⁹ In light of past history, the possibility of additional delays in the SEP program cannot be ruled out. We note that, as of June, 1981, the SEP review for LACBWR was only 43% complete. NUREG-0485, Vol. 3, No. 8 (June 30, 1981), p. 1-7. A draft SER is not expected to issue until September 30, 1982. *Id.*

reasonable estimate of seismic hazard from which to judge liquefaction potential at LACBWR.

We perceive the safety significance of the potential delay from a somewhat different viewpoint. In the first place, we made no findings in LBP-81-7 that the 0.12g value is a reasonable estimate of seismic hazard at LACBWR. Neither did we find it unreasonable. Beyond that, the reason we decided to raise the seismic issue in the SC proceeding is still extant—*i.e.*, the Staff's use of a 0.20g acceleration value at a nearby site, based on a deterministic application of the provisions of 10 CFR Part 100, Appendix A. See LBP-80-26, *supra*, 12 NRC at 377. Moreover, in deferring *sua sponte* review of LBP-81-7, the Appeal Board expressed the view that we should bring the SC proceeding to its ultimate conclusion "with due dispatch". Order dated March 30, 1981 (unpublished).

On the other hand, the Staff is correct in pointing out that our decision in LBP-81-7 removed much of the urgency in resolving the seismic issue in the SC proceeding. We specifically held that the hazard of liquefaction which might arise from an earthquake larger than 0.12g is lower than that accepted by the Staff (and the Commission) in the show-cause order as satisfactory for continued operation for a one-year period. 13 NRC at 278. That being so, acceptance of risk comparable to that accepted in the show-cause order would permit operation to continue well into 1982, if not longer.

Given these circumstances, we find the benefits of consolidation relied on by the Staff to outweigh the marginal increase in risk which might result. To minimize any such risk, however, we are conditioning the consolidation upon the Staff's separation of the seismic review (insofar as it involves the determination of the SSE and the resulting peak ground acceleration at the site) from the remainder of the SEP review.¹⁰ Such separation will permit litigation of those seismic issues prior to other safety or environmental issues. Although we recognize that the SEP seismic review may be more comprehensive than the review which would be undertaken for the SC proceeding, we would expect that at least the relevant portion of the Staff's seismic review could be completed prior to the spring of 1982, although not necessarily by September, 1981. We direct the Staff to furnish us quarterly reports (beginning October 1, 1981) on the progress of the SEP seismic review for LACBWR.

¹⁰ The progress of the seismic SEP review for LACBWR (Topic II-4) appears to be much further advanced than the SEP program as a whole. NUREG-0485, Vol. 3, No. 8, *supra*, at p. 2-19.

3. As a result of consolidation, we see no reason to continue the delay in pretrial procedures concerning environmental issues imposed by our Order of September 29, 1980. Those procedures may now be resumed. As requested by the Staff, its motion of April 9, 1981 to compel the consolidated parties' response to interrogatories is dismissed without prejudice to refileing interrogatories during the discovery period for the consolidated proceeding. With respect to seismic issues, that period will commence at this time. We will establish further discovery guidelines after issuance of the Staff's report on the SSE and ground-acceleration issues.

For the foregoing reasons, it is, this 18th day of August, 1981
ORDERED

1. That, subject to the conditions outlined herein, the Staff's Motion for Consolidation of Proceedings is hereby *granted*.

2. That the Board's Order dated September 29, 1980 imposing a delay in pretrial procedures concerning environmental issues in the OL proceeding is hereby *rescinded*.

3. That the Staff's motion dated April 9, 1981, to compel response to interrogatories is hereby *dismissed*, without prejudice to the refileing of interrogatories on seismic questions in the OL proceeding.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

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

In the Matter of

Docket No. 50-289-SP
(Restart)

METROPOLITAN EDISON COMPANY
(Three Mile Island Nuclear Station,
Unit 1)

August 27, 1981

In this proceeding to determine whether and the conditions under which Unit 1 of the facility should be allowed to resume operation, the Licensing Board issues a partial initial decision on the matter of the licensee's management capability to operate the Unit, reserving for later decision issues on plant design and procedures, separation of the facility's two units, and emergency planning. With the exception of an issue relating to operator examination over which it is retaining jurisdiction, the Board finds that the licensee has demonstrated the managerial capability and technical resources to operate Unit 1 while maintaining Unit 2 in a safe configuration and carrying out planned decontamination and restoration activities for that Unit; that the licensee has complied with the Commission's short-term recommendations related to management competence specified in NUREG-0578; and that it has made reasonable progress toward completion of long-term recommendations related to management competence specified in NUREG-0578.

RULES OF PRACTICE: APPELLATE PROCEDURE

A Licensing Board's partial initial decision upholding the applicant's selection of a site is immediately appealable notwithstanding the fact that it does not authorize any construction activity where there would be a long hiatus before further findings. *Houston Power and Lighting Company*

(Allens Creek Nuclear Generating Station, Units 1 and 2), ALAB-301, 2 NRC 853, 854 (1975).

RULES OF PRACTICE: APPELLATE PROCEDURE

A partial initial decision favorable to the applicant on the issue of alternate construction sites is immediately appealable notwithstanding the fact that it neither authorizes any construction activity nor contemplates a long hiatus before further findings. *Duke Power Company* (Perkins Nuclear Station, Units 1, 2 and 3), ALAB-597, 11 NRC 870 (1980).

APPEARANCES

Licensee, General Public Utilities Nuclear Corporation:

George F. Trowbridge, Thomas A. Baxter, Ernest L. Blake, Jr., Robert E. Zahler, Deborah B. Bauser, Harry H. Glasspiegel, and Delissa A. Ridgway, Esquires;
Shaw, Pittman, Potts & Trowbridge

Nuclear Regulatory Commission Staff:

James R. Tourtellotte, James M. Cutchin, IV, Joseph R. Gray, Daniel T. Swanson, Stephen H. Lewis, Marcia E. Mulkey, Lisa N. Singer, and Lucinda Low Swartz, Esquires

Commonwealth of Pennsylvania:

Robert W. Adler, Karin W. Carter, and Michele Straube, Esquires; Mr. William P. Dornsife

Mrs. Marjorie M. Aamodt and Mr. Norman O. Aamodt, *pro se*

Anti-Nuclear Group Representing York:

Ms. Gail Phelps Bradford; John Bowers and Daniel Wolfson, Esquires

Chesapeake Energy Alliance:

Mr. Robert Q. Pollard

Environmental Coalition on Nuclear Power:

Dr. Judith H. Johnsrud and Dr. Chauncey Kepford

Mr. Marvin I. Lewis, *pro se*

Newberry Township T. M. I. Steering Committee:

Jordan D. Cunningham, Esquire; Fox, Farr & Cunningham

New Jersey Board of Public Utilities:

Thomas J. Germine, Esquire

Mr. Steven C. Sholly, *pro se*

Pennsylvania Consumer Advocate:

Walter W. Cohen, Irwin A. Popowsky, and Jerome K. Blask,
Esquires

Pennsylvania Public Utility Commission:

John A. Levin, Esquire

Three Mile Island Alert, Inc.:

Theodore A. Adler, Larry B. Selkowitz, Mark P. Widoff,
Esquires, Mr. Dennis J. Bonetti, Widoff Reager Selkowitz &
Adler; Ms. Louise Bradford and Mr. John Murdoch

Union of Concerned Scientists:

Ellyn R. Weiss, Esquire; Harmon & Weiss; Mr. Robert D.
Pollard

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PARTIAL INITIAL DECISION
(Procedural Background And Management Issues)

I. INTRODUCTION AND BACKGROUND

A. Commission Hearing Orders

1. Metropolitan Edison Company (Licensee or Met Ed) is the holder of Facility Operating License No. DPR-50 which authorized the operation of Three Mile Island Nuclear Station, Unit No. 1 (the facility or TMI-1), at steady state power levels not in excess of 2535 megawatts thermal (rated power). The facility is a Babcock and Wilcox (B&W) designed pressurized water reactor (PWR) located at the Licensee's site ten miles southeast of Harrisburg, Pennsylvania.

2. The Licensee is also the holder of Facility Operating License No. DPR-73, which had authorized the operation of the Three Mile Island Nuclear Station, Unit No. 2 (TMI-2) at power levels up to 2772 megawatts thermal. TMI-2 is located at the same site as TMI-1, and is also a B&W designed PWR.

3. On March 28, 1979, TMI-2 experienced a severe feedwater transient that led to a series of events culminating in a partially mitigated loss-of-coolant accident (LOCA) with significant core damage. At the time of the accident, TMI-1 was in a power ascension mode after completing a refueling outage and was immediately shut down by the Licensee. At the request of the NRC Project Manager, Licensee orally committed on March 28, 1979, to give the NRC "significant advance notice" prior to taking TMI-1 out of cold shutdown. This oral commitment was later confirmed in a letter to the NRC dated April 16, 1979.

4. On July 2, 1979, the Commission issued an Order directing that TMI-1 be maintained in a shutdown condition pending further order of that Commission. The Commission based this action on its conclusion that,

In view of the variety of issues raised by the accident at the Three Mile Island Unit No. 2 facility, the Commission presently lacks the requisite reasonable assurance that the same licensee's Three Mile Island Unit No. 1 facility, a nuclear power reactor of similar design, can be operated without endangering the health and safety of the public.

The Commission further determined that it was in the public interest that a hearing precede the restart of TMI-1.

5. In its Order and Notice of Hearing dated August 9, 1979, *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), CLI-79-8, 10 NRC 141 (1979), the Commission specified the basis for its concerns about the operation of TMI-1 and set forth the procedures to govern further proceedings which would determine "whether any further operation will be permitted and, if so, under what conditions." In that Order, the Commission appointed this Atomic Safety and Licensing Board to rule on petitions to intervene and to conduct the public hearing on the restart of TMI-1.

6. The August 9, 1979 Order noted that the NRC Staff's evaluation of the TMI-2 accident led the Staff to conclude "that B&W designed reactors are unusually sensitive to certain off-normal transient conditions originating in the secondary system." 10 NRC 141 at 143. Because of certain design features, the Order noted that the Staff had concluded that B&W designed reactors

place more reliance on the reliability and performance characteristics of the auxiliary feedwater system, the integrated control system, and the emergency core cooling system (ECCS) performance to recover from frequent anticipated transients, such as loss of offsite power and loss of normal feedwater, than do other PWR designs.

The Order stated that the Staff concluded further that this, in turn, "places a large burden on the plant operators in the event of off-normal system behavior during such anticipated transients." 10 NRC 141 at 143.

7. The August 9th Order explained that after a preliminary review of the TMI-2 accident chronology, the NRC Staff had initially identified several human errors that occurred during the accident, contributing significantly to its severity. The NRC Staff began an immediate reevaluation of the design features of B&W reactors to determine if additional safety improvements were necessary. As a result of the evaluation, all holders of operating licenses except Met Ed were instructed to take a number of immediate actions to avoid a repetition of errors, in accordance with bulletins issued by the Commission's Office of Inspection and Enforcement (IE). In addition, B&W owners were issued an IE Bulletin instructing them to take certain actions concerning B&W's unusual sensitivity to certain off-normal transient conditions originating in the secondary system. Besides the items identified for other B&W reactors, the NRC Staff identified additional safety concerns for TMI-1 to be

resolved prior to restart.¹

8. Based on these reviews and concerns, the Commission's Director of Nuclear Reactor Regulation (NRR) recommended that certain "short-term actions" be required of the Licensee to resolve the Commission's concerns and to permit a finding of reasonable assurance that the facility can safely resume operation. These are:

1. The licensee shall take the following actions with respect to TMI-1:
 - (a) Upgrade the timeliness and reliability of the Emergency Feedwater (EFW) system by performing the items specified in Enclosure 1 of the licensee's June 28, 1979 letter. Changes in design will be submitted to the NRC staff for review.
 - (b) Develop and implement operating procedures for initiating and controlling EFW independent of Integrated Control System (ICS) control.
 - (c) Install a hard-wired control grade reactor trip on loss of main feedwater and/or on turbine trip.
 - (d) Complete analyses for potential small breaks and develop and implement operating instructions to define operator action.
 - (e) Augment the retraining of all Reactor Operators and Senior Reactor Operators assigned to the control room including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident. All operators will also receive training at the B&W simulator on the TMI-2 accident and the licensee will conduct a 100 percent reexamination of all operators in these areas. NRC will administer complete examinations to all licensed personnel in accordance with 10 CFR 55.20-23.

¹ These concerns resulted from (1) potential interaction between Unit 1 and the damaged Unit 2, (2) questions about the management capabilities and technical resources of Met Ed, including the impact of the Unit 2 accident on these, (3) the potential effect of operations necessary to decontaminate the Unit 2 facility on Unit 1, and (4) recognized deficiencies in emergency plans and station operating procedures. 10 NRC 141 at 143-44.

2. The licensee shall provide for NRC review and approval of all applicable actions specified in IE Bulletins 79-05A, 79-05B, and 79-05C.
3. The licensee shall improve his emergency preparedness in accordance with the following:
 - (a) Upgrade emergency plans to satisfy Regulatory Guide 1.101 with special attention to action level criteria based on plant parameters.
 - (b) Establish an Emergency Operations Center for Federal, State and Local Officials and designate a location and an alternate location and provide communications to plant.
 - (c) Upgrade offsite monitoring capability, including additional thermo-luminescent dosimeters or equivalent.
 - (d) Assess the relationship of State/Local plans to the licensee plans so as to assure the capability to take emergency actions.
 - (e) Conduct a test exercise of its emergency plan.
4. The licensee shall demonstrate that decontamination and/or restoration operations at TMI-2 will not affect safe operations at TMI-1. The licensee shall provide separation and/or isolation of TMI-1/2 radioactive liquid transfer lines, fuel handling areas, ventilation systems, and sampling lines. Effluent monitoring instruments shall have the capability of discriminating between effluents resulting from Unit 1 or Unit 2 operations.
5. The licensee shall demonstrate that the waste management capability, including storage and processing, for solid, liquid, and gaseous wastes is adequate to assure safe operations of TMI-1, and that TMI-1 waste handling capability is not relied on by operations at TMI-2.
6. The licensee shall demonstrate his managerial capability and resources to operate Unit 1 while maintaining Unit 2 in a safe configuration and carrying out planned decontamination and/or restoration activities. Issues to be addressed include the adequacy of groups providing safety review and operational advice, the management and technical capability and training of operations staff, the adequacy of the operational Quality

Assurance program and the facility procedures, and capability of important support organizations such as Health Physics and Plant Maintenance.

7. The licensee shall demonstrate his financial qualifications to extent relevant to his ability to operate TMI-1 safely.
8. The licensee shall comply with the Category B recommendations as specified in Table B-1 of NUREG-0578

10 NRC 141 at 144-45.

9. The Commission said it had additional concerns, which, they need not be resolved prior to resumption of TMI-1 operation, must be satisfactorily addressed in a timely manner. The Director of NRC recommended that certain "long-term actions" be required of licensee to permit a finding of reasonable assurance of long-term operation. These

1. submit a failure mode and effects analysis of the ICS to NRC Staff as soon as practicable;
2. give continued attention to transient analysis and procedure management of small breaks by a formal program set up to assure timely action of these matters;
3. comply with the Category B recommendations as specified in Table B-1 of NUREG-0578; and,
4. improve emergency preparedness in accordance with following:
 - (a) modify emergency plans to address changing capabilities of plant instrumentation,
 - (b) extend the capability to take appropriate emergency action for the population around the site to a distance of 10 miles.

10 NRC 141, at 145.

²NUREG-0578 is the TMI-2 Lessons Learned Task Force Status Report.

10. In its August 9, 1979 Order the Commission set out the subjects to be included and considered at this hearing:

1. Whether the "short-term actions" recommended by the Director of Nuclear Reactor Regulation are necessary and sufficient to provide reasonable assurance that the TMI-1 facility can be operated without endangering the health and safety of the public, and should be required before resumption of operation should be permitted.
2. Whether the "long-term actions" recommended by the Director of Nuclear Reactor Regulation ... are necessary and sufficient to provide reasonable assurance that the facility can be operated for the long term without endangering the health and safety of the public, and should be required of the licensee as soon as practicable.

10 NRC 141, at 148

11. The Commission's Order further guided the Board:

If the Board determines that operation can be resumed upon completion of certain specific short-term actions by the licensee, it shall consider the extent to which the licensee has demonstrated reasonable progress toward completion of the long-term actions described in this section. If it finds that the licensee has demonstrated reasonable progress, it shall recommend resumption of operation upon completion of the short-term actions. If it cannot make such a finding, it shall recommend that operation be resumed at a date that it believes appropriately reflects the importance of the action involved, the time lost because such progress had not been made on the prescribed schedule and the overriding need to provide adequate protection for the public health and safety.

10 NRC 141, at 146.

12. The Order further provided that the hearing before this Board should be conducted in accordance with the provisions of the Commission's Rules of Practice governing adjudicatory licensing proceedings, but urged the Board to use its regulatory authority to expedite the proceeding.

13. The Commission on March 6, 1980, issued another Order, CLI-80-5, providing further guidance regarding the management competence issues by specifying 13 specific issues which the Board should examine. These issues are individually discussed in the management capability section of this decision. 11 NRC 408.

14. On March 14, 1980, the Commission issued a further Order to make clear that it was intended by the Commission that any party to the proceeding might raise as an issue whether one or more safety concerns, not specifically listed as "short-term" in the Commission's August 9, 1979 Order should be satisfactorily resolved prior to startup, so long as they satisfy the requirements (e.g., specificity and basis) applicable to contentions generally and there is a reasonable nexus between the issue and the TMI-2 accident. The Board's rulings on contentions had from the outset followed this approach and continued to do so throughout the proceeding.³

15. Finally, on March 23, 1981, the Commission issued a further order (CLI-81-3) modifying its August 9, 1979 Order and removing the matter of Licensee's financial qualifications from the scope of this proceeding.

B. Interventions and Appearances

16. Many entities filed petitions to intervene in August and September 1979. The Board admitted the following petitioners in this proceeding; Union of Concerned Scientists (UCS), Three Mile Island Alert, Inc. (TMIA), Mr. Marvin I. Lewis,⁴ Mrs. Marjorie Aamodt, Mr. Steven C. Sholly, Anti-Nuclear Group Representing York (ANGRY), Environmental Coalition on Nuclear Power (ECNP),⁵ Chesapeake Energy Alliance (CEA), Newberry Township TMI Steering Committee (Newberry Petitioners). Memorandum and Order Ruling on Petitions and Setting Special Prehearing Conference (September 21, 1979); First Special Prehearing Conference Order, 10 NRC 828 (December 18, 1979). The Commonwealth of Pennsylvania, the Pennsylvania Public Utility Commission, the New Jersey Board of Public Utilities, the Pennsylvania Consumer Advocate and Dauphin County were admitted as special participants under 10 CFR 2.715(c). The Commonwealth of Pennsylvania participated actively and helpfully in all phases of the hearing and presented direct testimony on the Commonwealth's emergency plan. The

³ Memorandum and Order, March 28, 1980.

⁴ The Board ruled that Mr. Lewis had not shown standing in the proceeding and therefore dismissed most of Mr. Lewis' contentions. However, as a matter of discretion, the Board did allow Mr. Lewis to intervene solely with respect to his contention on the adequacy of the TMI-1 filter system for radioactive effluents — a contention not advanced by any other intervenor.

⁵ In May of 1980 the Licensee moved for sanctions against ECNP based on this intervenor's failure to comply with a Board Order compelling discovery. We declined to dismiss ECNP as a party but did dismiss many of its contentions. *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 1), LBP-80-17, 11 NRC 893 (1980).

Pennsylvania Public Utility Commission and the Pennsylvania Consumer Advocate participated in very limited phases of the hearing. Dauphin County and the New Jersey Board of Public Utilities did not participate in any of the evidentiary hearing.

17. Although we found that petitioner, People Against Nuclear Energy (PANE), had standing, we deferred ruling on its status as an intervenor until the Commission determined whether psychological stress issues (the only issues sought to be litigated by PANE) could be considered. First Special Prehearing Conference Order, *supra*, 10 NRC at 850; Memorandum and Order of September 21, 1979, *supra*. The Board certified this question to the Commission in *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 1), LBP-80-8, 11 NRC 297 (1980), where we concluded the Commission within its discretion may and should consider psychological stress under National Environmental Policy Act (NEPA) for the purpose of mitigating community fears about the operation of TMI-1. The Commission in a Memorandum and Order, CLI-80-39, 10 NRC 607 (December 5, 1980), was evenly divided on the question. A vote of 2-2 on this question constituted an effective denial of requests to admit the psychological stress issue. We were told to consider this a denial of these contentions and that "there is no authorization for the Board to admit psychological stress contentions." The Commission noted it would reconsider the question upon confirmation of a fifth Commissioner.

18. The Board denied petitions to intervene by Ms. Jane Lee, Ms. Frieda Berryhill, representing the Coalition of Nuclear Power Plant Postponement, First Special Prehearing Conference Order, *supra*, 10 NRC at 850-52 and 854-56, and Victaulic Company, *et al.*, Memorandum and Order (September 2, 1980), either for lack of standing or failure to advance an acceptable contention, or both.

19. The Board received more than 2,000 written limited appearance statements directed either to the Board or to one or more Commissioners, which we considered and directed to be placed in the public record. In addition, the Board held special sessions to hear oral limited appearances on November 15, 16 and 17, 1979, again on March 5, 1981, and many times subsequently during the evidentiary hearings. Over 200 individuals availed themselves of the opportunity to make oral statements.

20. The record of the hearing includes the written and oral testimony of witnesses presented by Licensee, the NRC Staff, the Commonwealth of Pennsylvania, UCS, ANGRY, ECNP, TMIA and Ms. Aamodt. The Board itself initiated the appearance of two County Emergency Coordinators as witnesses. Their testimony was potentially important to the record but had no sponsor among the parties. The Commonwealth managed these witnesses as an accommodation to the Board.

21. In the findings of fact below, citations to the direct written testimony received into evidence refer only to the last name of the witness(es) and to the transcript page immediately preceding the prepared testimony. We have also attached an alphabetical listing by witness, Appendix A to this decision, which fully identifies each piece of testimony sponsored by each witness and which identifies the location in the transcript of all of the written testimony.

22. The record also includes exhibits which were offered and received into evidence or rejected by the Board. Appendix B to this decision is a list of exhibits which were marked for identification and identifies those exhibits received or rejected by the Board.

C. Rulings on Contentions

23. The contentions which were allowed by the Board are enumerated later in this decision and are not repeated here. Nor does the Board attempt to recite the disposition of each of the many contentions which were challenged by Licensee or the Staff and which were either disallowed or revised by the Board. We recite, however, some of the main principles which guided the Board in its rulings on contentions.

Scope of Proceeding

24. The Board addressed the question of the scope of the hearing in the First Special Prehearing Conference Order, 10 NRC 828 (December 18, 1979). We rejected Licensee's position that only contentions related to the bases for suspending TMI-1's operating authority, as recited in the Commission's August 9, 1979 Order, should be allowed. In rejecting this position, the Board ruled, *inter alia*, that the charge of the Commission to consider the "sufficiency" of the recommended short- and long-term actions clearly drew the scope of the proceeding beyond the limits urged by the Licensee. The Board also rejected the position of several intervenors that any contention be allowed which would be allowable in an initial operating license proceeding. The Board ruled instead, in agreement with the position of the NRC Staff and UCS (joined in its view by several other intervenors), that it would admit any otherwise allowable contention having a reasonable nexus to the TMI-2 accident. This principle guided the Board both in ruling on the admissibility of contentions and in its subsequent rulings on the admissibility of direct testimony, the scope of cross-examination, and in rulings on discovery.

Class 9 Accidents

25. The Board limited or rejected contentions based solely on the proposition that because the TMI-2 accident can be classified as a Class 9 accident (*i.e.*, involving accident sequences outside the scope of the design basis accidents), the occurrence of a full spectrum of Class 9 accidents at TMI-1, up to and including accidents involving core melt and breach of containment, could simply be assumed as the basis for the contention. We did not limit intervenor contentions to design basis accidents, but we insisted that contentions based on Class 9 accidents specify accident scenarios having a reasonable nexus to the TMI-2 accident. Subsequently UCS and Mr. Sholly proposed Class 9 contentions and the Board itself requested evidence on the subject. The evidence on this issue and a motion for summary disposition by UCS on its Class 9 contention will be discussed under the relevant evidentiary findings.

Basis and Specificity

26. The Board was liberal in allowing initially some contentions which were marginal as to basis and specificity and which did not adequately put Licensee and the Staff on notice of the matters which needed to be addressed in testimony. These contentions were allowed subject to the qualification that further basis and specificity could be obtained by the Licensee and Staff through discovery. In several instances, particularly in the case of ECNP and CEA, the Board subsequently dismissed contentions where the intervenor failed to answer interrogatories inquiring into the bases and specifics of contentions and ignored Board orders compelling them to respond.

Withdrawn Contentions

27. During the course of the hearings a number of intervenors withdrew contentions, citing in many cases a lack of resources to pursue the contentions and the fact that on some issues there were similar contentions advanced by other parties. In some instances the intervenors stated that their contentions were no longer a matter of concern. It was the Board's practice to review contentions dropped by intervenors, to assess the importance of the contention and to ascertain whether issues raised by the contention were adequately covered by the contentions of other intervenors. In a number of instances, where the Board thought that the hearing record might otherwise be inadequate and incomplete, the Board adopted contentions as Board questions and required the Licensee and the Staff to address the withdrawn contention in testimony. In some cases, the contention was withdrawn so late that the Licensee and the Staff had

already filed testimony in response to the contention. In some instances Board also permitted intervenors to adopt contentions which had withdrawn by another intervenor.

28. In addition to rulings in accordance with the foregoing general principles, the Board made special rulings on specific contentions which are discussed later in this decision in connection with the specific contentions.

29. The Board and parties accepted Licensee's proposal to group contentions into the following major categories:

- a. Plant design and procedures.
- b. Separation of TMI-1 and TMI-2.
- c. Management qualifications of Licensee.
- d. Emergency planning.

This grouping and sequence of contentions was followed generally in the presentation of evidence at the hearing, although some items of testimony were generated as a result of Board questions or intercross-examination or reports issued by the Staff subsequent to the consideration of the subject and were fitted into the proceeding as time permitted. A fifth category of contentions, those dealing with Licensee's financial qualifications, was eliminated from the hearing as a result of the Commission's Order of March 23, 1981.

30. The Commission's August 9, 1979 Order instructed the Board to encourage participation of parties pursuant to 10 CFR 2.715a to the maximum extent practicable consistent with the provisions of the regulation. The intervenors in general objected to consolidation, but voluntarily to present joint cases and to conduct joint cross-examination. None of the parties favored involuntary consolidation by Board order. The Board adopted the intervenor proposal and required the intervenors to designate a lead intervenor for the presentation of evidence and the conduct of cross-examination on issues where there were multiple contentions. This practice, in general, worked well.

D. Miscellaneous Rulings

31. In the period between the August 9, 1979 Order and the commencement of the evidentiary hearing on October 15, 1980, the Board was called upon frequently to resolve differences as to the admissibility of contentions, to rule on discovery disputes, prehearing and hearing schedules and a wide variety of other procedural matters. Prehearing conference orders dealing with these matters were issued on December 18, 1979, January 11, 1980, January 25, 1980, February 29, 1980 and March 1, 1980.

1980. The final prehearing conference was held on August 12 and 13, 1980 in Harrisburg pursuant to 10 CFR 2.752 and the final prehearing conference order was issued August 20, 1980. In addition, the Board issued a large number of rulings on motions and requests submitted in separate filings. The total number of prehearing documents filed with or issued by the Board, exclusive of prefiled testimony, was substantially more than 1,000.

32. The issuance of the Staff's safety evaluation report (SER) was, in this proceeding as in others, a critical path item. Delay in the issuance of the safety evaluation report largely accounted for the delay in the commencement of the evidentiary hearing as compared to the target schedule attached to the Commission's August 9, 1979 Order.⁶ This delay enabled the Board to extend the discovery periods contemplated in the August 9, 1979 Order without delaying the commencement of the hearing. The Board also afforded intervenors an opportunity for supplemental discovery following the issuance of the safety evaluation report and major supplements and following several revisions made by Licensee in its emergency plans in the course of the proceeding.

33. Some intervenors requested financial assistance from the Commission to support litigation of their contentions. These requests were initially denied by the Board as outside the scope of its authority. On May 16, 1980, the Commission announced that it generally favored intervenor funding as a matter of policy, but it nevertheless denied a request to provide financial assistance to intervenors in this proceeding in light of Congressional disapproval of the use of appropriated funds for such purposes in Fiscal Year 1980. *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), CLI-80-19, 11 NRC 700 (1980). On the same day, in response to a certification to the Commission from this Board, the Commission announced it would not provide financial assistance to intervenors in this proceeding to address the psychological stress issue. *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), CLI-80-20, 11 NRC 705 (1980). In another certification to the Commission dated August 8, 1980, the Board requested the Commission to extend its rule governing procedural assistance in adjudicatory licensing

⁶ We do not assign fault or responsibility as between Licensee who provided information required by the Staff to complete its evaluation and the Staff which generated detailed criteria for the short-term and long-term actions specified in the Commission's August 9, 1979 Order and reviewed materials submitted by Licensee. The schedule recommended in the Commission's order could not have been met in any event because it did not anticipate the large number of intervenors nor the great number, complexity and variety of the contested issues.

proceedings to this restart proceeding so as to allow the Board to consider intervenor requests for free transcripts. *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit No. 1), LBP-80-23, 12 NRC 227 (1980). As explained in its certification, the Board viewed such assistance as an important contribution to the efficiency of the hearing process. In a Memorandum and Order dated August 15, 1980, the Commission granted the Board authority to extend the provisions of the procedural assistance rule to the parties in this proceeding. In a Memorandum dated December 4, 1980, however, the Chairman of the Commission cited a letter (dated December 3, 1980) by the Comptroller General of the United States that the NRC procedural assistance program may not lawfully use any Fiscal Year 1981 appropriation funds. The Commission directed the Board and the Staff to immediately cease such assistance, which we did. However, so that the Board could enforce its orders to make complete and accurate references to transcript pages in proposed findings, other pleadings and in arguments, the Board established a hearing room library of transcripts which was available to intervenors in addition to the transcripts and records in the local public document rooms.

34. In response to many new documents, intervenors posed new contentions or revised existing contentions. The Board in general required such revisions to be submitted as soon as possible, but in any case no later than 30 days following the issuance of the documents. The Board notes that as a result of the investigations into the TMI-2 accident and related matters, there were issued during the course of this proceeding many major reports which were related in varying degrees to the issues in this proceeding. Among such reports issued during the course of this hearing have been:

- a. The Report of the President's Commission on the Accident at Three Mile Island, with numerous Technical Staff Reports.
- b. The Report of the NRC's Special Inquiry Group (the so-called "Rogovin" investigation).
- c. The two reports of the TMI-2 Lessons Learned Task Force (NUREG-0578 and NUREG-0585).
- d. Generic Evaluation of Small Break Loss-of-Coolant Accident Behavior in Babcock & Wilcox Designed 177-FA Operating Plants (NUREG-0565).

- e. Major investigations by the Commission's Office of Inspection and Enforcement (including NUREG-0600 and NUREG-0760).

In addition, revisions to Commission rules and regulations had a similar impact on intervenor contentions, particularly in the area of emergency planning, where the Commission published two revisions of NUREG-0654 and a set of major revisions to the Commission's emergency planning regulations on August 19, 1980. Such changes required a diligent effort on the part of all parties to keep abreast of changing circumstances throughout the proceeding, and also contributed, in some measure, to the delay in the proceeding compared to the suggested schedule set forth in the Commission's August 9, 1979 Order.

35. The parties to this proceeding were cautioned on several occasions⁷ that the Board requires the parties to file proposed findings of fact and conclusions of law pursuant to 10 CFR 2.754(a) and that failure to file would be deemed a default by that participant as to the respective issues in accordance with section 2.754(b). In our February 9, 1981 memorandum to the Commission, in which we discussed the predicted schedule for this proceeding, we informed the Commissioners that the Board would adopt findings substantially verbatim if they are complete, accurate, balanced and supported by the evidentiary record. *Id.*, at 3. *See also* Administrative Procedure Act, 5 USC 557(c). We have frequently been able to adopt proposed findings as presented, particularly on background facts and uncontested issues. On contested issues, the proposed findings have been an especially valuable guide to the evidentiary record in that our own memories and hearing notes cannot be the equivalent to the record research conducted by many interested litigating parties.

36. We are dividing our decision into two or more partial initial decisions so that the Commission will have the maximum time for review. Below we decide issues relating to Licensee's management capability. Remaining to be decided are issues on plant design and procedures, separation of the TMI units, and emergency planning.

⁷ *E.g.*, Memorandum and Order dated May 22, 1980, at 12, and Memorandum and Order dated April 22, 1981, at 2.

II. FINDINGS OF FACT AND CONCLUSIONS OF LAW ON MANAGEMENT ISSUES

A. Introduction

37. We have organized our findings on the broad subjects of management capability by following the issues identified by the Commission in CLI-80-5. 11 NRC 408 (1980). CLI-80-5 added to, included and expanded upon the subissues of short-term item 6 of the August 9, 1979 Notice of Hearing. 10 NRC, at 145. In addition, in the body of our discussion on particular related order items, we address two management capability contentions, TMIA Contention 5 and Aamodt Contention 2. There are three other management-related contentions which have been considered by the Board, ANGRY Contention IV, CEA Contention 13 and Sholly Contention 14,⁸ even though these contentions were abandoned or withdrawn by their respective sponsors. These contentions are subsumed by the issues mandated by CLI-80-5.

38. In its March 23, 1981 order, CLI-81-3, at 9, the Commission ruled:

The Commission has considered the parties' views and determined that, contrary to the position it took in its August 9 Order, the issue of the licensee's financial qualifications should not be litigated in this proceeding. The Commission does not believe that, in this particular case, litigation of the issue would be productive. In fact the Commission is of the view that the treatment of financial qualifications in the licensing process as a general matter needs reexamination and is undertaking that examination at this time.

Although the Commission is taking the financial qualification issue out of the hearing, the staff is directed to continue to monitor the licensee's financial resources as long as is necessary to report any health and safety implications to the Commission. [Footnote omitted.]

⁸ ANGRY Contention IV alleges that the licensee lacks the management capability to operate a Nuclear Generating Station without endangering the public health and safety.

CEA Contention 13 alleges that there is a specific need for the establishment of training for operators that addresses the problem of "mindset" that denies information indicative of serious problems.

Sholly Contention 14 restates CLI-80-5 issues (1), (2), (3) and (7) in contention form.

39. Notwithstanding this ruling the Commonwealth urges the Board to direct the Staff to include financial considerations as a part of its certification to the Commission on the completion of short- and long-term items. Commonwealth PF ¶ 160. We think it is clear that CLI-81-3 removed jurisdiction from the Board to direct the Staff to include financial considerations in certifications arising out of this hearing. We do not understand the Commonwealth's jurisdiction argument (PF ¶ 157 n.) to the effect that the Board would be "... simply ruling on the scope of the Commission's ruling in terms of post-hearing staff review." Even if the Commonwealth is requesting us to make only a declaratory ruling, it would be a declaratory ruling on a subject matter beyond our jurisdiction, thus without force or value. Therefore we reject the Commonwealth's proposed finding ¶ 160 and those related to it. We have made no findings on financial capability issues under CLI-80-5 issue (12).

40. CLI-80-5 issue (13) directed the Board to examine "such other specific issues as the Board deems relevant to the resolution of the issues set forth in this order." The Commission also noted:

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.

11 NRC 409-10.

41. The Board did not initiate any specific management issues not raised by the Commission in CLI-80-5 or by the parties. Nevertheless we used considerable judgment in developing the record and forming conclusions on Licensee's management capability. The Board requested the Licensee to produce its management and high-level technical personnel at the hearing. They came and underwent extensive questioning by the Board and the parties. We heard from virtually all those who would have an important role in the management of TMI-1, ranging from the chief executive officer of General Public Utilities to at least the fourth level of TMI-1 on-site supervisors. They are described below.

42. Near the very end of the evidentiary hearing and after the initial proposed findings on management issues were filed, the Commonwealth of Pennsylvania and the Licensee, with the Staff's acquiescence, entered into an understanding that certain concerns of the Commonwealth would be satisfied by commitments by the Licensee. These concerns and

commitments relate to personnel training and licensing examinations, shift personnel staffing, and radwaste staff requirements. Licensee Ex. 56 and 59. This understanding and the commitments were a major achievement. Although they are vigorously challenged by intervenor Mrs. Aamodt, they have gone far to resolve many of our concerns about Licensee training and personnel staffing. We discuss these commitments below under their respective subjects and in the section on Conditions and Commitments, ¶ 523, *et seq., infra*.

43. We have received notifications from the NRC Staff, dated July 28, August 6, and August 7, 1981, giving us preliminary information on a Staff Office of Inspection and Enforcement (IE) investigation of alleged cheating involving two of Licensee's shift supervisors who took the NRC reactor operator (RO) and senior reactor operator (SRO) written examinations in April 1981. Further preliminary details were provided in the August 7 notification enclosing the NRC Office of Inspector and Auditor (OIA) investigation report. Licensee's counsel has also provided information in two letters dated August 4 and August 10. The August 6 notification enclosed a memorandum also dated August 6, from Mr. Victor Stello, Jr., the Director of IE to Mr. Harold R. Denton, the Director of NRR. The August 6 notification and enclosed memorandum informed us that the IE investigation essentially has been completed and that a full report is estimated to be ready by August 14. At the time of this writing, the full report has just been received, but not yet fully considered by the Board and the parties.

44. The preliminary Staff conclusions provided to us are that:

- (1) two individuals have acknowledged that they were involved in cheating on the examinations;
- (2) some sessions of the examinations were unproctored for extended periods of time;
- (3) there is no evidence of cheating by other Licensee employees who took the examinations;
- (4) there is no evidence that, except for the knowledge of the two individuals involved, the Licensee either knew of the cheating prior to the NRC Staff becoming aware of it (from a comparison of the answers) or attempted to facilitate cheating by its employees;
- (5) the Licensee has fired the two employees; and
- (6) the Staff concludes there should be a reexamination of the other employees who passed the examination.

45. The scope of the concerns covered in the Stello memorandum are helpful at this stage because they match the scope of our concerns. The possible nexus of this cheating incident to issues in this hearing, depending upon the facts, goes beyond whether particular individuals cheated. On the basis of the Staff's preliminary conclusions of its essentially completed investigation, we are proceeding with the issuance of this partial initial decision on management issues. We do so in order to give the Commission as much time as possible to review this partial decision before we issue a subsequent decision on other issues. Also, by issuing our findings on training, staffing, and operator licensing now, the Commission, if it chooses, can monitor the IE investigation in the context of its relevance to this proceeding. However, we retain jurisdiction to consider further the effect of the investigation of cheating on our decision subsequent to the issuance of the investigation report. The issues of Licensee's management integrity, the quality of its operating personnel, its ability to staff the facility adequately, its training and testing program, and the NRC process by which the operators would be tested and licensed, are all important issues considered in this partial decision. We will consider carefully the effect on such issues of the anticipated NRC Staff report, any further action by the Licensee and Staff in light of the report, including whether there will be a reexamination of individuals who took the April examination, and the advice of the parties, to determine whether further actions by this Board appear warranted.

B. Licensee's Management Structure

46. CLI-80-5, Issue (1) identifies the following issue for the Board's examination:

- (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.

Licensee's Corporate Organization

47. At the time of the TMI-2 accident, General Public Utilities (GPU) was the parent holding company of three operating subsidiary utilities and one administrative and technical support company common to the operating utilities. Arnold, ff. Tr. 11,434, at 3, 4. The operating utilities were Metropolitan Edison Company, Pennsylvania Electric Company, and Jersey Central Power & Light Company, with undivided ownership interests of 50%, 25%, and 25%, respectively, in both TMI-1

and TMI-2. Arnold, ff. Tr. 11,434, at 3. GPU Service Corporation provided common administrative and technical support and audit functions. *Id.*, at 4; Tr. 11,470-71 (Arnold).

48. Met Ed was the exclusive operator of the TMI units. The chief operating officer of Met Ed, its President, required status reports from the Vice President Generation on the operation and maintenance of TMI-1, but he did not become involved with detailed activities at the facility. The Vice President Generation was in direct charge of all of Met Ed's generating stations, including its nuclear plants at TMI. Six managers reported to the Vice President Generation. One of these managers, the Manager Generating Station-Nuclear, was responsible for operational control of both TMI units. His accountability included responsibility for virtually all aspects of station administration, maintenance, and operations. Reporting to the TMI Station Manager were four superintendents: Superintendent TMI-1, Superintendent TMI-2, Superintendent Maintenance and Superintendent Administration. Under the NRC licenses, the unit superintendents were assigned direct responsibility for safe operation of TMI Units 1 and 2. Arnold, ff. Tr. 11,434, at 3-6.

49. Prior to the TMI-2 accident GPU believed that its nuclear activities, *i.e.*, TMI-1, Oyster Creek, Saxton (decommissioned) and Forked River (a subsequently cancelled project) would benefit from expansion of GPU's in-house technical capabilities, much greater involvement by the GPU engineering groups active during plant design and construction with the technical functions necessary during plant operations, and a consolidation of the technical and management structures responsible for GPU's nuclear activities. This program was under way when the accident occurred at Three Mile Island in March 1979. Tr. 11,537-38 (Arnold); Arnold, ff. Tr. 11,434, at 6-7.

50. Mr. Robert C. Arnold, Licensee's Chief Nuclear officer,⁹ described the genesis of the current organization of nuclear activities as a combination of the idea to consolidate existing resources and as an outgrowth of the need for concentrated and integrated resources after the TMI-2 accident. Arnold, ff. Tr. 11,434, at 7-9. In order to maintain TMI as a priority, this method of doing nuclear business was formally adopted in July 1979 by the formation of the TMI Generation Group, under Mr.

⁹ At the time he testified on February 3, 1981, Mr. Arnold's titles were Senior Vice President of Met Ed and Jersey Central Power & Light Company, Vice President of GPU Service Corporation, head of the GPU Nuclear Group and President of GPU Nuclear Corporation. *Id.*, at 1.

Arnold. The objectives of this new organization were to integrate the technical support capabilities within the Met Ed and GPU Service Corporation Generation Divisions with the Met Ed operations and maintenance personnel for support of day-to-day plant operations, to augment the management of non-operating functions and to apply additional technical and management skills to the activities at TMI. *Id.*, at 8-9. This nuclear group was essentially divorced from other utility system responsibilities. In addition to serving TMI, Units 1 and 2, the Generation Group was charged with providing support for Oyster Creek. The Generation Group formally evolved into the GPU Nuclear Group with NRC's authorization of the amendment of the TMI-1 operating license in September 1980; however, its basic purpose of consolidation and expansion of resources to support GPU's nuclear activities did not change. *Id.*, at 9. In CLI-81-17, August 13, 1981, the Commission at Licensee's request, authorized the Staff to issue an amendment to the TMI-1 operating license which will transfer authority to operate the facility to GPU Nuclear Corporation. The Commission's August 9, 1979 and March 6, 1980 orders were revised directing the Board to consider the management competence of GPU Nuclear rather than that of Metropolitan Edison Company.¹⁰

51. Mr. Arnold is the President of GPU Nuclear Corporation. Upon approval of the GPU Nuclear Corporation by the NRC this was to have become his only title and responsibility. He is assisted by his deputy, Executive Vice President, Mr. Philip Clark. Reporting to Mr. Arnold and Mr. Clark are Vice Presidents in charge of operations at each of the three nuclear plants in the GPU System, and six Vice Presidents in the areas of Technical Functions, Nuclear Assurance, Radiological and Environment Controls, Maintenance and Construction, Administration and Communications. Each of these individuals is an officer in the new GPU Nuclear Corporation. Throughout the testimony and exhibits GPU Nuclear is referred to interchangeably as the Group and as the Corporation. The Corporation Vice Presidents were Group Division Directors. Although the the legal structure of the Group differed from the Corporation, there were no functional differences of importance and their duties remained the same under either job title. Arnold, ff. Tr. 11,434, at 9, 10, 28; Tr. 11,483, 11,459-61, 11,126 (Arnold); Tr. 11,616-17 (Hukill). We discuss the qualifications of Licensee's individual managers below in a separate section.

52. The Nuclear Group had a staff of approximately 1,925 in 1980, and the Nuclear Corporation is authorized to be staffed by approximately 2,500 people by the end of 1981. *Id.*, at 9-10, Figure 1, and following

¹⁰ The Pennsylvania Public Utility Commission has also approved the nuclear corporation. Letter of June 29, 1981 from Licensee's counsel Blake to Board.

charts 5-7; Dieckamp, ff. Tr. 13,437, at Figure 5. Overseeing the activities of the GPU Nuclear Corporation is a Board of Directors composed of the presidents of Jersey Central, Met Ed, Pennsylvania Electric Company and GPU Service Corporation, plus the chief executive officer of GPU, GPU Service Corporation's vice president for corporate planning, Mr. Arnold and Mr. Clark. The Board of Directors meets monthly to review the operating performance of GPU Nuclear as well as the Corporation's budget. Tr. 11,438, 11,441, 11,475 (Arnold).

53. The GPU Nuclear Corporation has assumed responsibility for the operation and maintenance of all of GPU's nuclear plants as well as the management of the design and construction of modifications for those plants, *i.e.*, it has superseded the GPU Nuclear Group as the organization responsible for operation of the plants. Arnold, ff. Tr. 11,434, at 10, 28. Ownership did not change. *Id.*, at 28.

54. During his direct testimony, Mr. Arnold identified the major elements of the new organization:

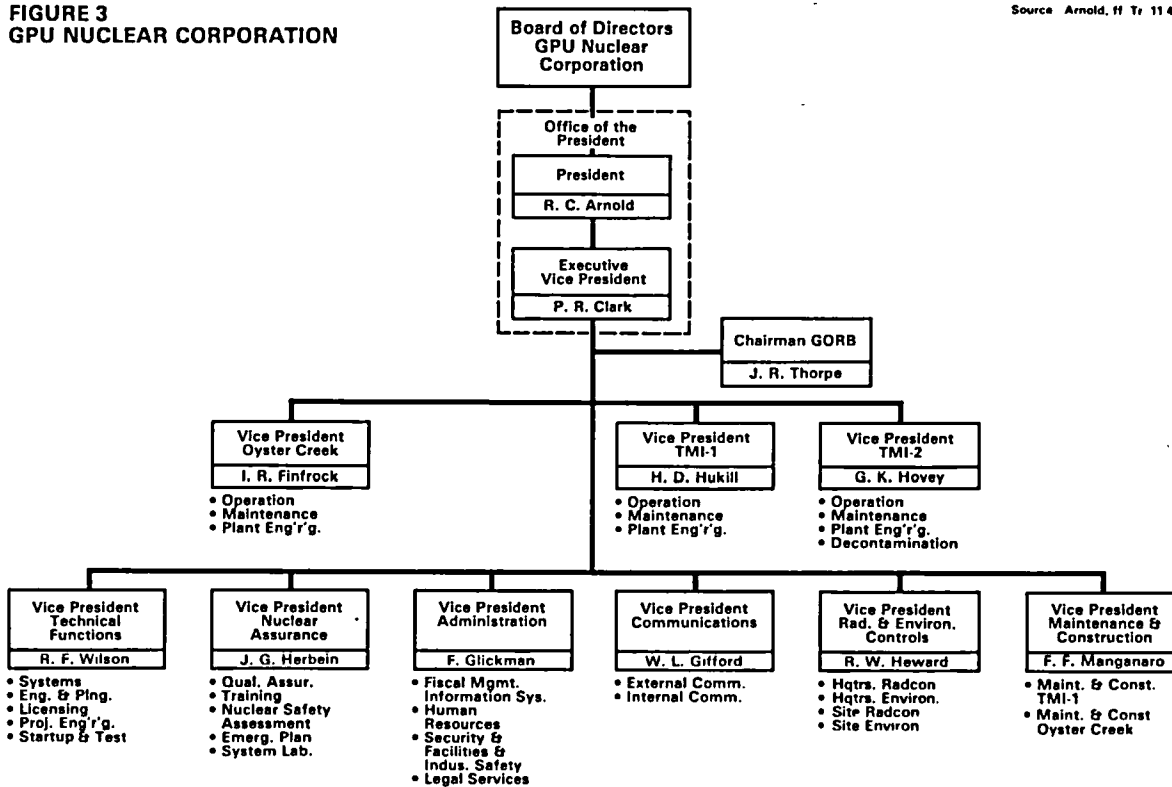
1. A full-time organization within the GPU system dedicated solely to nuclear generation.
2. Increased onsite technical and management resources, with very strong central control of technical issues.
3. Onsite, full-time senior management for plant operations and maintenance with primary responsibility there, and with other kinds of functional activities in a support role.
4. An independent nuclear assurance division with the same strength and status as operations would have; not a collateral duty for people who also have line responsibilities.
5. A nuclear safety assessment department.
6. The advantage of the pooling of the resources that are necessary for support of the several generating units, with the advantages of cross-fertilization on operating experience.
7. Personnel policies, procedures, practices and resources dedicated to those areas that would be able to address the unique aspects of the nuclear technology.

Paraphrased from Tr. 11,438-40 (Arnold).

An organizational Chart of GPU Nuclear Corporation is reproduced at this point.

FIGURE 3
GPU NUCLEAR CORPORATION

Source: Arnold, H Tr 11 434



55. Both the NRC Staff's Divisions of Nuclear Reactor Regulation (NRR) and Inspection and Enforcement (IE) are satisfied with the reorganization of GPU's nuclear activities into a single entity. Staff Ex. 4, § III.B.2, at 4-8; Tr. 11,961-64 (Crocker); Tr. 12,014 (Allenspach); Keimig, ff. Tr. 11,946, at 8. It is the view of IE that Licensee, in making this change, has increased substantially the total overall management and technical resources available for TMI-1 restart. Keimig, ff. Tr. 11,946, at 8. Also, experienced managers and professionals have been added at both the corporate and plant levels of the organization. IE expects this centralized, nuclear-oriented group to provide increased management capability to focus on nuclear operational matters, as well as personnel policies and procedures applicable to nuclear activities. *Id.* NRR expressed the view that Licensee's reorganization paralleled the model developed by NRR after the TMI-2 accident to evaluate the adequacy of the organizational structure of utilities and, therefore, was totally acceptable. Tr. 12,014 (Allenspach, Crocker).

56. Licensee's organizational structure at both the corporate and plant level was endorsed by two witnesses presented by Licensee. Mr. William S. Lee, President and Chief Operating Officer of Duke Power Company, and Chairman of the Board of Directors of the Institute of Nuclear Power Operations (INPO), testified that GPU's proposed organizational structure for consolidating nuclear activities into the new subsidiary GPU Nuclear Corporation is a strong management concept that can be effective in providing an integrated single-minded approach which will give additional assurances of safety. Lee, ff. Tr. 13,251, at 11-12; Tr. 13,273-76 (Lee). Mr. Lee is well known for his professional and management experience in the nuclear power industry. *See also* Lee, ff. Tr. 13,251, at 1 and 2.

57. Mr. Lee's viewpoint was shared by Mr. William Wegner, a nuclear engineer who served as the Deputy to the Director of the Naval Reactors program, Admiral Rickover, from 1964 until his retirement in 1979 when he formed a consulting firm, Basic Energy Technology Associates (BETA). Each of his three associates have some twenty-five years of experience in the Naval Reactors program. Wegner, ff. Tr. 13,284, at 1, Attachment 1, at 2. BETA conducted a detailed review of Licensee's management structure, capability and technical resources, as well as the attitude of management, beginning in October 1979 and continuing intermittently into January 1981, *Id.*, at 1-5. BETA also worked with GPU on specific technical issues related to TMI-1 and, consequently, had an opportunity to observe first-hand the technical and management capability of the GPU organization.

58. Mr. Wegner concluded that the new organization and the management of the GPU nuclear plants through this single, unified structure is probably the most effective way a nuclear utility could be handled. *Id.*, at 6, 11-12. Mr. Wegner offered the following observations and reasons in support of his conclusion:

1. The establishment of a single organization, reporting to a high corporate level and responsible for all aspects of nuclear plant operation and support, is in agreement with many of the recommendations contained in post-TMI accident reports.
2. By combining the technical resources of the various GPU utilities, a larger pool of talent has been assembled which can be put at the disposal of the nuclear plants in order to resolve problems and to ensure a better flow of information between the plants.
3. By having a larger base of technical and management talent the GPU-Nuclear organization is less reactive to personnel losses and can afford to move people to gain experience.
4. It can develop and use uniform policies between the plants on matters such as training, procurement and facilities.
5. Because of its combined size and consolidated technical strength it can provide GPU corporate management with a much more professional assessment of matters which might affect reactor safety.
6. All the key technical positions within the GPU Nuclear Corporation are filled by nuclear-experienced personnel and their functions are not diluted with non-nuclear matters.
7. The person at the site responsible for the operation of TMI-1 is a vice president of the GPU Nuclear Corporation and reports directly to the Office of the President of the corporation. He is not encumbered by organizational layers between himself and top management.
8. Those functions which need not be done at the site are performed offsite by personnel not reporting to the TMI Unit Vice President. This provides the Unit Vice President with more time which he can devote to matters directly related to the operation of the plant.

9. For all practical purposes, TMI-1 and TMI-2 have been separated physically and organizationally. This is important in that a separate group of capable people have been assigned to TMI-1, independent of TMI-2.
10. The new organization makes it very clear who is in overall charge of GPU nuclear matters.

Wegner, ff. Tr. 13,284, at 10-11.

59. In evaluating the GPU Nuclear management structure we have considered the large body of evidence on the subject, we heard about the various responsibilities of management personnel, and we have considered the reasons offered by BETA and others in support of the new structure. Licensee has made necessary compromises among inherently opposing factors. Compare, *e.g.*, factors (2) with (9), and (7) with (8), ¶ 58. The Vice President TMI-1, for example, has been freed from certain responsibilities affecting his plant so that he may concentrate upon those aspects of plant operation and maintenance which must be under his management. But for every responsibility lifted from him, he also loses related authority. The balancing has been logical and supported by the evidentiary record. The result, we believe, has been an improved and concentrated operational management, supported by a large base of off-site and on-site technical resources available when required, with the additional advantage of the checks and balances of independent quality assurance and nuclear safety review made possible because the chain of command is separated. On first impression the GPU Nuclear management and command structure appeared complex. It is, however, no more complex than the task for which it was designed, and when understood, it is simple enough. Individual members of the management organization appearing before us seemed to have a clear understanding of their responsibilities, limitations, and the resources available to them.

60. Virtually all of the witnesses who testified on the subject of the command and administrative structure used by Licensee to operate, technically support and manage its nuclear activities, including safe operation of TMI-1, explicitly stated or implied that the extensive modifications which have been made to Licensee's organization, including the changes in responsibilities of key management-level personnel and the influx of additional personnel, constitute a significant positive factor in their endorsement of Licensee's command and administrative structure at both the plant and corporate levels. Arnold, ff. Tr. 11,434; Tr. 11,528 (Arnold); Keimig, ff. Tr. 11,946, at 8; Tr. 11,988-98 (Crocker,

Allenspach); Tr. 12,012-15 (Crocker, Allenspach); Tr. 12,024-25 (Haverkamp); Lee, ff. Tr. 13,251, at 11-12; Tr. 13,271, 13,274-75 (Lee); Wegner, ff. Tr. 13,274, at 8-12; and Tr. 13,309 (Miles).

61. Intervenor TMIA urges the Board to find that, prior to the accident, the Met Ed corporate structure was, according to Mr. Arnold, "less than optimum, less than desirable", that because the NRC Staff witnesses have no qualifications to approve the new corporate structure, and that because Mr. Arnold could not outline any significant improvements the new corporation will have, the Licensee has failed to prove that the new GPU Nuclear Corporation will improve overall performance. TMIA PF ¶¶ 56-60.

62. The first reference to Arnold testimony by TMIA is essentially correct, but TMIA's reference is incomplete:

Q. Do you think that the insufficient in-house technical resource capabilities that you described contributed to either the causes or the consequences of the accident?

A. I think I would first of all like to take issue that what I described were "insufficient in-house resources." I think we were not trying to correct a situation that we felt was insufficient, but was less than optimum, less than desired.

Tr. 11,494-95 (Arnold).

63. It is correct that Licensee's pre-accident consultant, Booz Allen & Hamilton, recommended that GPU increase its in-house technical capabilities (Tr. 11,493-94 (Arnold)), but it is not correct, as TMIA would have us infer, that Booz Allen & Hamilton found the existing organization to be inadequate. Moreover, Booz Allen & Hamilton endorsed the initial phase of the GPU reorganization program. Arnold, ff. Tr. 11,434, at 7.

64. Messrs. Allenspach and Crocker, the NRC Staff witnesses on GPU management structure concede that they have no specific management training, that they depend upon experience in analyzing the adequacy of GPU Nuclear. Tr. 11,990-91 (Crocker). They are also the principal authors of draft NUREG-0731 which currently contains the principal Staff guidelines for utility management and technical resources. While it might be helpful if the NRC Staff members cognizant in nuclear utility management had formal training in management matters, the Board is satisfied that the NRC Staff, based upon their collective experience with nuclear utilities, industry input into the guidelines, and a careful evaluation of the reports of the various investigations into the accident, have the expertise to evaluate the management and command structure of a nuclear

utility. Tr. 11,987-97.¹¹ In any event the NRC Staff's expertise on the subject is, in terms of public health and safety, almost unique.

65. Mr. Arnold did not, as asserted by TMIA (TMIA Management PF ¶ 59) fail, under questioning, to outline any significant improvement the new corporation would have. The testimony referred to by TMIA, Tr. 11,526-38, contains Mr. Arnold's opinion of the functional similarities between GPU Nuclear Group and GPU Nuclear Corporation. It was not a comparison of the integrated GPU Nuclear organization with the pre-accident structure. The theme of almost all of Mr. Arnold's testimony was that the new organization was an improvement over the old.

66. The Board rejects TMIA's proposed findings ¶¶ 58-59 because they are not supported by, are in fact inconsistent with, the evidence.

67. No other intervenor has filed proposed findings on Licensee's off-site corporate command and administrative structure, and no evidence disputing the evidence presented by the Licensee and Staff in support of the integrated GPU Nuclear organization has been presented. The Board concludes that the Licensee's command and administrative structure at the corporate level is appropriately organized to provide reasonable assurance of safe operation of TMI-1.

Licensee's TMI-1 On-site Organization and Technical Resources

68. In addressing the TMI-1 on-site organization and technical resources, the Board continues to examine CLI-80-5 issue (1) with respect to whether the command and administrative structure at the plant level is appropriately organized. We shall also examine in this section the general aspects of CLI-80-5 issue (2):

- (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).

69. Specific aspects of operations and organization of TMI-1, such as the maintenance contention, health physics (issue (4)), radwaste staffing (issue (5)), and training are discussed in separate sections. Also, we have reserved for separate discussion the qualifications of Licensee's corporate and plant managerial-level personnel.

¹¹ The Board, however, believes that there still are not adequate "definitive standards for management organization and operation for nuclear power plants" recognized by the Commission in CLI-80-5 to be lacking. 11 NRC 409-10. We discuss the Staff's guidelines in greater detail in our findings on personnel below (¶ 116, *et seq.*).

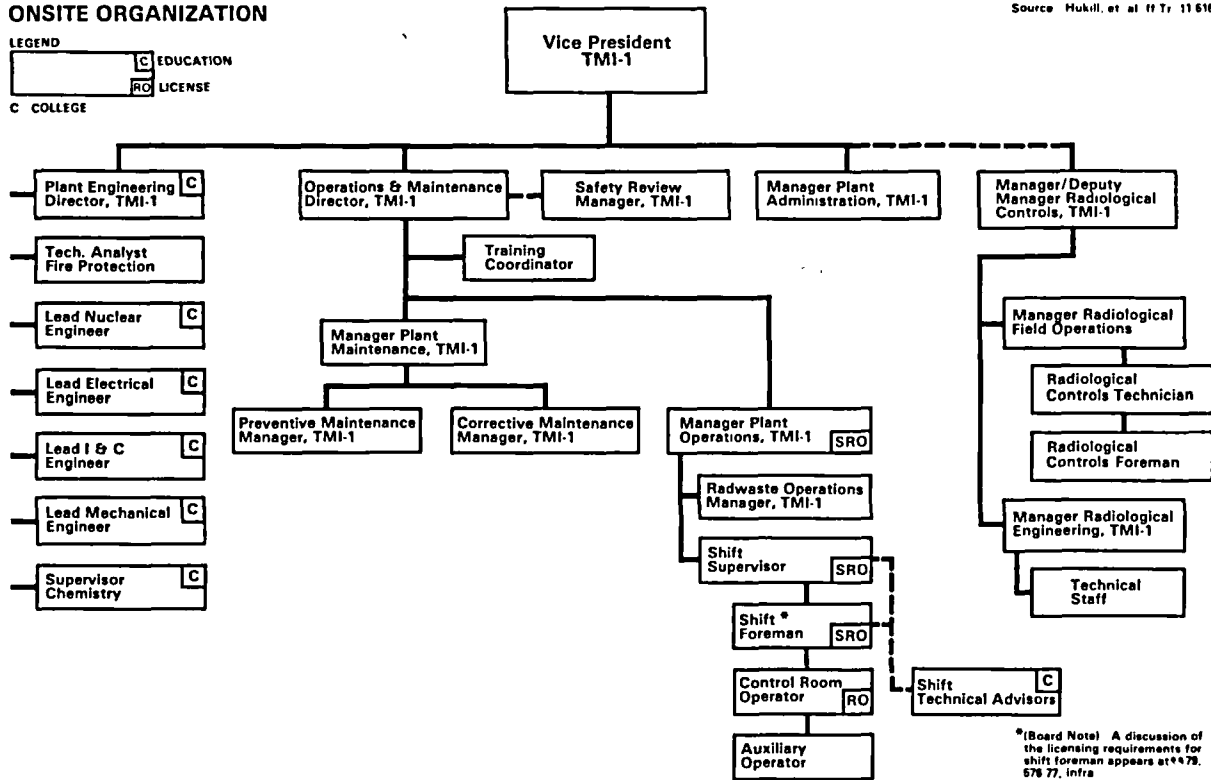
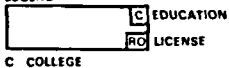
70. Licensee's on-site organization, responsible for the safe operation and maintenance of TMI-1 on a day-to-day basis, has been significantly reorganized and strengthened since the accident at TMI-2. In general, the major changes in the on-site organization have been isolating the management and technical support of TMI-1 from TMI-2 decontamination activities; significantly reducing the responsibilities of senior TMI-1 management to allow them to devote their full attention to Unit 1; and restructuring the TMI-1 organization so that effective control over important unit activities and decisions is maintained by TMI-1 on-site management while, at the same time, assuring that direct channels of communication exist between on and off-site technical and management personnel. Hukill, *et al.*, ff. Tr. 11,617, at 2-3. These basic changes have been endorsed by the Staff, as well as by Mr. Wegner and his associates at BETA in their management review of TMI-1. Staff Ex. 4, at 8, 10, 13; Staff Ex. 14, Table B-1, at 8; Kemig, ff. Tr. 11,946, at 14; Tr. 11,995, 11,981 (Crocker); Wegner, ff. Tr. 13,284, at 12-19.

For convenience, we reproduce a chart of the TMI-1 on-site organization at this point.

ONSITE ORGANIZATION

Source: Hukill, et al. (T Tr. 11-616)

LEGEND



* (Board Note) A discussion of the licensing requirements for shift foreman appears at 4478, 576 77, infra.

71. The Vice President of TMI-1, Henry D. Hukill, is the senior member of management within the TMI-1 unit organization. He is located full-time on Three Mile Island; however, he reports to the Office of the President of GPU Nuclear, located in Parsippany, New Jersey. Hukill, *et al.*, ff. Tr. 11,617, at 4. The sole responsibility of the Vice President of TMI-1 is TMI-1. Staff Ex. 4, at 8. He has been delegated minimum responsibilities not directly associated with the operation and maintenance of the unit in order that he may devote his full time and attention to operation and maintenance of TMI-1. Hukill, *et al.*, ff. Tr. 11,617, at 4. In order to meet this responsibility, the Vice President of TMI-1 utilizes the services of, and is the senior liaison with the engineering, design and analysis, nuclear assurance (which includes training and emergency preparedness), maintenance and construction, radiological and environmental controls and administrative services available to TMI-1 from the support divisions of the GPU Nuclear Corporation. *Id.*, at 5. In the event of an emergency, the Vice President of TMI-1, Mr. Hukill, assumes the duties as Emergency Director at the plant. We discuss the qualifications of Mr. Hukill and his senior on-site operations personnel in a separate section on Licensee's managers below.

72. Reporting directly to the Vice President of TMI-1 is the Manager of Administration, the Operations and Maintenance (O&M) Director and the Plant Engineering Director. *Id.*, at 7. The Manager of Administration has a civil engineering degree and some twenty years in the electric industry, manages the administrative activities of TMI-1, functions as a staff assistant to the Vice President of TMI-1, and coordinates the administrative work and needs of TMI-1 with the activities of GPU Nuclear's Division of Administration. *Id.*, at 38-40. The Board had no opportunity to hear from this individual.

73. The O&M and Plant Engineering Directors have primary responsibility for Unit 1's operational, maintenance and associated engineering activities, *i.e.*, they manage the people with key functional responsibility for the safe operation of the unit. *Id.*, at 7.

74. As a result of the organizational changes instituted by Licensee since the TMI-2 accident, the responsibilities of the O&M Director, Ronald J. Toole, have significantly decreased in scope. *Id.*, at 9. This change is representative of Licensee's efforts to substantially increase the depth of understanding and involvement of GPU Nuclear managers in the technical issues with which individuals reporting to them are dealing. This goal is accomplished by limiting the number of discrete areas of responsibility assigned to a manager, and by eliminating functions for which his technical and managerial capabilities are not necessary, *e.g.*, purely administrative work. *See, e.g.*, Tr. 11,452 (Arnold); Tr. 11,706-07 (Ross); Keimig, ff. Tr. 11,946, at 11; Hukill, *et al.*, ff. Tr. 11,617, at 15. The

O&M Director is no longer responsible for the unit's engineering, radiation protection, water chemistry, and administrative activities. Instead, he can focus his attention on plant operations, and on the facility's preventive and corrective maintenance programs. Hukill, *et al.*, ff. Tr. 11,617, at 9. Essentially, it is the O&M Director's job to see to it that all operational problems which arise are properly diagnosed, so that appropriate action can be taken. It is also his responsibility to coordinate effectively the activities of the Operations and Maintenance Departments, with a staff of approximately 260, and, in particular, to ensure that Maintenance personnel are responsive to the needs of Operations. *Id.*, at 8.

75. Reporting directly to the O&M Director are the Manager of Plant Operations and the Manager of Plant Maintenance. Hukill, *et al.*, ff. Tr. 11,617, at 11, 30.

76. The Manager of Plant Operations, Michael J. Ross, is responsible solely for the day-to-day operations of TMI-1; conversely, he has no responsibilities that do not directly affect the daily operation of TMI-1. Staff Ex. 4, at 8; Hukill, *et al.*, ff. Tr. 11,617, at 11. He has approximately 110 personnel assigned to him, 75 of whom are assigned shift personnel. Staff Ex. 4, at 8; Tr. 11,937-38 (Crocker). On a daily basis, the Manager of Plant Operations reviews and schedules all routine and non-routine operations; is in charge of requesting operations-related maintenance work from the Maintenance Department; reviews and writes operating procedures; and is available to consult with his staff with respect to plant operations. Hukill, *et al.*, ff. Tr. 11,617, at 11.

77. The Operations staff, under the direction of the Unit 1 Manager of Plant Operations, is divided into three categories: the shift operating staff, the radwaste group, and several operations engineers. In addition, working in conjunction with the control room operating personnel are the Shift Technical Advisors (STAs) who represent the input of and report to the Technical Functions Division of GPU Nuclear, not to TMI-1 on-site management. *Id.*, at 12.

78. The shift operating staff control the reactor primary and secondary systems as well as associated plant systems and equipment during normal operations and plant shutdowns, in response to reactor transients, and when emergencies unrelated to the operation of the facility are experienced on site, such as fires or personnel injuries. Hukill, *et al.*, ff. Tr. 11,617, at 13. Licensee's licensed shift operating staff is to be composed of six shift supervisors,¹² seven shift foremen (three of whom are candidate

¹² This was Licensee's staffing level before the personnel action taken as a result of the IE investigation into the alleged cheating involving shift supervisors on the SRO licensing examination. We have not yet learned whether or when Licensee will be able to maintain this level.

senior reactor operators (SROs), *i.e.*, they have not yet been licensed as SROs by the NRC), and about twenty control room operators (ten of whom have reactor operator (RO) licenses, although they will be retested along with the candidate ROs prior to restart of Unit 1), along with thirty-six (non-licensed) on-shift auxiliary operators. Staff Ex. 13, at 4; Tr. 11,666-69 (Hukill); Hukill, *et al.*, ff. Tr. 11,617, at 14-24.

79. The staffing of the TMI-1 control room has been the subject of a strong contest in this proceeding and was one of the subjects of the commitments worked out between the Commonwealth of Pennsylvania and Licensee. Licensee Ex. 59. We discuss these issues in greater detail under the section on Conditions and Commitments below. Licensee in general plans a six shift operation of its control room with one shift in training while the other five shifts staff the control room. *Id.* Under the condition the Board imposes below (adopting the Staff position), if TMI-1 is permitted to restart, Licensee will be required to man all shifts at TMI-1 with a minimum of one NRC-licensed SRO, who will act as Shift Supervisor, a second individual, either NRC-licensed as an SRO or NRC-licensed as an RO and trained as an SRO, who will act as Shift Foreman, and a minimum of two NRC-licensed ROs who will act as control room operators.

80. Another improvement in the quality of Licensee's shift operating staff is the addition of an STA, or shift technical advisor, to each of the rotating shifts. The position of STA was instituted at TMI-1 in response to the accident at TMI-2, and was subsequently adopted as one of the recommendations of the NRC Lessons Learned Task Force, NUREG-0578 (1979) Hukill, *et al.*, ff. Tr. 11,617, at 28. The STA is a degreed individual with the primary duty of assessing the impact which various plant operations may have on safety. During off-normal conditions, the STA's specific duties include recognizing and diagnosing unusual reactor and instrument responses. During normal operating conditions, the STA's duties include evaluation of plant performance, and of the adequacy of procedures used to assess that performance. Thus, the STA monitors and provides direct technical input to the ongoing activities in the TMI-1 plant. Because an STA must have a Bachelor of Science or Engineering degree, he provides additional analytical and technical capability to support the operator on an around-the-clock basis. The STA can, for example, analyze conditions in the core in the event of a transient. This analytical capability heretofore has not necessarily been present. At TMI-1, on an ongoing basis, the STA evaluates the need for and recommends corrective action on safety components and systems; advises the shift foreman or shift supervisor, as needed; and provides a technical liaison with the GPU Nuclear Technical Functions engineers. *Id.*, at 28-29.

81. While the Board expressed an initial skepticism about the willingness of the regular shift crew to accept the advice of an individual who has a college degree but who has not been licensed on the plant, these doubts were put to rest by Mr. Michael Ross, Manager of Plant Operations, TMI-1, who stated that the STAs are accepted and, in fact, are looked to for advice by the rest of the shift crew. Tr. 11,645-46 (Ross); *see also* Tr. 11,642-45 (Hukill). Moreover, Messrs. Hukill, Toole and Ross, agree that the concept of the shift technical advisor as an adjunct to the regular operating crew is a good idea. Tr. 11,646-47 (Hukill, Toole, Ross).

82. Similarly, the Staff concluded that STAs having the qualifications required by the Licensee will be able to provide an added measure of technical expertise on-site and that Licensee's STA program meets Staff requirements. Staff Ex. 14, at 46. The Staff's review also indicates that the initial incumbents of Licensee's STA program meet the qualification requirements as stated in Licensee's description of its program, and that Licensee is in full compliance with all NRC requirements regarding STAs as set forth in NUREG-0737. *Id.*, at 46-47. The Board is satisfied with Licensee's STA program.

83. An important aspect of Licensee chain of operating authority at TMI-1 is that several levels of the operating staff have the independent authority and responsibility to shut down and cool down the reactor, or to order such action, if such action is warranted. These individuals include the Vice President of TMI-1, the O&M Director, the Manager of Plant Operations, the shift supervisors, the shift foremen and the control room operators. Hukill, *et al.*, ff. Tr. 11,617, at 5, 8, 11, 15, 18, 22; Tr. 11,629, 11,635 (Hukill). Guidelines exist for the control room operators. Tr. 11,630 (Ross). This authority does not extend to STAs, ROs in training, or auxiliary operators.

84. The Board has also taken into account in its review of Licensee's operating staff the method used by Licensee to assure that each shift properly turns over its control of the plant to the incoming shift. Hukill, *et al.*, ff. Tr. 11,617, at 13-14; Staff Ex. 4, at 12. The Board concurs with the Staff's finding that the shift relief turnover checklists and other management controls for plant operational activities which the Licensee has adopted since the TMI-2 accident provide improved management information on plant status and better control over plant operational activities. Staff Ex. 4, at 12.

85. The Manager of Plant Operations is also in charge of the TMI-1 Radwaste group, which carries out the daily radioactive waste activities at the facility. Hukill, *et al.*, ff. Tr. 11,617, at 24. It is the job of the Radwaste group to collect, decontaminate, package, prepare to ship or

otherwise properly dispose of materials, liquid and solid, which exceed a specified level of radioactive material. The TMI-1 Radwaste organization is discussed under CLI-80-5 issue (5), ¶¶ 377-386, *infra*.

86. The Manager of Plant Operations, TMI-1, is also in charge of the activities of several operating engineers from whom he can obtain immediate and short-term engineering work. Hukill, *et al.*, ff. Tr. 11,617, at 26-27. These personnel assist the Manager of Plant Operations in writing operating procedures, reviewing these procedures for their effectiveness, and otherwise providing additional support for operations-related engineering problems. The availability of operating engineers within the Operations staff provides added depth to the station organization in that three levels of technical support — operating engineers, TMI-1 Plant Engineering Department and GPUNC Technical Functions group — are now available to the plant Operations staff during normal plant operations. *Id.*, at 27.

87. The Maintenance Department is the other major plant organization which reports directly to the O&M Director. Hukill, *et al.*, ff. Tr. 11,617, at 30. The organization and practices of the TMI-1 Maintenance Department have changed considerably since March 1979. Shovlin, *et al.*, ff. Tr. 13,533, at 1. In general, the scope of responsibility of key individuals has been narrowed to provide for a more intense focus on the various aspects of the maintenance within one nuclear power plant unit. Three major areas of responsibility are: Preventive Maintenance and Technical Specification Surveillances, Corrective Maintenance, and Shift Maintenance. Prior to March 1979 one Manager of Plant Maintenance was responsible for both TMI-1 and TMI-2. With the separation of the units the Manager of Plant Maintenance at each unit has responsibility for maintenance for his unit only. *Id.*, at 1-2; Wegner, ff. Tr. 13,284, at 16-18.

88. Consistent with Licensee's policy of increasing and concentrating the technical resources and management strength applied to its nuclear activities, Licensee has established a Maintenance and Construction Division of GPU Nuclear Corporation, headed by a Vice President, with the responsibility of (1) establishing and monitoring uniform policies, practices and procedures for all maintenance, repair and construction activities at GPU's nuclear plants, and (2) carrying out assigned plant modifications, repair and construction activities and conducting major and specialized maintenance work. Manganaro, ff. Tr. 13,643, at 1-2; Wegner, ff. Tr. 13,284, at 18-19.

89. The Manager of Plant Maintenance Daniel M. Shovlin, in coordination with the Manager of Plant Operations, is in charge of planning, organizing, integrating and directing the daily maintenance effort that takes place at Unit 1. Hukill, *et al.*, ff. Tr. 11,617, at 30; Shovlin, *et al.*, ff. Tr. 13,533, at 2. It is the responsibility of the Manager of Plant Maintenance to coordinate preventive maintenance, and to direct the

diagnosis and repair of all equipment that Operations has identified as in disrepair, requiring component replacement or in need of other corrective maintenance work. Hukill, *et al.*, ff. Tr. 11,617, at 30-31. In addition to the two major maintenance staffs (corrective and preventive) reporting to the Manager of Plant Maintenance, there are 35 utility workers, who primarily perform a housekeeping function, a welding foreman, and a senior technical analyst responsible for maintenance work associated with the TMI-1 security and communications systems. *Id.*, at 38. In total, there are approximately 150 employees assigned to the Manager of Plant Maintenance. The Manager of Plant Maintenance obtains technical support from the TMI-1 Plant Engineering staff in carrying out his responsibilities. In the event that the necessary work appears to require a great deal of manhours or technical analysis, the Manager of Plant Maintenance through the Plant Engineering Department calls upon the technical resources available from the Technical Functions Division of GPU Nuclear Corporation. Major plant maintenance and construction activities are assigned to the Maintenance and Construction Division of GPU Nuclear. It is the responsibility of the Manager of Plant Maintenance to oversee all maintenance activity at TMI-1. Through this centralized organization, TMI-1 management coordinates and scrutinizes all on-site maintenance activities. *Id.*, at 30-31.

90. Maintenance at TMI-1 is divided into two, entirely separate organizations: the preventive and the corrective maintenance groups. Hukill, *et al.*, ff. Tr. 11,617, at 33. The preventive maintenance (PM) group conducts the preventive maintenance program, which is a program of regular inspections and other preventive maintenance work on TMI-1 systems, particularly those related to the facility's safety and reliability, in order to decrease the likelihood of equipment experiencing failure during operation. Shovlin, *et al.*, ff. Tr. 13,533, at 5-6; Hukill, *et al.*, ff. Tr. 11,617, at 34. Included in the PM group are representatives from the electrical, instrumentation and control, mechanical and utility disciplines. There are about 25 people assigned to preventive maintenance, with eight of these employees on rotating shifts. Through its preventive maintenance program and staff of 25 PM employees, it is the goal of Licensee to assure reliable performance of equipment and to reduce to minimum the amount of corrective maintenance work required at TMI-1. *Id.*, at 4-5. It is Licensee's view that an established PM program such as the one now in place at TMI-1 promotes safety while optimizing equipment availability and reliability. Hukill, *et al.*, ff. Tr. 11,617, at 33. We agree.

91. In addition to the maintenance staff working full-time on preventive maintenance activities, Licensee's TMI-1 Maintenance Department includes a group of about 94 workers under the direction of the Corrective Maintenance (CM) Manager. On a daily basis, the CM Manager plans,

organizes, and directs corrective maintenance work at Unit 1. *Id.*, at 34. In fulfilling this responsibility, he is assisted by a Supervisor of Management Control and several other planners, who plan major maintenance tasks, develop schedules for the accomplishment of tasks within specified time frames, such as a refueling outage, and otherwise assist in the planning of the day-to-day corrective maintenance work at TMI-1. Shovlin, *et al.*, ff. Tr. 13,533, at 9-10. Reporting to the CM Manager are Lead Foremen in the disciplines of instrumentation and control (I&C), mechanical and electrical. Hukill, *et al.*, ff. Tr. 11,617, at 35. Each of these Lead Foremen is responsible for the activities of the foremen and the 24-hour shifts of maintenance workers in his respective disciplines. This responsibility encompasses all discipline activities related to the planning, organizing, and directing of day-to-day maintenance taking place at TMI-1. All work performed in the unit must be cleared with the Operations staff in order to ensure that it does not interfere with ongoing operational activities. Also, all corrective maintenance work must be performed in accordance with the Operational Quality Assurance Plan, and where necessary, with Radiological and Environmental Controls supervision. *Id.*, at 35-36.

92. In addition to the preventive and corrective maintenance personnel employed on site during the day, TMI-1 has a shift maintenance work force composed of six rotating sections, each comprised of a minimum of two men from each of the following disciplines: electrical, instrumentation and control, mechanical and utility. There are approximately ten men per shift section. Shift maintenance works on corrective and preventive maintenance items that can be completed during an eight hour shift. Each section is headed by a maintenance foreman, who reports to the Lead Shift Maintenance Supervisor. Shovlin, *et al.*, ff. Tr. 13,533, at 7.

93. Licensee has described in detail, and the Staff has approved, the qualifications of Licensee's maintenance managers including the Manager of Plant Maintenance, the Corrective Maintenance Manager, the Preventive Maintenance Manager, the Shift Maintenance Supervisor, and the Supervisor of Management Controls. Shovlin, *et al.*, ff. Tr. 13,533, at 3, 5, 7, 8-9, 10; Hukill, *et al.*, ff. Tr. 11,617, at 32-33, 35, 37; Staff Ex. 4, at 8-10, 13-14; Keimig, ff. Tr. 11,946, at 11-12, 13. These individuals have had either extensive Navy training in maintenance and operations, and/or extensive experience as maintenance workers and supervisors at TMI-1. We discuss the qualifications of some of these managers in a separate section below.

94. The conduct of maintenance activities at TMI-1 is discussed in connection with TMIA Contention 5, ¶¶ 277-348, *infra*. Briefly, Licensee utilizes GPU's central data processing equipment in order to record, plan, track, close out and maintain history with respect to all corrective and preventive maintenance work. This computerized system has many advan-

tages over the previous, entirely manual, system of conducting maintenance work. In particular, through this centralized computer bank of information, Maintenance now has the ability to prioritize assignments, to track and close out backlogged maintenance work, and to follow the current status of outstanding jobs. Shovlin, *et al.*, ff. Tr. 13,533, at 12-21.

95. In December 1980 the GPU Nuclear Off-site Maintenance and Construction Division was established under the direction of Mr. Francis F. Manganaro as its Vice President. Manganaro, ff. Tr. 13,643, at 1, 6. In general, it is intended that the Maintenance and Construction Division provide direction and support in the functional areas of maintenance, repair and construction to permit maximum concentration of attention and resources by plant management on safe and efficient operation and maintenance of the GPU nuclear generating stations. *Id.*, at 2; Staff Ex. 4, at 7; Wegner, ff. Tr. 13,284, at 18-19. The TMI-1 Manager of Plant Maintenance and his staff will remain responsible for assuring the material condition of the plant. Manganaro, ff. Tr. 13,643, at 2. The on-site Maintenance organizations will continue to carry out some of this work themselves using their Maintenance Department, but they may also identify work they cannot or do not wish to do, *e.g.*, because of a lack of technical resources. *Id.*; Tr. 13,645 (Manganaro). The Maintenance and Construction Division will have functional managers located at TMI and at Oyster Creek. Manganaro, ff. Tr. 13,643, at 2-3. These individuals will coordinate their activities with their functional managers, administrative support, and Vice President located at Licensee's corporate headquarters. *Id.*, at 3-6.

96. TMIA faults Licensee's evidentiary presentation on the role of the Maintenance and Construction Division. TMIA asserts that it does not know how much influence the division will have over TMI maintenance, what the work division will be, who will assign the work, who will handle conflicts between Division personnel and TMI-1 personnel and who will assure consistent policies. TMIA PF ¶¶ 64, 65.

97. It is not surprising that TMIA does not know the answers to its questions. It did not prepare for its sparse cross-examination of Mr. Manganaro on this subject, nor did it use its opportunity for cross-examination to seek the answers. Tr. 13,644-47 (Bradford, Manganaro).

98. Mr. Manganaro makes it clear in his testimony that he has already planned the categories of work to be performed by his Division compared to work by on-site maintenance personnel and that the size and complexities of the work to be performed will influence the judgment on the assignment. Manganaro, ff. Tr. 13,643, at 3-4. TMI-1 staff will continue to be responsible for the material condition of the plant. *Id.*, at 2. The Maintenance and Construction Division will never perform work without the approval of the Plant Manager. Tr. 13,648 (Manganaro).

99. The concept of providing an off-site maintenance support division with the large technical resources and specialization for large or special jobs was thoroughly explained and understood by the witness. Considering the entire record, the Board believes the evidence on the issue is adequate. Manganaro, ff. Tr. 13,643, at 1-6; Wegner, ff. Tr. 13,284, at 18-19; Arnold, ff. Tr. 11,434, at 27-28; Tr. 13,611 (Shovlin). Moreover, contrary to TMIA's unexplained conclusion in its management proposed finding ¶ 65, the idea of supporting three separate nuclear units each having staggered shutdown times, or changing needs, by a central group equipped for large maintenance, repair and modification work, is a better approach than attempting to house all the needed maintenance and modification resources at each nuclear plant. Accordingly, we reject TMIA's proposed findings ¶¶ 64 and 65.

100. In addition to the supervision of activities for which the Operations and Maintenance Director is responsible, the Vice President of TMI-1 oversees the activities of a large TMI-1 Plant Engineering Department, under the direction of the Director, Plant Engineering, Joseph J. Colitz. Hukill, *et al.*, ff. Tr. 11,617, at 40; Keimig, ff. Tr. 11,946, at 11. The TMI-1 Plant Engineering group consists of 45 individuals who provide the on-site technical capability to support the day-to-day safe operation and maintenance of the generating facility. Hukill, *et al.*, ff. Tr. 11,617, at 40; Staff Ex. 4, at 8. This support covers the electrical, mechanical, nuclear and instrumentation and control engineering disciplines, plant chemistry, and fire protection. These rather diverse activities are managed by the Director of Plant Engineering, who works closely with the Operations and Maintenance Director to ensure that appropriate priorities are maintained in those areas where plant Operations or Maintenance require technical support from the Plant Engineering staff. In addition, the Director of Plant Engineering works with the O&M Director and his staff in preparing operating and emergency procedures; ensuring that the Technical Specification requirements are met; providing engineering and other technical support to ongoing preventive and corrective maintenance work; reviewing and evaluating changes in plant design or procedures; and supporting refueling outage activities. The Director of Plant Engineering is the major TMI-1 liaison to the Technical Functions Division of GPU Nuclear Corporation. Hukill, *et al.*, ff. Tr. 11,617, at 40-41; Staff Ex. 4, at 8.

101. The TMI-1 Plant Engineering Staff is composed of lead engineers and supporting engineers in the mechanical, nuclear, electrical and instrumentation and control engineering disciplines. Hukill, *et al.*, ff. Tr. 11,617, at 43. All four of the lead engineers at TMI-1 have Bachelor of Science or Engineering degrees or better, and from four to eleven years of experience in their respective disciplines. *Id.*, at 43-48.

102. The TMI-1 Chemistry Department, under the direction of the Supervisor of Chemistry, also reports to the Director of Plant Engineering. This Department conducts all TMI-1 water chemistry-related work, including sampling and laboratory analysis on the primary and secondary systems of the TMI-1 reactor in order to ensure that the water chemistry meets plant Technical Specifications, manufacturer specifications, and discharge limits. It is also the responsibility of this group to provide technical supervision and assistance in the operation of the water treatment, chemical addition, and waste treatment systems at TMI-1. *Id.*, at 50. The Supervisor of Chemistry, who has a B.S. degree and approximately 12 years of experience in chemistry and radiochemistry, directs the activities of the twelve chemistry technicians, who operate on a six shift basis, with the assistance of a technical assistant and a chemical foreman. *Id.*, at 50-51.

103. Finally, TMI's Generation Maintenance System coordinators report to the Director of Plant Engineering. These analysts coordinate the scheduling of and provide the data to computer operators regarding preventive maintenance work at TMI-1. *Id.* They also review for completeness maintenance records, machinery history files and generally, provide the interface between the computer system and its on-site users, particularly, the Maintenance Department. *Id.*, at 51-52.

104. Licensee's on-site and off-site organizations also include various emergency assignments, operational advice and safety review groups which we cover under the related functional discussions.

105. Considering also our findings on Licensee's Quality Assurance program, ¶¶ 107-115, *infra*, we conclude that the Licensee's command and administrative structure at the level of the TMI-1 plant is appropriately organized to provide reasonable assurance that TMI-1 can be operated safely. CLI-80-5 issue (1).

106. Taking into account also our findings elsewhere in this decision, especially with respect to qualifications of the TMI-1 managers and technical staff, ¶¶ 116-162, *infra*, Licensee's training program, ¶¶ 163-276, *infra*, and findings on TMIA Contention 5, ¶¶ 277-348, *infra*, the Board concludes that the operations and technical staff of TMI-1 is qualified to operate the unit safely. We also conclude that, considering Licensee's off-site technical support divisions, the TMI-1 maintenance program is appropriately organized and staffed to provide reasonable assurance that TMI-1 can be operated safely.

Quality Assurance

107. Although the issue of the sufficiency of Licensee's quality assurance (QA) program and organization is not separately identified by the Commission in its March 6, 1980 Order and there were no contentions on

this specific subject, the issue of Licensee's operational quality assurance program was identified in the August 9, 1979 Commission Order and Notice of Hearing as a specific short-term action item to be resolved by Licensee prior to restart. Short-term item 6, 10 NRC 141, at 145. The Board considers these matters to be subsidiary to the question of the adequacy of Licensee's command and administrative structure, at both the plant and corporate levels, to assure safe operation of Unit 1 (CLI-80-5 issue (1)); consequently, we will address the issue of Licensee's QA program and organization at this juncture. Except as it narrowly relates to TMIA Contention 5, no party has disputed the evidentiary presentation by the Licensee and Staff on quality assurance. We have adopted most of Licensee's proposed findings on this subject. The Board particularly requested a detailed presentation on quality assurance.

108. The rationale for the association of QA with Licensee's command and administrative structure is based on the fundamental importance of quality assurance as the designated, institutionalized, internal check on the functioning of the GPU Nuclear organization. Distinct from so-called safety reviews, quality assurance is that part of the formal structured organization which functions as a watch dog for the system. Its purpose is to assure, on a day-to-day basis, that the system is working as designed, *i.e.*, that the organizations which make up the plant and corporate structure are performing the functions for which they were intended and that this method of operation does in fact promote the safe operation of TMI-1. Arnold, ff. Tr. 11,434, at 16, 33; Tr. 11,893-94 (Kazanas); Tr. 11,551-52 (Arnold).

109. The overall QA organization and staffing established for TMI-1 has been restructured and improved since the TMI-2 accident to include responsibility for implementation of the QA controls required in day-to-day activities and for involvement in the review and concurrence of procedures associated with these activities. The authority and responsibilities of the QA organization have been expanded to include all the important activities that occur during the operation of the plant. The QA staff has been increased in size and its qualifications relative to education and experience have been improved. Staff Ex. 1, at C6-8.

110. Licensee's Quality Assurance Department is one of four functional departments within GPU Nuclear's Assurance Division. Arnold, ff. Tr. 11,434, at 15. The three other departments are Training and Education, Nuclear Safety Assessment and Emergency Preparedness, each of which will be addressed by us in detail in later portions of these findings. *Id.*; Staff Ex. 4, at 5. Mr. Herbein, Vice President for Nuclear Assurance, characterized the role of the Nuclear Assurance Division as a key one, particularly in light of the lessons learned from the TMI-2 accident, such as the importance of training, quality assurance, and nuclear safety assess-

ment. Tr. 11,907 (Herbein). Mr. Herbein believes that the Nuclear Assurance Division, which provides technical capability in the home office as well as on-site at GPU's nuclear generating stations, can support the GPU Nuclear Corporation in these areas through its amassing within the Division of some 70 professionals with Bachelor of Science degrees in engineering, as well as a number of Masters and Ph.D. degrees. *Id.*; Staff Ex. 4, at 5.

111. Nuclear Assurance's Quality Assurance Department is under the direction of the Manager of Quality Assurance, Mr. Nicholas Kazanas, who reports directly to Mr. Herbein. Arnold, ff. Tr. 11,434, at 16; Tr. 11,869 (Kazanas). However, in addition to this direct reporting chain, Mr. Kazanas had unencumbered access to Mr. Arnold or Mr. Clark, as well as to the Vice President, TMI-1, Mr. Henry Hukill. Arnold, ff. Tr. 11,434, at 16.

112. The Manager of Quality Assurance evaluates the manner in which all activities important to safety, both on-site and off-site, are conducted with respect to quality, by means of review, audit, monitoring, and inspection. In order to facilitate this function, the Manager of QA, as well as the Director of the Nuclear Assurance Division, are independent of design, procurement, manufacturing, construction, operations and maintenance line responsibilities. Arnold, ff. Tr. 11,434, at 16. The Staff believes that the independence of QA from these line functions, combined with the reporting level of the Department, assures sufficient freedom from the pressures of cost and schedule to permit effective implementation of the QA program. Staff Ex. 1, at C6-8. The Manager of QA, through his staff, performs evaluations on a planned and periodic basis to verify that the QA program is being effectively implemented. He identifies quality problems and initiates, recommends or provides solutions through designated channels and verifies implementation of problem solutions. *Id.* The Manager of QA has authority to issue stop work orders and to initiate through management unit shutdown orders, in accordance with his assigned responsibilities and applicable QA procedures. Arnold, ff. Tr. 11,434, at 16-17.

113. The Quality Assurance Department is organized into six organizational units: Design and Procurement Assurance, including the Manufacturing Assurance subsection, Modifications/Operations for TMI, headed on-site by Mr. Blaine Ballard, and a separate, parallel group for Oyster Creek in which Quality Control and Operational Quality Assurance work is conducted, Program Development and Audit, and Materials Technology. *Id.*, at 17-19, Figure 2; Tr. 11,881-84 (Kazanas); Staff Ex. 1, at C6-8 to C6-9. The total complement of QA personnel within GPU Nuclear, including Oyster Creek, is approximately 131. Tr. 11,884 (Kazanas). As of February 1981, approximately 65 to 70 QA personnel were assigned to TMI, 30 of whom were actively engaged in TMI-1 work. Licensee's 1981

budget provides for approximately 44 people working on the TMI-1 QA program. Arnold, ff. Tr. 11,434, at 19. These figures contrast sharply with the 18 permanent QA personnel within Met Ed's total QA organization prior to the accident. According to Mr. Arnold, this increase can be attributed to the importance Licensee places upon the QA function, as evidenced by the fact that the scope of QA's responsibilities has been expanded to include systems and components having functions important to safety,¹³ as well as the traditional QA scope of systems and components classified as safety related. *Id.*, at 19-20; see also Staff Ex. 1, at C6-9, C6-12. In addition, the number of activities which have been classified as important to safety have been significantly increased, and QA activities which were previously the responsibility of other groups, such as non-destructive examinations associated with inservice inspection, have now been added to the responsibilities of the QA Department. Arnold, ff. Tr. 11,434, at 20. In the Staff's opinion, the scope of the new QA program represents a significant improvement relative to the acceptable scope in effect prior to the TMI-2 accident and to that of other operating reactors, and is acceptable for restart. Staff Ex. 1, at C6-7, C6-9, C6-12; Staff Ex. 14, at 23.

114. In general, it is the Staff's view that Licensee's proposed QA program for TMI-1 operations will satisfy the requirements of Appendix B to 10 CFR Part 50 and provides QA controls improved significantly beyond those in use prior to the TMI-2 accident. The major areas where the QA controls have been improved, in addition to the expansion of the applicability of the QA program, are: greater involvement of the QA organization in the review and approval of quality-related aspects of procedures for operations, maintenance, inservice inspection, modifications and procurement; in the performance of inservice inspections, nondestructive examinations, routine inspections, verification, surveillance and audit activities; in the day-to-day operations and maintenance staff meetings to keep abreast of ongoing activities; in determining adequate close-out of corrective actions; and, better control of as-built drawings. Staff Ex. 1, at C6-7 to C6-8, C6-9 to C6-12.

115. The Board was able to discuss Licensee's QA program with the individuals having principal responsibility for QA activities associated with TMI-1, *i.e.*, Mr. Herbein, Mr. Kazanas, and Mr. Blaine Ballard, the Manager of TMI QA Modifications/Operations. Tr. 11,793-908 (Herbein, Kazanas, Ballard). On the basis of Mr. Arnold's detailed description of the

¹³ It should be noted that Licensee's quality assurance program has been applied to systems and components beyond those considered "important to safety", as that term was used in the plant design and procedures phase of the hearing. Conran, ff. Tr. 8,372.

QA organization and its areas of responsibility, the Staff's satisfaction with the organization, staffing and scope of QA activities, and the oral testimony by Messrs. Herbein, Kazanas and Ballard, the Board is satisfied that Licensee's QA organization and program will be in a position to reasonably assure, or bring to the attention of top management in those cases where it cannot assure, that the organizations which make up the plant and corporate structure are performing properly the functions for which they were intended. If the QA functions are properly performed, the Licensee's QA program and organization as restructured would promote the safe operation of TMI-1. Of course, continuing oversight by the Staff, through its inspections and other regulatory functions, will be an important part of the basis for the NRC's reasonable assurance that the Licensee's QA functions are being performed in fact with the independence, skill and emphasis necessary for this "watch dog" function.

Licensee's Managers

116. The NRC Staff followed the guidelines of Draft NUREG-0731, Guidelines for Utility Management Structure and Technical Resources,¹⁴ in evaluating the Licensee's managers and management organization. Crocker, Allenspach, ff. Tr. 12,653, at 8-9; Tr. 11,987-95 (Crocker). Other NRC standards exist for the qualifications of, for example, operational personnel, STAs, and engineering and technical personnel. But, as far as we can determine, the only expressed NRC standard for the qualifications of high-level nuclear utility management personnel is set forth in Draft NUREG-0731, which, in turn, depends heavily upon American Nuclear Society (ANSI) Standards. *Id.*, at 11,994.

117. From Draft NUREG-0731, pp. 12, 14 we learn:

As a minimum, the management official in overall charge of nuclear power shall have a bachelor's degree in science or engineering degree in a field associated with power production and ten years of experience associated with power plant design and operation, at least five years of which shall be nuclear power plant experience. Persons with management capability shall be provided in the areas that are important for the support of the nuclear power plant. The principal areas are operational management and engineering management.

¹⁴ The Board officially notices Draft NUREG-0731 for the limited purpose of demonstrating the guidelines employed by the Staff, not for evidence of the adequacy of the guidelines. Copies of Draft NUREG-0731 were provided by the Staff to the Board and parties. Tr. 11,820, 11,947. The Staff's use of the NUREG was clearly stated in the Crocker, Allenspach direct testimony cited above. In addition, pages 15 and 16 of NUREG-0731 were received into evidence following Tr. 11,820.

The manager of each specific functional area shall have, as a minimum, a bachelors degree generally associated with that of his function and eight years of responsible experience, of which three years shall be specifically related to the type of function he will perform. Suitable depth should be provided to assure adequate support to the plant staff in the event of an emergency, such as at the plant Technical Support Center or the near-site Emergency Operations Facility (see Part III - Criteria For Accident Conditions).

118. We recognize that the Staff guidelines are intended to be only minimum qualifications. However, the guidelines fall far short of providing assurance that the incumbent is in fact qualified for his job. The NRC Staff itself does not narrowly follow its own guidelines; it exercises subjective judgment and makes comparisons among nuclear utilities to evaluate managers' qualifications. Tr. 11,983-88 (Crocker, Allenspach).

119. Licensee's witness, Mr. Wegner of BETA, recognized that the NRC management criteria lack specificity. In explaining his approach to the evaluation of Licensee's management, he observed:

It is important to understand this lack of specificity as regards management capability and technical resources, particularly as I discuss the results of our assessment. In assessing purely technical issues, while there may be disagreement with a given solution and the assumptions made in arriving at it, at least one is generally dealing with the laws of nature. In management capability and technical resources, one is dealing with people, with organizational structure, with attitudes and with many other attributes, none of which conform to any given laws. How one utility may organize itself to handle a given situation may be entirely different from another, yet both may be equally effective. Where one person in a given organization may be capable of handling a certain range of responsibilities, another organization may require two people. The overall capability of an organization must be judged by looking at the entire picture, not just one isolated segment. This is what we attempted to do.

Wegner, *et al.*, ff. Tr. 13,284, at 2-3.¹⁵

¹⁵ In his direct testimony (*Id.*, at 3) Mr. Wegner quoted from Admiral Rickover's testimony before Congress on May 24, 1979 on the TMI accident which we believe is instructive:

Over the years, many people have asked me how I run the Naval Reactors

CONTINUED

120. Duke Power Company President William Lee, in addressing the issue of Met Ed's response to the accident, included his view of the quality of Licensee's management — its personnel as well as its structure. Lee, ff. Tr. 13,251. As Chairman of the Board of Directors of the Institute of Nuclear Power Operations (INPO), and as the chief operating officer of a large nuclear utility, Mr. Lee should know what good nuclear utility management looks like. He recognized that there is no generally recognized list of standards. Tr. 13,280 (Lee). He had his own set of objective standards before the accident but observes that the lessons learned from the accident taught the industry to improve its management capabilities. Lee, ff. Tr. 13,251, at 9-11.

121. Generally, we characterize Mr. Lee's objective management criteria as centering upon three basic tests: is it logically organized, has the management produced acceptable results and has it made the appropriate commitment of expenditures and resources. *Id.*, at 6-10. When evaluating the individual managers, however, he depends only partly upon objective technical qualifications. *Id.*, at 4. He stressed the other, more intangible qualities of good nuclear managers: innovative leadership, organizational skills, the ability to function in a crisis with objectivity and calm, good judgment, and the ability to interface with many persons and organizations. *Id.*, at 4, 5, 12.

122. Based upon intangible subjective observations, the NRC Staff witnesses believe that the senior management for TMI and GPU Nuclear are probably above the norm for other utilities the Staff has looked at in reviewing six plants in the last year for near-term operating licenses. Tr. 11,982-87 (Crocker, Allenspach). The Board encouraged the cognizant NRC Staff witnesses to report any misgivings about the quality of Licensee's management and to recommend further areas of inquiry to complete the record on management issues. The Staff witnesses had nothing unfavorable to report and had no recommendation for further inquiry. The Board could sense no reluctance on the part of the Staff witnesses to endorse Licensee's management personnel. Tr. 11,995-12,005 (Crocker, Allenspach, Keimig, Haverkamp).

123. BETA associates, while recognizing the intangible aspects of assessing human management qualities as noted above at ¶ 119, limited their evaluation of Licensee's management to objective standards, such as organizational structure, training and experiences of personnel and commit-

Program, so that they might find some benefit for their own work. I am always chagrined at the tendency of people to expect that I have a simple, easy gimmick that makes my program function. They are disappointed when they find out there is none. Any successful program functions as an integrated whole of many factors. Trying to select one aspect as the key one will not work. Each element depends on all the other elements.

ment of resources. Wegner, *et al.*, ff. Tr. 13,284. We believe that it was not surprising for the BETA associates to withhold their subjective evaluation of Licensee's management personnel, considering that BETA is employed by Licensee's management personnel. It was only when pushed by the Board that Mr. Wegner of BETA commented favorably on the attitude of Licensee's high-level management. Tr. 13,303; 13,310; 13,316-20 (Wegner).

124. Mr. Lee of Duke Power and INPO was strong in his praise of the intangible attributes of Licensee's high-level management. Lee, ff. TR. 13,251, *e.g.*, at 4-5, 12.

125. With the Board's encouragement, the Licensee produced as witnesses most of its management personnel who would have an important influence upon the safe operation of TMI-1. No member of the Board is an expert in utility management capability, but we believed that it was important, as representatives of the Commission, to see and hear the managers to whom Licensee would entrust the health and safety of the public. Licensee's counsel did not object, nor did the witnesses complain, when the Board frequently permitted cross-examination beyond the scope of the direct examination to explore management attitude and broader management issues. The Board itself examined the managers extensively on a wide array of technical and management subjects.

126. In our review below of the individual members of Licensee's management, we discuss their respective objective technical qualifications and experience particularly where they are in issue or where they are important to our findings. Before we do so, however, we briefly discuss our subjective observations and impressions. Each of Licensee's managers discussed below appeared as a witness.

127. Each of us has had experience with utility management witnesses in other hearings. In our view, as a group, their demeanor, poise and demonstrated command of information compare favorably with other utility managers we have observed. We could detect neither arrogance nor situational resentment, nor, on the other hand, truckling. When examined closely on technical matters within their respective areas of responsibility they seem to be technically competent, although we were concerned, as we note below, that some individual members of Licensee's management have insufficient experience or training for emergency duties. Considering the many days spent by some of them under cross-examination, the opportunities to reveal incompetence were abundant, but none of them appear to be incompetent or intellectually unsuited for his assignment. They are very serious about their responsibilities but appear to be confident in their abilities.

128. Our overall subjective impression of Licensee's management was favorable, although we caution that the hearing room is no place to measure broad management capability, nor as we stated at the outset, are we ideal judges of those intangible qualities needed in competent utility management.

Corporate Level Managers

129. Mr. Herman Dieckamp is president of General Public Utilities and the GPU Service Corporation. He is also a director of GPU and each of its subsidiaries. Since August 1979, he has been the acting president of Metropolitan Edison Company and he is the chairman of GPU Nuclear Corporation. He was graduated from the University of Illinois in 1950 with a Bachelor of Science degree in Engineering Physics. From 1950 to 1973 he worked in nuclear research and development and the management thereof with the Atomics International division of Rockwell International. He joined GPU in 1973 and assumed most of his current positions by 1974. Dieckamp, ff. Tr. 13,434, at 1.

130. Mr. Dieckamp's testimony (Tr. 13,437-13,514) concerned CLI-80-5 Issue (4) (separation of financial and technical departments) and the commitment of staffing, money and other resources to GPU's nuclear operations.

131. Mr. Robert C. Arnold, President of GPU Nuclear Corporation and its chief operating officer, received a Bachelor of Science degree in Science Engineering in 1959, and served for ten years in the U. S. Navy, six years of which were spent working in the Navy Nuclear Power Program. Arnold, ff. Tr. 11,434, at 1. Mr. Arnold qualified as a reactor operator during that period of time, and held senior management positions aboard a nuclear powered ship. He left the Navy in 1969 and joined Met Ed. Since that time, Mr. Arnold has assumed increasing levels of responsibility, including Vice President Generation at Met Ed and Vice President Generation at GPU Service Corporation. *Id.* Thus, he has had extensive engineering and management experience in the commercial nuclear industry:

132. In the event of a serious transient at a nuclear plant, Mr. Arnold would report to the site immediately (Tr. 11,487) and as the senior utility management official present would assume the role of Emergency Support Director. Rogan, *et al.*, ff. Tr. 13,756, at 33; Tr. 14,784-85 (Rogan). Mr. Arnold is, of course, a very important part of Licensee's management as it relates to the capacity of Licensee to operate TMI-1 safely.

133. TMIA criticizes Mr. Arnold. TMIA proposed findings ¶¶ 83-85. TMIA refers to Mr. Arnold's lapse of memory as to the identity of the Director of the Nuclear Safety Assessment Department of the Nuclear Assurance Division. TMI PF ¶ 84. The Board itself was concerned that

Mr. Arnold's failure to recall Dr. Whitesel's name was an indication that his role was not given sufficient importance in Mr. Arnold's mind (Tr. 11,548-49), but we were satisfied with the explanation that Dr. Whitesel had just been recruited in February when Mr. Arnold testified and would not report to work until April. Tr. 11,777 (Clark, Smith). Nor do we agree with TMIA that Mr. Arnold was insufficiently specific in discussing the Nuclear Safety Assessment Department and the Nuclear Assurance Division. TMIA PF ¶ 84. It was, after all, Mr. Arnold's purpose to describe the overall Nuclear Corporation structure.¹⁶ Licensee later provided witnesses with specific information. We found nothing in Mr. Arnold's lengthy appearance as a witness (Tr. 11,434-11,611) to indicate insufficient information or inappropriate attitudes and emphases.

134. Mr. Phillip R. Clark, the Executive Vice President, serves as Mr. Arnold's deputy in GPU Nuclear's Office of the President. Mr. Clark received a bachelor's degree in civil engineering from the Polytechnic Institute of Brooklyn in 1951. He also attended the Oak Ridge School of Reactor Technology from 1953 to 1954. He was in the U. S. Navy's Nuclear Power Program from 1954 to 1964, at which time he became the Associate Director, Reactors, Naval Reactors Division, U. S. Department of Energy and Chief, Reactor Engineering Division, Nuclear Power Directorate, Naval Sea Systems Command, Department of the Navy. In these positions, Mr. Clark was responsible for the direction of a major element of the U. S. Naval Nuclear Propulsion Program. He retired from government service in August 1979, having spent his last 15 years of government service as an Associate Director in Admiral Rickover's organization. In summary, Mr. Clark has had over 25 years of nuclear engineering and management experience in the Navy nuclear program. He joined GPU in January 1980. Clark, ff. Tr. 6,225 (attached qualifications).

135. TMIA disputes the appointment of Mr. Clark so strongly that it would have the Board find Mr. Arnold incompetent because he has entrusted important safety duties to Mr. Clark, who according to TMIA, was described by Mr. Arnold himself as incompetent. TMIA PF ¶ 85. TMIA's characterization of the evidence is a gross distortion. While Mr. Arnold agreed that Mr. Clark does not have the in-depth knowledge of the design and function of B&W reactors to free himself from reliance on the technical expertise of others (Tr. 11,520), he never referred to Mr. Clark as incompetent.

¹⁶ Although TMIA criticizes Mr. Arnold's testimony in its proposed findings, TMIA's representative declined her opportunity to test by cross-examination Mr. Arnold's command of information. Tr. 11,482 (Bradford, Smith).

136. Mr. Lee of Duke Power testified that his company had been prepared to offer Mr. Clark a significant management post and that he would have made Duke's already strong management team even stronger. Lee, ff. Tr. 13,251, at 12.

137. Mr. Clark comes to the management of GPU Nuclear with outstanding credentials. The Board believes that there are, in fact, significant management benefits from adding Mr. Clark's varied background and experience to the cumulative experience of GPU Nuclear Corporation management. Mr. Clark testified at length on management issues (Tr. 11,759-11,852), and on highly technical reactor design and operational issues (TR. 6,225-6,399). He appears to be highly qualified for his job.

138. The Commonwealth was concerned about the fact that Mr. Clark has no commercial reactor experience but would nevertheless be called upon to serve as the TMI-1 Emergency Support Director in Mr. Arnold's absence. Commonwealth Management PF ¶ 91, Tr. 14,784-85 (Rogan). The Commonwealth recognized, however, that the addition of personnel with diverse backgrounds, such as Mr. Clark's, should result in "significant management benefits". Commonwealth Management PF ¶ 89.

139. The Board itself was concerned that Mr. Clark might be called upon to serve as the TMI-1 Emergency Support Director without sufficient familiarity with the unit. One of the Licensee's commitments, made as a result of the agreement with the Commonwealth, is to require prior to restart a formal training course addressing site-specific design features for senior management personnel who have joined Licensee in the past two years, and who are designated to serve as Emergency Directors or as Emergency Support Directors. Licensee Ex. 56. This commitment which we adopt as a condition in this proceeding (*see* Conditions and Commitments, ¶¶ 552-553, *infra*) caused the Commonwealth to withdraw its objection to Mr. Clark and others as managers with emergency duties. Commonwealth Amended Reply Findings, at 3, 5.

140. The Vice President of the Nuclear Assurance Division is John Herbein. Mr. Herbein is a graduate of the Naval Academy with over 20 years of professional experience, about 15 years of which have been in nuclear power. He was trained in the Navy's nuclear power program, and was Assistant Operations Supervisor at Yankee Rowe and Operations Supervisor at Saxton before coming to Three Mile Island in 1970, as TMI Unit 1 Engineering Supervisor. He has been TMI Plant Superintendent, Manager of Nuclear Operations, and Vice President Generation at Met Ed. Arnold, ff. Tr. 11,434, at 15, 16.

141. Mr. Herbein is also named as third on the list of GPU Nuclear officials designated to serve as TMI-1 Emergency Support Director. Tr. 14,784-85 (Rogan). TMIA severely criticizes Licensee for placing Mr. Herbein as the Vice President for Nuclear Assurance (TMIA Management PF ¶ 86; TMIA Reply F ¶¶ 26-33) and would have the Board find:

86. In particular, we question Licensee's placing as Director of the Nuclear Assurance Division J. H. Herbein. As such, he has direct responsibilities for Emergency Planning, as well as all other nuclear safety-related issues for GPUNC. While we do not question Mr. Herbein's background and level of technical expertise, we do indeed question his demonstrated inability to utilize that expertise in times of stress, such as occurred on March 28, 1979.

142. We examine Licensee's management response to the accident in relation to CLI-80-5 Issue (10) below. Aside from TMIA's criticisms of Mr. Herbein for his actions following the accident and the various reports involving his participation, the Board has no information bringing into question Mr. Herbein's competence and, as TMIA urges us to do, we find that he has the background and technical expertise to serve as the Vice President for Nuclear Assurance.

143. An important member of Mr. Herbein's Nuclear Assurance Division is Nicholas Kazanas, Manager of the Quality Assurance Department. Arnold, ff. Tr. 11,434, at 16. Mr. Kazanas received an engineering degree in metallurgy in 1962, and has an M.S. degree in business administration. He has been in commercial nuclear work since 1967. Mr. Kazanas joined GPU Service Corporation in 1978 as the Manager of QA. In that capacity he worked primarily on construction activities at the Forked River project site until the accident at TMI-2. Tr. 11,871 (Kazanas).

144. The Technical Functions Division is headed by Richard Wilson, its Vice President. Mr. Wilson was graduated from the University of California at Berkeley with a bachelor's degree and from the University of Michigan with an M.S. degree in Mechanical Engineering. In addition to his year at Three Mile Island as Acting Director for TMI-2, he spent four years with GPU Service Corporation, first as Manager of Quality Assurance and subsequently as Director of Technical Functions, two years as Manufacturing Engineering Manager for Offshore Power Systems, Jacksonville, Florida, and 20 years in a variety of supervisory and management positions at Atomic International Division of Rockwell International, his latest being as AI's Program Manager on the fast breeder program. As we discuss under CLI-80-5 issue (11) below, Technical Functions is respon-

sible for assuring the technical adequacy of all aspects of GPU's nuclear activities to provide safe, reliable and efficient operations. Arnold, ff. Tr. 11,434, at 12.

145. The Vice President of GPU Nuclear's Radiological and Environmental Controls Division is Richard Heward. Mr. Heward has over 25 years of professional experience including a variety of management level positions directing design, safety analysis and construction activities in various positions during the past 13 years with GPU. Prior to joining GPU, he was employed by New York Shipbuilding Corporation where he was involved with that company's construction and start up of nuclear ships, responsible for organizing, qualifying and directing their radiological controls program. Mr. Heward is a graduate of Swarthmore College, Oak Ridge School of Reactor Technology and the Reactor Safety Course of the United Kingdom Atomic Energy Agency in Harwell, England.

146. Under an on-site Manager, Mr. Potts, the Unit 1 Radiological Controls organization provides for the areas of Radiological Control Program design, support, and enforcement as detailed in the approved Radiological Protection Plan, implementing procedures, and the Bioassay and Respiratory Protection programs, as we discuss below on CLI-80-5 issue (4). Additionally, Mr. Heward's division will conduct surveys and assessments related to protective controls in order to assure that radiological work is accomplished in compliance with approved procedures and applicable regulations and consistent with good radiological work practices. Arnold, ff. Tr. 11,434, at 14.

147. Mr. Francis F. Manganaro is Vice President of the Maintenance and Construction Division. Mr. Manganaro joined GPU in June 1980, after spending the previous 33 years in the U. S. Navy. A graduate of the U. S. Naval Academy, he also has a Masters degree from M. I. T. and post graduate work in management at Harvard University. His career includes 16 years in various engineering, design and repair facilities assignments, much of it associated with construction, maintenance, overhaul and refueling of nuclear ships. He was the Commander of the Puget Sound Naval Shipyard for four years, Chairman and Contracting Officer of the Navy Claims Settlement Board for two years following his election to flag rank, and served the last two years before retirement as Vice Commander, Naval Sea Systems Command. Mr. Manganaro is responsible for establishing and monitoring uniform policies, practices and procedures for all maintenance, repair and construction activities at GPU's nuclear facilities. Arnold, ff. Tr. 11,434, at 27; Manganaro, ff. Tr. 13,643, at 1, 6.

On-Site Managers and Technical Staff

148. The Vice President of TMI-1 is Henry D. Hukill, who has had extensive involvement in power reactor operations. Tr. 11,522 (Arnold); Wegner, ff. Tr. 13,284, at 16. Mr. Hukill joined GPU as the Prospective Director, TMI-1 in June 1980, and formally began serving as Director on September 8, 1980. Hukill, *et al.*, ff. Tr. 11,617, at 5. Mr. Hukill received a Bachelor of Science degree from the U. S. Naval Academy in 1953, and served on active duty in the U. S. Navy for more than 22 years, working primarily in the construction, maintenance and operation of nuclear submarines. Mr. Hukill has qualified as a reactor operator, in addition to holding a number of senior level positions aboard nuclear submarines, including commander. During his last four years on active duty, Mr. Hukill was assigned as a Special Assistant and Senior Line Officer on the Staff of the Director, Division of Naval Reactors. In this capacity, he was directly responsible for the selection and engineering training of all nuclear ship Commanding Officers, and was also directly involved in the establishment and enforcement of standards and procedures for the safe and proper operation of all naval nuclear propulsion plants. After leaving the Navy, Mr. Hukill served as the Project Operations Manager, Clinch River Breeder Reactor Plant Project for Burns and Roe (1976), and as a Senior Civilian Special Assistant to the Commander, Naval Sea Systems Command (1977-1980). While serving in this latter capacity, Mr. Hukill was responsible for all matters related to the selection, education, qualification, training and professional performance of the Navy's more than 1,200 Engineering Duty Officers. Hukill, *et al.*, ff. Tr. 11,617, at 5-7. In summary, Mr. Hukill has had over 22 years of nuclear power plant experience, the majority of which has been in the Navy Nuclear Program in line operations and management jobs, and in senior level management positions.

149. We accept Mr. Hukill's testimony that he has devoted considerable time to reviewing plant documents such as B&W instruction books to familiarize himself with the plant systems. Tr. 11,620 (Hukill). The Board was assured by Mr. Hukill's appearance and by his testimony that he has the will and competence to master his job as the principal manager of TMI-1. Tr. 11,617-11,715. However, we were reassured to learn that, as one of the officials designated as TMI-1 Emergency Director, and with less than two years service with Licensee, Mr. Hukill will take the formal training course for senior management personnel addressing site-specific plant design features. Licensee Ex. 56. As was the case with respect to GPU Nuclear Executive Vice President Clark, the Commonwealth has withdrawn its Proposed Findings ¶¶ 94-101 questioning Mr. Hukill's competence to serve as Emergency Director. Commonwealth Amended Reply Findings, at ¶¶ 3, 5.

150. Mrs. Aamodt would have us find Mr. Hukill (as well as others) lacking in qualifications because he does not have a degree in nuclear engineering (Aamodt Reply PF ¶¶ 79-80), but she does not explain why she would impose such a requirement nor can we identify any reason why such a degree is, in view of his great wealth of experience in nuclear engineering, necessary.

151. Mrs. Aamodt comes closer to a valid criticism, however, when she complains that Mr. Hukill does not hold an SRO license for TMI-1. *Id.* The NRC Staff in evaluating the required qualifications of a nuclear plant manager used the standards of Section 4.2.1 of ANSI/ANS 3.1-1978 and would require that the plant manager have the experience and equivalent training of an SRO whether or not the examination is taken. Crocker and Allenspach, ff. Tr. 12,653, at 5; Tr. 12,654-55 (Allenspach). Mr. Hukill has Navy experience which is roughly equivalent to SRO training. Tr. 12,655, 12,667-68 (Allenspach). Moreover at TMI-1, Mr. Ronald Toole, Director of TMI-1 Operations and Maintenance whom we discuss next, has actually held a commercial SRO license. Credit can be taken in TMI-1 management because Mr. Toole is an extra, in-line plant manager between Mr. Hukill and the actual plant operators. Tr. 12,656-57 (Allenspach). Mrs. Aamodt did not discuss these equivalencies in her proposed findings. She was not present to hear the Staff witnesses on the point. Tr. 12,651, 12,672 (Smith). We find that Mr. Hukill is qualified to be the Vice President of TMI-1.

152. Mr. Ronald J. Toole, the Director of TMI-1 Operations and Maintenance, assumed his responsibilities in February 1980. He is also the alternate Emergency Director if Mr. Hukill is unavailable. He has a Bachelor of Science degree in Electrical Engineering and has diversified power plant experience, having worked in both nuclear and coal facilities. He has previously served in management and engineering staff positions. Immediately prior to joining TMI-1, Mr. Toole was the Unit Superintendent in charge of two 650 MWe coal fired plants located at Pennsylvania Electric Company's Homer City Station. In this capacity, he was responsible for all engineering, maintenance and operational activities at the facility. Before going to Homer City Station, Mr. Toole was employed at TMI Unit 2 for over four years (September 1974 until December 1978) as the Test Superintendent responsible for construction, pre-operational and power escalation testing. From January 1971 until September 1974, Mr. Toole was the Assistant Test Superintendent for GPU at TMI Unit 1. In that capacity, he developed the schedule that was used in the testing and start-up program, beginning with energizing the auxiliary transformers through the initiation of commercial operation. During this period of time, Mr. Toole also worked for six weeks at the GPU Oyster Creek nuclear facility as the Refueling Supervisor, directing the operations and main-

tenance personnel in the performance of the first Oyster Creek refueling. In addition, Mr. Toole served as the Shift Test Director during the TMI-1 low power physics and power escalation programs. From February 1968 until December 1970, Mr. Toole worked for GPU as a shift test engineer at the Oyster Creek nuclear facility. During this period of time, he obtained a reactor operator's license (1969), and a senior reactor operator's license (1970). Hukill, *et al.*, ff. Tr. 11,617, at 9-10.

153. Also reporting directly to the Vice President TMI-1 is Mr. Joseph J. Colitz, Director of Plant Engineering. He has a degree in mechanical engineering, extensive experience as a practicing engineer at both fossil and nuclear power plants. He is a former TMI-1 Superintendent SRO-licensed on TMI-1 and, from the Board's first-hand experience, a person with a detailed working knowledge of the technical details of the plant and its systems. *Id.*, at 41-42; Tr. 3,115-16 (Jordan).

154. The current Manager of Plant Operations is Michael J. Ross, who has served in this capacity since April 1978. Prior to becoming Supervisor of Operations, Mr. Ross worked as a TMI-1 shift supervisor (July 1972 to April 1978). He was also a Unit 1 shift foreman for two years, beginning in August 1970. Mr. Ross also was employed as a member of the Operations staff and an operator instructor at the Saxton Nuclear Experimental Corporation. From 1960 when he graduated from high school until 1968, Mr. Ross served in the Navy, during which time he attended the U. S. Navy Nuclear Power School (26 weeks in 1961) and the Nuclear Power Prototype School (26 weeks in 1961); served as a reactor operator aboard the USS HADDO for three years (1962-1965); taught reactor controls and instrumentation at a Navy's Nuclear Power Training Unit (NPTU) from 1965 to 1966, qualifying at that time as an Engineering Officer; and served as an AEC Field Representative at the NPTU from 1966 to 1968, during which time he passed the Navy's nuclear engineering examination. Mr. Ross holds a senior reactor operator license on TMI-1.

155. Mr. Ross testified before the Board five times in appearances lasting many days on a wide variety of design, operating procedures and operator training issues. Following Tr. 6,225; 10,619; 11,617; 12,140; 16,552. See Appendix A, at A-20. During his appearances it became apparent to the Board that his fellow witness panel members relied upon Mr. Ross' broad and deep knowledge of the practical operating aspects of TMI-1, frequently deferring to him. We were pleased to have the opportunity to observe Mr. Ross so thoroughly, because he may be the most important person on the TMI-1 operating team as far as the public health and safety is concerned. We believe that the Licensee's reliance upon him

is justified. The Board was very favorably impressed by his appearances. We were also pleased to note that Mr. Ross is enrolled in an engineering degree program at Pennsylvania State University at Harrisburg.

156. Mr. Daniel M. Shovlin, the Manager of Plant Maintenance, is a Navy veteran of 27 years, during which time he assumed major responsibility for maintenance of several large combatant surface ships. Mr. Shovlin has worked at TMI since 1973 as Unit 1 Supervisor of Maintenance. Since that time, he has served as the Supervisor of Maintenance at TMI Unit 2, and then, in 1978, as the Superintendent of Maintenance responsible for all maintenance activities at Three Mile Island. He assumed his present responsibilities when the TMI-1 and TMI-2 organizations and units were formally separated in November 1979. Hukill, *et al.*, ff. Tr. 11,617, at 32-33; Shovlin, *et al.*, ff. Tr. 13,533, at 3.

157. The Board also had the opportunity to hear from several other members of the TMI-1 on-site team whose importance to safe operation is noteworthy:

158. Mr. William E. Potts is the Manager of the TMI-1 Radiological Control Department and serves as the on-site representative of the GPU Nuclear Radiological and Environmental Control's Division. He has a bachelor's degree in electrical engineering and has served in a variety of positions in Licensee's nuclear plants since 1970. At one time he held an AEC senior operator's license and has taken various educational and training courses including courses in radiological health, ASME quality assurance and management development. Heward, *et al.*, ff. Tr. 16,292 (qualifications attachment). The TMI-1 health physics program is the subject of CLI-80-5 Issue (4) and is discussed below.

159. Mr. Edwin C. Fuhrer, the Supervisor of Radwaste, has his degree in chemical engineering with about eight years experience in radwaste and environmental engineering. Hukill, *et al.*, ff. Tr. 13,617, at 26; ff. Tr. 10,020 and 16, 417. The staffing of the Radwaste organization is discussed in relation to CLI-80-5 issue (5) below.

160. Mr. Blaine Ballard is Mr. Herbein's on-site representative in the Division of Nuclear Assurance. He is Manager of the TMI Quality Assurance for Modifications/Operations. Mr. Ballard has his bachelor degree in electronics engineering, seven years experience in the nuclear Navy and varied experience in commercial power plants. Tr. 11,871-72 (Ballard).

161. Mr. Melvin Snyder is the TMI-1 Supervisor of Preventive Maintenance. Mr. Richard R. Harper is the TMI-1 Supervisor of Corrective Maintenance. Both have a long and varied career in the Navy's nuclear program and with Licensee's nuclear plants. Hukill, *et al.*, ff. Tr. 13,617, at 33, 35; Snyder, *et al.*, ff. Tr. 13,533.

162. Mr. Dennis Dyckman is the Supervisor of Shift Maintenance. He supervises the rotating sections of corrective maintenance personnel. Mr. Dyckman has only recently entered Licensee's employment. He has his degree in mechanical engineering and was qualified as a Navy submarine Nuclear Engineer Officer and Executive Officer. Mr. Dyckman testified extensively before the Board. We note favorably the fact that Licensee has recruited personnel with Mr. Dyckman's excellent qualifications for a position at the fourth level of the TMI-1 management. Hukill, *et al.*, ff. Tr. 13,617; Shovlin, *et al.*, ff. 13,533; *e.g.*, Tr. 3,838-3,927; 13,543-13,636.

C. Training

163. Training at TMI-1 has been of special interest to the Board and parties and was the subject of extensive testimony during the evidentiary hearing. *See generally*, Tr. 12,126-13,011, 13,108-227, 20,576-639, and 20,686-782 (Long, Knief, Newton, Ross, Gardner, Christensen, Kelly, Boger, Crocker, Allenspach, Aamodt). Licensee presented two panels of witnesses. The first was composed of employees: Dr. Robert Long, head of GPU Nuclear's training; Dr. Ronald Knief, head of training at TMI-1; Mr. Samuel Newton, in charge of Licensed Operator Training at TMI-1; and Mr. Michael Ross, Manager of Plant Operations at TMI-1. The second panel was comprised of three consultants: Dr. Eric Gardner, an educational psychologist with special expertise in educational and psychological measurement, psychometrics, test construction, and curriculum and program evaluations; Dr. Julien Christensen, an engineering psychologist and human factors specialist; and Mr. Frank Kelly, an independent consultant on training for nuclear power plant staffs. *See* Long, *et al.*, ff. Tr. 12,140; Gardner, Christensen and Kelly, all ff. Tr. 12,409; *see also* Licensee Ex. 33.

164. Training of TMI-1 personnel can be separated into two categories: training of personnel not licensed by the NRC and training of plant operators who are licensed. The focus of the Board, as well as the examination of witnesses at the hearing, was primarily on the training of licensed plant operators. With respect to unlicensed personnel, however, the Board finds that the Licensee has implemented an adequate training program complying with ANSI/ANS 3.1 (1978), which deals with training as well as selection and qualification of nuclear power plant personnel. The training of health physics personnel, one of the categories of unlicensed personnel, was the subject of special attention by the Board under CLI-80-5 issue (4) below. Hukill, *et al.*, ff. Tr. 11,617, at 3; Crocker and Allenspach, ff. Tr. 12,653, at 3-5. In addition, the Staff NTOL investigation concluded that the training of plant staff for TMI-1 met the

guidelines set forth in draft NUREG-0731, the Staff's guidelines for management structure and technical resources. Crocker and Allenspach, ff. Tr. 12,653, at 8, 9.

165. In this proceeding, the training (and testing) of licensed power plant operators was the subject of two contentions:

CEA Contention 13:

CEA contends that there is a specific need for the establishment of training for operators that addresses the problem of a 'mindset' that denies information indicative of serious reactor problems. [The balance of CEA Contention 13 is regarded by the Board as basis for the contention.]

Aamodt Contention 2:

It is contended that TMI-1 should not open until the performance of licensee technicians and management can be demonstrated to be upgraded as certified by an independent engineering firm. This upgrading should include 100% test performance of job description with provision for retraining and retest, or discharge of those who cannot consistently and confidently master all necessary information for safe conduct of their job description under all anticipated critical situations as well as routine situations.

166. CEA did not participate in the proceeding once the evidentiary hearings began and did not file proposed findings. However, "mindset", the subject of its contention, was a part of the litigation of training issues. We address this as part of our discussion below.

167. The NRC Staff addressed training in its SER and Supplements (*see, e.g.*, Staff Ex. 1, at C1-16, C6-5 to C6-7; Staff Ex. 4, at 10-11, 21, 40-41; Staff Ex. 13, at 2-5, 7) and in testimony by Mr. Bruce Boger, a reactor engineer with NRC's Operator Licensing Branch, and Messrs. Lawrence Crocker and Frederick Allenspach, management engineers in NRC's Licensee Qualifications Branch. *See* Boger (Aamodt Contention 2), ff. Tr. 12,770; Boger (CEA Contention 13), ff. Tr. 12,772; Crocker and Allenspach, ff. Tr. 12,653. An intervenor, Mrs. Marjorie Aamodt, testified on Licensee's licensed operator preparedness. *See* Aamodt, ff. Tr. 12,931.

168. Our approach to the large volume of evidence on this subject will consist first of a general review of Licensee's training program in this section and then a more detailed look at the specific concerns raised by Intervenor Aamodt in the next section. This section reviews Licensee's overall training organization and the principal persons involved in its management, each of whom testified in the proceeding. Next are descriptions of the training programs which Licensee has developed and is implementing. Following the general discussion of the programs, the

specific training programs for licensed operators and for unlicensed personnel (including Shift Technical Advisors) which Licensee has instituted since the accident at TMI-2 are reviewed. Finally, the NRC's views, as well as those of Licensee's consultants who have reviewed Licensee's training programs, are discussed.

169. The operation and maintenance of a nuclear facility such as Three Mile Island Unit 1 must be supported by an extensive and diversified training program, including formal classroom instruction as well as on-the-job training activities. Since the accident at TMI-2, Licensee has embarked upon a major training and retraining effort for both licensed and nonlicensed TMI-1 personnel. Training for operations staff is emphasized through continuous training, retraining, and testing programs, including increased simulator experience. In addition, Licensee has instituted comparable training programs for other staff, such as its maintenance, health physics and chemistry workers. With the exception of security personnel, all TMI-1 shift workers are scheduled on a six shift work cycle with one of the six shifts dedicated to training.¹⁷ Thus, these personnel spend one in every six weeks in training. To accomplish this effort the TMI-1 Training Department has increased its staff from 7 to 45, is diversifying its curriculum as well as the educational opportunities it makes available to TMI-1 personnel, and is upgrading its administrative capability in order to manage the TMI-1 training program more effectively. Long, *et al.*, ff. Tr. 12,140, at 3.

Training Organization

170. All training associated with GPU's nuclear facilities is coordinated by the Director-Training and Education of the Nuclear Assurance Division located in Parsippany. The activities of the Training Departments located at each of GPU Nuclear Corporation's facilities are coordinated and reviewed by the Corporate Training Department, which is the organization coordinating the development of common training needs of the three GPU Nuclear facilities, *e.g.*, radiological control training. In addition, the Corporate Training Department provides training to GPU Nuclear Corporation employees in specific areas where supplemental education is beneficial, *e.g.*, nuclear engineering training for Technical Functions employees with

¹⁷ However, as we discussed under ¶ 79, *supra*, Licensee committed to maintain minimum levels of control room staffing even if it means dropping to less than six shifts. Six shift operation is not an NRC requirement; the NRC requires only that the plant be adequately staffed. Tr. 20,773 (Crocker).

bachelor of science degrees in electrical or mechanical engineering. This department also coordinates the development of course plans in management and supervisory skills. These courses are implemented at TMI-1 by the TMI-1 Training Department. *Id.*, at 4-5.

171. The current Director-Training and Education, Dr. Robert L. Long, has extensive experience in the nuclear industry, as well as in university and industry nuclear engineering education programs. He holds a bachelor of science degree in electrical engineering and a master's and doctorate degrees in nuclear engineering. For thirteen years he was a member of the Chemical and Nuclear Engineering Department at the University of New Mexico and served as Department Chairman and Assistant Dean of the College of Engineering. He participated in many and varied research projects and industry consultancies while teaching. Long, *et al.*, ff. Tr. 12,140, at 7. He also has over fourteen years of research and commercial reactor operating experience, including eleven years as an AEC/NRC licensed SRO on a training reactor. *Id.*, at 7-8. Dr. Long joined GPU in 1978, and in February 1980, became Director-Training and Education. He is familiar with personnel involved in GPU's nuclear activities and understands the nature of and basis for the changes in the training organization since March of 1979. *Id.*, at 8-9.

172. The site Training Department is responsible for all classroom training of TMI-1 personnel. It is subdivided into four sections: Operator Training, Technician Training, Training and Educational Development, and Administrative Support, each administered by a supervisor. The Manager of Training directs the activities of the sections and provides liaison with the station organization and the Director of Training and Education. The overall training effort is coordinated between the Training Department and the functional operating organizations through lesson plan review and approval by and frequent meetings with the cognizant supervisory personnel. For example, the Manager of Training and the Supervisors of Operator Training, Technician Training, and Training and Educational Development meet once every six weeks with the TMI-1 Operations and Maintenance Director, the Managers of Plant Operations and of Plant Maintenance, the Director of TMI-1 Plant Engineering, and other designated individuals to discuss and coordinate the training to be conducted in the next six-week cycle. Additional more frequent meetings are conducted for specific working level considerations of operator, maintenance, radiological contamination, chemistry, and other training programs. *Id.*, at 9-13.

173. The current Manager of Training at TMI-1 is Dr. Ronald A. Knief, who joined the organization in June 1980. Dr. Knief has a bachelor of arts degree in physics, mathematics and economics, and a doctorate in nuclear engineering. His background includes teaching graduate level courses in general nuclear engineering, reactor theory, radiation detection and

measurement laboratory, reactor design, and reactor safety and safeguards. He was also an NRC-licensed senior reactor operator on a training reactor. He also has experience in non-university educational activities directed to a wide range of audiences. *Id.*, at 13-14.

174. Under the direction of the Supervisor of Operator Training, the TMI-1 reactor operator training program is being conducted and continuously upgraded to reflect higher company standards, as well as changes in industry standards. The Operator Training Section is divided into two groups, the licensed and non-licensed training curricula. Licensee intends that prior to restart all operators will have received a thorough education including the lessons learned from the TMI-2 accident and subsequent analyses. Moreover, Licensee intends its current and future operator training curricula to address the concerns raised by the Kemeny Commission, the Rogovin Inquiry, and other investigations with respect to necessary training and education-based criteria prerequisite to qualifying individuals to operate a commercial nuclear facility. This is clearly not a fixed target. Rather, Licensee's operator training program must provide operators all of the fundamentals necessary to operate the plant under normal and transient conditions. Licensee's goal is to establish and maintain a comprehensive basic curriculum having sufficient flexibility to allow incorporation of new material on short notice. *Id.*, at 16.

175. The Supervisor of Operator Training at TMI-1 is Mr. Samuel L. Newton, who joined Licensee in April 1980. Mr. Newton has a bachelor of science from the United States Naval Academy and a master's degree from the Naval Post Graduate School. In his twelve years of nuclear experience in the Navy's program he qualified in positions roughly comparable to that of an SRO or a supervisor of operations. Mr. Newton's responsibility is to develop and institute effective auxiliary operator, RO, and SRO training programs at TMI-1. Mr. Newton reviews the course outlines developed by the thirteen instructors under his supervision to coordinate the operator-related training activities at TMI-1. He and/or his Group Supervisors meet regularly with the Manager of Plant Operations and the shift supervisors. *Id.*, at 17-18.

176. Training of licensed control room operators and senior reactor operators (the latter including shift foremen and shift supervisors), as well as the non-licensed auxiliary operators, is continuous; that is, initial training is always followed by requalification training or by training for new positions within the shift operating staff. This is in contrast to qualification programs established for other professions where it is possible to study once, receive a degree once, and/or pass tests once to permanently qualify for the job. The operator's education continues as long as he holds a position on the shift operating staff. This is true for both licensed and non-licensed (*i.e.*, auxiliary) operators. *Id.*, at 18.

177. Auxiliary operators are the most junior members of the operating staff. There are approximately 42 auxiliary operators employed at TMI-1. These individuals are divided into three levels, C, B, and A, based upon seniority, associated training, and level of responsibility. In order to be admitted into the auxiliary operator training program, an individual must have graduated from high school, or hold an equivalency certificate, and have had a course in algebra. Prospective auxiliary operators are interviewed by the Manager of Plant Operations, who considers their maturity and their potential for advancement through the shift operating chain of responsibility. During his first 90 days as an auxiliary operator, an individual is on "probation" and can be removed from the program by the Manager of Plant Operations for unsatisfactory performance. *Id.*, at 19.

178. Licensee's auxiliary operator training program includes approximately one year of classroom instruction followed by approximately one year of on shift on-the-job training and experience. The trainee must satisfactorily complete the entire two year program prior to classification as a fully qualified Auxiliary Operator "A". The initial (classroom) phase of the program is operated eight hours per day, five days each week, during which the Auxiliary Operator "C" attends lectures, receives assignments, has specific study periods and is periodically tested in a large number of subject areas: nuclear power orientation, basic mathematics, basic nuclear concepts, reactor physics, fundamentals of heat transfer and fluid dynamics, mechanical equipment construction/operation, radiation protection, chemistry and water/waste treatment, electrical fundamentals, instrumentation and operational analysis, procedures, fire brigade training, plant safety, and the primary and secondary systems of the reactor. Examinations are given to these operators at the end of each topical section. Individuals who fail (score of less than 70%) are reexamined within a week. Those individuals who fail two final examinations on the same topical section are dropped from the program and returned to their prior job. In addition, auxiliary operators in training take a comprehensive examination at the end of the classroom training program. The minimum passing score for this examination is also 70%. A retest can be taken up to two weeks later. An individual failing to pass the examination a second time is interviewed by the Supervisor of Operator Training to determine the appropriate course of action. *Id.*, at 21-22.

179. Auxiliary operators are trained on a specific reactor, *i.e.*, TMI-1. Following the classroom training program, auxiliary operators work on shift as trainees for approximately twelve months. Because on-the-job training by definition occurs within the facility, it is administered by the TMI-1 Operations Department; however, the shift supervisors and shift foremen overseeing this program utilize check-off/sign-off sheets prepared

by the Operator Training staff. These check-off assignments exercise and test the auxiliary operator in systems, procedures, and practical factors associated with the plant. *Id.*, at 22-23.

180. During the final four weeks of on-the-job training, oral examinations are conducted by Operations personnel and written examinations are prepared and administered by the Training Department. The oral examinations must be satisfactorily passed on the basis of materials prepared by Training. An auxiliary operator receiving an "unsatisfactory" can retake the examination once. Failure to receive "satisfactory" on the second attempt results in dismissal from the auxiliary operator ranks. The written examination covers the plant systems and procedures, as well as reexamination in fundamentals of heat transfer and fluid dynamics, mechanical equipment construction/operation, radiation protection, and chemistry and water/waste treatment. The passing grade for the written examination is 70%. Like the oral examination, the written examination can be retaken once; an auxiliary operator failing a second time is dropped from the program. *Id.*, at 23.

181. When auxiliary operators complete their initial training, they participate in one week of retraining every six weeks for the duration of their tenure as auxiliary operators. The retraining program consists of reviews of important material taught in the initial program as well as lectures in subject matter recently introduced in the auxiliary operator training program and new developments in the industry with which auxiliary operators should be familiar. *Id.*, at 24.

182. To become a reactor operator an individual must meet certain educational requirements, participate in an extensive training program, and pass the NRC-administered reactor operator license examinations designed for the TMI-1 facility. Licensee's reactor operator training program has changed significantly since the accident at TMI-2, in response to new corporate policy, lessons learned from the accident, anticipated NRC requirements and Institute of Nuclear Power Operations (INPO) guidelines. Elements of the program include the initial or replacement reactor operator training program; the Operator Accelerated Retraining Program (OARP) (discussed in more detail at ¶¶ 196 to 207, *infra*), a one-time program designed and implemented for the unique circumstances of the long shutdown of the TMI-1 unit; the reactor operator requalification program; the senior reactor operator training program; and the senior reactor operator requalification program. *Id.*, at 25.

183. Under Licensee's licensed operator program, a candidate control room operator (RO) will take a nine month training program consisting of four phases. Phase one will consist of six weeks of classroom training mainly in primary, secondary and support systems. During this phase weekly written topical examinations will be given, with a passing grade of

70%. For all failures, reexaminations will be given within two weeks. Failure of the second written examination will require the Manager of Plant Operations and the Supervisor of Operator Training to evaluate the student's performance and decide on the corrective action to be taken. *Id.*, at 27.

184. Phase two is twelve weeks of on-the-job training consisting of mandatory completions by task sheets, oral checkouts by three levels of Operations Department personnel, and spot checking of student progress through oral questioning by Training Department licensed instructors. Failure of the oral checkout at the third level requires the student's shift supervisor to review his performance and recommend corrective action to the Manager of Plant Operations. Using the same criteria as the classroom examinations, written examinations are administered every four weeks with a comprehensive written examination at the end of this phase covering all areas from phases one and two. *Id.*, at 28.

185. Phase three of the licensed operator program consists of six weeks of classroom instruction focusing on reactor theory, heat transfer, fluid flow, and thermodynamics, integrated control system, transient analysis, safety analysis, mitigation of consequences of accidents resulting in core damage, normal and emergency procedures, and technical specifications. Weekly written examinations are administered as described in phase one. *Id.*

186. Phase four involves further on-the-job training administered as in phase two, concentrating on those areas presented during the second classroom training period. This period also includes a minimum of three weeks of simulator training during which the startup certification examination would be administered. *Id.*

187. At the end of the nine month training period, the candidates take written and oral examinations administered by Licensee. These examinations, modeled after the NRC-administered examinations, are intended to prepare the candidate for and to verify that the candidate is ready to take the NRC license examination. Successful completion of the mock examinations requires an overall pass rate of 80%, with no grade less than 70% on each individual topic, which are the same standards as for the NRC examinations. Upon completion of the mock examinations, the student's training files are sent to the Operations and Maintenance Director of TMI-1 to approve NRC examinations for those who passed and to decide on corrective action for those who did not pass. Records of those approved are then transmitted to the Vice President of TMI-1 for final approval and transmission of an examination request to the NRC. Upon successful completion of the NRC examination, candidates receive their licenses and are assigned to shifts as control room operators. *Id.*, at 31-32.

188. In accordance with corporate policies and newly issued criteria used by the NRC staff in evaluating reactor operator training and licensing, Licensee has added specific technical material to its candidate ROs and requalification training programs. Candidate ROs and licensed operators receive training in heat transfer, fluid flow, and thermodynamics; use of installed plant systems to control or mitigate an accident in which the core is severely damaged; and particular topical training in reactor and plant transients. To assist in accomplishing the latter two training objectives, Licensee's Technical Functions Division has developed a transient analysis method which plots primary and secondary system pressures and temperatures and compares the multiple routes for various normal and abnormal conditions in the reactor. These computer plots aid the operators in identifying significant transient events by observing the values and trends of key parameters. This method assists in demonstrating how transients affect key parameters, and how key parameters should respond to automatic or operator-initiated corrective actions. Licensee has under development a computer-assisted instructional program using this transient analysis method which will become part of the overall simulation training program. In addition, Licensee has contracted with B&W for B&W's Abnormal Transient Operator Guidelines manual, a fault tree diagnostic tool which aids in training operators in accident conditions and analysis. *Id.*, at 32-33.

189. In addition to the initial candidate RO qualification training program, Licensee's TMI-1 Training organization conducts an ongoing RO requalification program. There are six shifts of ROs, as well as other shift operating staff, with three shifts required to cover each 24-hour period. On any given day there are three shifts that are not manning the control room. These three shifts are divided into one off-duty shift, one relief duty shift, and one shift participating in the retraining program. In this manner, each shift spends one out of every six weeks in training. *Id.*, at 33-34.

190. The RO requalification program is designed to keep operators aware of developments in nuclear technology that have occurred since they were originally trained; to review important subject matter in order to maintain the operator's level of knowledge; and to meet specific requirements established by the NRC for requalification and license renewal of reactor operators, including those in 10 CFR Part 55, Appendix A, Requalification Programs for Licensed Operators of Production and Utilization Facilities. *Id.*, at 34.

191. The RO requalification program consists of classroom instruction; 27 specified control manipulations, six of which are performed annually and 21 of which must be performed once every two years; and annual Licensee-administered written and oral examinations, with minimum pass rates of 80% overall and at least 70% on each section of the examinations.

Although NRC regulations and Licensee Administrative Procedure 1006 specify a minimum of 60 hours of classroom requalification training each year, the TMI-1 one-in-six-week shift cycle actually provides in excess of 200 classroom training hours per year. *Id.*

192. The classroom instruction portion of the RO requalification program is administered by the Training Department. Topics included are principles of reactor operations, principles of thermodynamics, heat transfer, and fluid mechanics; features of facility design and unit modifications; general operating characteristics of TMI-1; instrumentation and control; safety and emergency systems; normal, abnormal and emergency operating procedures review; radiation control and safety; technical specifications and safety analysis; major operational evolutions such as refueling; review of regulatory requirements and procedures; mitigation of accidents involving a degraded core; and, industrial experience reviews. Long, *et al.*, ff. Tr. 12,140, at 34-35. Although there are certain constant features of the requalification program, such as reviewing reactor theory and normal, abnormal and emergency operating procedures, the requalification program also provides the mechanism for introduction of new information into the curriculum. *Id.*, at 34-35.

193. Licensee verifies effectiveness of its requalification lectures by administering periodic evaluation quizzes. Subject matter not satisfactorily understood by individual operators is reviewed with them. These makeup sessions are concluded only when an oral or written evaluation is satisfactorily completed.

194. The reactivity control manipulations which operators must perform are undertaken while on shift, *e.g.*, the startup manipulations, or during their annual week at the B&W simulator, *e.g.*, various loss-of-coolant accidents. On-the-job manipulations are conducted under the supervision of a senior member of the shift, either the shift foreman or shift supervisor. At the simulator, the abnormal or emergency control manipulations are observed and evaluated by a member of the B&W Training staff. *Id.*, at 36.

195. The annual examinations administered to licensed ROs include a written and oral evaluation. Results of the examinations are used to identify specific areas in which retraining is necessary to upgrade an individual's knowledge in a particular area. An individual who receives less than 80% on any section of the examination attends a requalification lecture and takes another examination on that subject matter. An individual receiving a grade of less than 80% overall or less than 70% on any single section of the annual examination is relieved of his licensed duties and is placed in an accelerated requalification program. Upon successfully passing a second written and oral examination and receiving certification of a satisfactory rating by the Vice President of TMI-1, the individual is

returned to his licensed duties. Failure to pass the examination a second time prevents the individual from working as a licensed operator. *Id.*, at 36.

Operator Accelerated Retraining Program (OARP)

196. Pursuant to the Commission's August 9, 1979 Order, section II.1(e), the Licensee was ordered to:

- (e) Augment the retraining of all Reactor Operators and Senior Reactor Operators assigned to the control room including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident. All operators will also receive training at the B&W simulator on the TMI-2 accident and the licensee will conduct a 100 percent reexamination of all operators in these areas. NRC will administer complete examinations to all licensed personnel in accordance with 10 CFR 55.20-23.

197. To satisfy these requirements for operator retraining and to enhance operator performance further, Licensee conducted an Operator Accelerated Retraining Program (OARP). *See* OARP Report, Licensee Ex. 27. Objectives of the OARP were to improve operator performance during small break loss of coolant accidents; assure capability of operators to recognize and respond to situations involving inadequate core cooling; generally improve operator performance during transients, including events that are exacerbated initially by inappropriate operator action; give operators an in-depth understanding of the TMI-2 accident and "lessons learned"; assure that operators are knowledgeable of operating procedures and actions necessary upon initiation of the engineering safeguards features; assure that operators understand the manometer effects of water levels in the reactor coolant system under different pressure and temperature conditions; assure understanding of the significance of simultaneous blocking of both auxiliary feedwater trains; assure understanding of the NRC prompt notification requirements; provide operators with an in-depth understanding of the methods required to establish and maintain natural circulation; assure operators are knowledgeable of both short and long-term plant system modifications; provide operators with a review of major plant systems; provide specialized training on operations and procedural guidance requirements; fully requalify operators through the administration of Licensee and NRC-administered written and oral examinations; review with operators major administrative, normal, abnormal, and emergency procedures; and provide to all licensed Unit 1 operators exten-

sive experience on the B&W simulator, educating them on transients which occurred during the TMI-2 accident, as well as other abnormal reactor conditions. Long, *et al.*, ff. Tr. 12,140, at 38, 39. See also Staff Ex. 1, at C1-16 and C6-5 - C6-7; Kelly, Gardner, and Christensen, all ff. Tr. 12,409; Licensee Ex. 27.

198. The OARP content and length was developed by Licensee with assistance from NUS Corporation. To accomplish the augmented retraining required by the OARP, the station training department has been increased in size from six to eleven positions with authorization to fill eighteen positions. In addition, instruction provided by the TMI training department was supplemented with that provided by personnel drawn from the TMI staff, GPU Nuclear, Babcock & Wilcox, Gilbert Associates, Inc. General Physics, and NUS Corporation. Staff Ex. 1, at C6-6. The OARP was presented from August 1979 through March 1980 to all TMI-1 licensed control room operators (ROs), senior reactor operators (SROs), and the shift technical advisors (STAs) in training. The program consisted of approximately 60 individual lessons or practice sessions. Teaching techniques included classroom presentations, TMI-1 control room training sessions, and simulator training sessions at the B&W simulator in Lynchburg, Virginia. Shifts participated as a group; consequently, Licensee was able to focus upon both the activities of the operators, such as an individual manipulating the reactor controls, and the aspects of operations which involve team effort and coordination. The program was divided into seven subject area modules (including one week at the simulator), each consisting of four to five 8-hour days of training. Subject matter included the traditional areas of review, such as plant systems and radiation monitoring, but particular emphasis was given to accident and safety analysis. Long, *et al.*, ff. Tr. 12,140, at 39-40.

199. At the end of the program, OARP participants took written and oral examinations designed and administered by PQS Corporation, an independent consulting firm which provides reactor training program reviews and audits. Individuals who did not score above 70% on any section of the examinations or who failed to achieve an overall score of 80% received remedial requalification training. *Id.*, at 40. Mr. Kelly of PQS described his testing of the OARP graduates and concluded that, overall, the TMI-1 licensed ROs and SROs demonstrate a high degree of knowledge of how to safely and effectively operate the facility. He testified that based on his knowledge of, and experience with, licensed operators throughout the industry, the TMI-1 operators collectively were trained and evaluated to a much greater extent than what he judges to be the industry norm. Kelly, ff. Tr. 12,409, at 10.

200. An additional one week training session on Decision Analysis, developed by Management Analysis Company of San Diego, California, was given to all SROs and STAs. Decision Analysis training helps individuals to handle complex situations for which written procedures do not exist; to develop a technique to cope with uncertainty, stress, and conflicting information and to make decisions in the face of such circumstances; and to make "good" decisions, *i.e.*, with full consideration of alternatives. Decision Analysis training helps develop in control room supervisory personnel (SROs and STAs) the tools and sensitivity to make the right decisions under highly adverse circumstances, and to do so in a systematic and thoughtful manner. Long, *et al.*, ff. Tr. 12,140, at 40, 41.

201. To assess the effectiveness of the OARP, Licensee retained five experts to conduct a review analogous to accreditation reviews carried out by professional organizations, such as the Accreditation Board for Engineering and Technology which accredits university engineering degree programs. These individuals were Dr. Julien M. Christensen, Director of the Human Factor Division, Stevens, Scheidler, Stevens and Vossler, Inc., Dayton, Ohio, representing human factors engineering; Dr. Eric F. Gardner, Professor of Psychology and Education of Syracuse University, Syracuse, New York, representing educational psychology; Dr. William R. Kimel, Dean of the College of Engineering at the University of Missouri, Columbia, Missouri, representing nuclear engineering education; Mr. Richard J. Marzec, Manager of Technical Training for Duke Power Company, Charlotte, North Carolina, representing nuclear power plant operator training; and Dr. Robert E. Uhrig, Vice President, Advanced Systems & Technology for Florida Power & Light Company, Miami, Florida, representing nuclear power generation. *Id.*, at 41-42. These five persons, who comprised the OARP Review Committee, reviewed the procedures generally employed for accreditation of engineering programs; attended OARP classes; evaluated the proper role of simulators in an operator training program; and evaluated the OARP in light of NRC requirements and "lessons learned" from the TMI-2 accident. *Id.*, at 41-42; Licensee Ex. 27.

202. Dr. Gardner of the Review Committee concluded that the OARP helped establish the following necessary response sets in operators: (1) immediate reaction by the nuclear reactor operator according to operating procedures when the stimuli present the usual and familiar situations; (2) knowledge of prior transients and the appropriate response in the event similar situations should arise; (3) adequate knowledge of the reactor and its theory so that appropriate data will be collected, analyzed and a conclusion reached for unusual situations which have not occurred before;

and (4) provision for the possibility of irrational behavior should there be a psychological breakdown by the individual reactor operator. Gardner, ff. Tr. 12,409, at 11-14.

203. Numerous comments and suggestions were made by the OARP Review Committee in its Report. See Licensee Ex. 27, at 135-49. Upon completing its review, however, the Committee stated:

The conclusion of the Committee was that the Operator Accelerated Retraining Program carried out by Metropolitan Edison was a high-quality, well-executed program, having many features which should be incorporated into the regular Operator Retraining Program. The Committee further believes that personnel who demonstrate satisfactory performance in the OARP should perform well on the NRC Reactor Operator and Senior Reactor Operator Examinations.

Licensee Ex. 27, at 3.

204. The Staff reviewed the OARP and concluded that the operator training required as a result of the Commission's Order is provided, including training in areas beyond that required by the Order. Staff Ex. 1, at C6-6. These additional areas, required by the Staff, include training in heat transfer, fluid dynamics, plant transient response, and plant safety analysis. *Id.*; Boger, ff. Tr. 12,770, at 2-4. In fact this training exceeds current NRC requalification training requirements. Staff Ex. 1, at C6-6. In its later management supplement to the initial evaluation report (Staff Ex. 4), the Staff noted that Licensee's Revised License Operator Qualification and Requalification Training Program had been submitted but not yet reviewed by the Staff against the criteria set forth by the Staff in its March 28, 1980 letter from H. R. Denton to the Licensee; however, approval of the program is not a prerequisite to restart of TMI-1 since each of the licensed personnel for TMI-1 will be required to successfully pass an NRC examination prior to resuming his licensed duties at an operating plant. Staff Ex. 4, at 21. The Staff concluded that successful passing of the NRC examination, coupled with the OARP, and previous TMI-1 operator training programs, should ensure enhanced operator performance and the safe and effective operation of TMI-1.¹⁸ Staff Ex. 1, at C6-7. In addition, as a prerequisite to licensing candidates for RO and

¹⁸ As we have noted in ¶¶ 43-45, *supra*, among other things, the validity of the NRC examination is called into question by the lack of safeguards and integrity in the testing process indicated in the preliminary Stello memorandum and OIA report on the investigation of cheating on the written examinations taken by Licensee's personnel. Accordingly, this finding is an example of ones which will be reconsidered by the Board after further information on the investigation of cheating is available.

SRO licenses are required to pass a special audit examination (the so-called "Category T" examination) developed by the Licensee or its agent covering lessons learned from the TMI-2 accident including transient effects, operator response, and related procedure/design changes. Staff Ex. 1, at C1-16, C6-6. *See also* Licensee Ex. 27, at 66-67.

205. As detailed below, Licensee has committed to require all operators to pass this special examination with a score of 90% or better prior to their receipt of a license, even if they have passed the NRC-administered operator license examination.

206. Mr. Boger testified that the NRC examinations are designed to give the Staff reasonable assurance that the operator candidates can safely and competently operate the facility,¹⁹ and that they are structured around those items that the Staff considers important to safety as enumerated in 10 CFR 55.20 through 55.23. Boger, ff. Tr. 12,770, at 2. In addition, Mr. Boger stated that the NRC examinations have been modified since the TMI-2 accident to incorporate subject matter contained in the NRC Action Plan, NUREG-0660, item I.A.3, as delineated in the Staff's March 28, 1980 letter to the Licensee, including the new category dealing with thermodynamics, heat transfer, and fluid flow. *Id.*, at 3. In addition, the Staff imposed time limits for completion of the examination and instituted oral examinations for senior operators. The Staff increased the passing grade criteria from 70% to 80% overall, and required a grade of at least 70% in each category. *Id.*, at 3.

207. In Supplement 2 to the SER, the Staff concluded that Licensee had made adequate plans for training of licensed operators for the long term, an item earlier identified by the Staff (*see* Staff Ex. 4, at 11 and 38) as requiring further review. Staff Ex. 13, at 5.

Training of Non-Licensed Personnel

208. Licensee has expanded its training organization to include, under a Supervisor, a Technician Training Section, and has embarked upon a number of new formal programs for training and retraining TMI-1 technicians in a variety of fields. In addition to the Supervisor of Technician Training, eleven instructors and four group supervisors are employed by Licensee in Technician Training, each with a minimum of three years' experience in his or her field of instruction or a closely related field. Under the overall direction of the Supervisor of Technician Training and a group supervisor, the instructors within the training section teach courses in the

¹⁹*See* Note 18, *Id.*

areas of maintenance, radiological controls, chemistry, security, emergency plan implementation, and general employee training. Long, *et al.*, ff. Tr. 12,140, at 43-44.

209. The Maintenance Technician Training Program is planned around a six shift schedule and provides for up to 320 hours of training and retraining each year. The program is designed to provide a progressive update for the technician by review of basic concepts and skills and to provide instruction in plant systems and advanced specific systems, components, and concepts. During the first section or basic phase of the Maintenance Training Program, all maintenance personnel are given an appropriate self-study course consisting of fundamental lessons on maintenance tools as well as the major principles involved in mechanical, electrical, instrumentation and control, and general maintenance work. Quizzes are given in each area of the subject matter as it is completed by the trainee; if weak or unsatisfactory performance is exhibited, the area is repeated. The second part of the first year of the Maintenance Training Program is subdivided into systems training (a functional explanation of selected primary and secondary systems) and constituent theory (training in their respective disciplines, *e.g.*, electrical maintenance). Phase three of the Maintenance Training Program consists of a review of basic skills and the use of relevant instruments, *e.g.*, those needed for setting breakers. Finally, in subsequent years of the program, maintenance personnel receive advanced instruction in systems, components and concepts relating to their discipline and level of accomplishment. *Id.*, at 44-45.

210. The Licensee has instituted a comprehensive training program for Radiological Controls technicians and supervisors. Heward, *et al.*, ff. Tr. 16,292, at 6. This training program is directed by the Technician Training Section of the TMI-1 Training Department which is part of the Nuclear Assurance Division of GPU Nuclear. Long, *et al.*, ff. Tr. 12,140 at 4, 9, 45. It consists of two parts: the Initial Technician Training Program and the Technician Training/Retraining Program (Cyclic Program). *Id.*, at 45. At a minimum, Technician Training ensures that the radiological control training programs for TMI-1 meet requirements specified in ANSI N/8.1, §5.5 (1971). *Id.*; *see also* Heward, *et al.*, ff. Tr. 16,292, at 6-7, and Attachment 1, at 10.1 to 11.0; Wegner, ff. Tr. 13,284, at 24; Tr. 16,317-18 (Potts). The Initial Technician Training Program consists of approximately eight weeks of training which every new radiological control technician must undergo prior to assuming responsibility for radiation control work at TMI-1. Long, *et al.*, ff. Tr. 12,140, at 45-46.

211. Once a technician is assigned on shift at TMI-1, he participates in the Cyclic Program which is conducted continuously over a minimum of a 42 week period, with each shift rotating through the program for one week every six weeks. *Id.*, at 46; Heward, *et al.*, ff. Tr. 16,292, at 6; Tr. 16,369

(Knief). The classroom program consists of both practical and theoretical aspects of radiation protection. Heward, *et al.*, ff. Tr. 16,292, at 6. It was developed to maintain existing qualifications as well as to update the technicians' knowledge. Tr. 16,370 (Knief).

212. The Chemistry Training Program taught by the Technician Program Training Section also consists of an Initial Technical Program and a Cyclic Training/Retraining Program. Prior to receiving a shift assignment, the newly hired technician receives nine weeks of classroom lectures followed by three weeks in the laboratory. Included in the initial chemistry training program is a review of basic chemistry principles, laboratory procedures, and TMI-1 water chemistry specifications, including an explanation of why certain chemicals are necessary while others are not allowed into the reactor primary and secondary systems. Like the other cyclic programs, the chemistry retraining program reviews important facts and principles, with emphasis on changes in relevant plant procedures. A progressive training program is designed to maintain the technical and professional capabilities of the chemistry technicians. Long, *et al.*, ff. Tr. 12,140, at 46-47.

213. In addition the Security Training Program, formerly taught by the Security Department at TMI, is now under the direction of the Technician Training organization.

214. Basic General Employee Training (GET) consists of a four hour course for employees as well as contractors working at TMI-1. The course covers procedures in the event of a site emergency, basics of health physics, and basics of radiation, as specified in ANSI/ANS 18.1 (1971). Every person taking GET must receive at least a 70% on the written examination administered by Licensee in order to be "badged" to work at TMI-1. *Id.*, at 47-48; *see also* Heward, *et al.*, ff. Tr. 16,292, Attachment 1, at 10.0.

215. In addition to basic GET, individuals requiring access into radiological controlled areas receive eight additional hours of training. This supplemental GET consists of a much more detailed review of radiation protection principles and procedures; four hours of practical factors training, *e.g.*, procedures to follow in donning and removing the radiation protection clothing required in certain area; and methods for minimizing radwaste. Written and practical examinations are also given on this portion of the GET program. An individual is not allowed to work in a protected area until he or she scores at least 70% on this examination. Long, *et al.*, ff. Tr. 12,140, at 48; *see also* Heward, *et al.*, ff. Tr. 16,292, Attachment 1, at 10.0.

216. The annual retraining GET program consists of a review of emergency-related procedures, followed by a written test or tests similar to those originally taken. If an individual does not receive the required 70% score on these examinations, the entire applicable portion of the GET program must be repeated. Long, *et al.*, ff. Tr. 12,140, at 48.

217. In conjunction with GET, Technician Training conducts special sessions on fire brigade procedures and duties for personnel with fire brigade responsibilities, taught by a certified Pennsylvania fire instructor. *Id.*

218. Radwaste personnel receive additional training, taught by the Technician Training section, on shipping and receiving radwaste in accordance with the criteria set forth in IE Bulletin 79-19. *Id.*, at 48-49.

219. The TMI-1 Training and Educational Development Section (*Id.* at 49), an administrative and service group which provides TMI-1 personnel resources for additional technical and management training, is responsible for Shift Technical Advisor (STA) training and ensures the use of sound educational principles throughout the Training Department (both in material development and lesson presentation). *Id.*, at 49-50. Training and Educational Development encourages TMI-1 professionals such as site engineers to enhance their capabilities, both technically and as potential management personnel. *Id.*, at 50. To encourage on-site professionals to complete degree programs (regardless of whether the NRC adopts degrees as a recommendation or a requirement), the TMI-1 Training and Educational Development Section is actively seeking college level educational options for TMI-1 employees. *Id.* To date Training and Educational Development has been successful in contracting for a basic nuclear engineering course and a graduate level reactor shielding course at the Capitol campus, attended respectively by 35 and 15 TMI staff members including operators (Auxiliary Operators, ROs and SROs). *Id.*, at 50-51. Also, evening courses have been instituted at TMI, taught by faculty members from Harrisburg Area Community College, *e.g.*, a course in the principles of management. *Id.*, at 51.

220. The second area for which Training and Educational Development has major responsibility is in the development and implementation of the STA Training Program. *Id.*, at 51. Part One of the STA Training Program covers TMI-1 reactor specific material. *Id.*, at 52. As in the training programs developed for the auxiliary and the licensed operators, detailed attention is paid to individual systems on both the primary and secondary sides of the plant. *Id.*, at 52-53. Training covers auxiliary systems, engineered safeguards, instrumentation and control, electrical systems, procedures, documentation (including Technical Specifications, the QA Plan and the Emergency Plan), accident analysis, unusual event recognition and responses, B&W simulator training, nuclear power fun-

damentals, and health physics. *Id.*, at 53. In addition, STAs participated with the operating shifts in modules two through six of OARP (they reviewed by videotape OARP module one), and in Decision Analysis and related command training. *Id.*

221. STA courses are taught by an instructor dedicated solely to the STA Training Program, as well as by individuals with designated expertise, e.g., health physics, emergency planning implementation, simulator training. Also, self-study is employed for certain portions of the program, e.g., systems, procedures. *Id.*

222. By January 1, 1982, TMI-1 STAs will have completed Part Two of the STA Training Program, consisting of college level courses in mathematics, chemistry, physics and reactor physics, thermodynamics and heat transfer, control systems and electrical fundamentals, fluids, communications, and materials. Licensee intends to conduct a thorough ongoing requalification program after the STAs complete the initial two years of training. *Id.*

223. Training and Educational Development is also responsible for ensuring that sound educational principles are used in the development and presentation of TMI-1 training material. All permanent TMI-1 instructors are required to attend a week-long instructor development program, the primary goal of which is to provide the instructor with a foundation in training design, presentation, and evaluation to enable him/her to conduct effective employee training consistent with program goals and objectives. This program is conducted in a workshop format. A modified version of this course is planned for annual retraining. *Id.*, at 54.

224. In Supplements 2 and 3 to its Safety Evaluation Report (Staff Exs. 13 and 14), Staff addressed training of unlicensed personnel which had not been complete at the time the initial SER was issued. *See* Staff Ex. 1, at 10, 24, 38. Staff reported that based on its review of the Training Department and the development of acceptable procedures for training unlicensed personnel, Licensee's unlicensed personnel training was acceptable and those persons (non-licensed) whose activities could have an impact on safe plant operation will be well qualified; the Staff also reported as acceptable Licensee's STA training program. Staff Ex. 13, at 4; Staff Ex. 14, at 46-47.

Independent Review of Licensee's Training Programs

225. Three independent consultants who have been involved in reviewing Licensee's training programs testified on the adequacy of Licensee training. *See* Gardner, Christensen and Kelly, all ff. Tr. 12,409. Their involvement with TMI-1 and their testimony were directed at licensed operator training. *Id.*

226. Mr. Frank Kelly, President of PQS Corporation, is a consultant on power plant staffing and training, with over 26 years in the nuclear industry, where he has been engaged in the startup and operation of nuclear power plants, the administration of nuclear power plant training programs and the evaluation of nuclear power plant operator proficiency. Mr. Kelly is a registered professional nuclear engineer with experience including Chief of the USAEC Operating Licensing Branch and Manager of Westinghouse Electric Corporation nuclear training programs. Kelly, ff. Tr. 12,409, Appendix A. PQS was requested by Licensee in April 1979 to review the operator training and requalification programs at Three Mile Island. Based upon this review, PQS concluded that Met Ed's operator training and requalification programs were representative of the industry, but could be improved in certain respects, such as (1) an expansion of the training organization, (2) certain modifications to the requalification program, (3) increased usage of the B&W simulator, (4) modification of the scope of all of the operator training programs, and (5) additional evaluation examinations prior to NRC licensing examinations. All of these recommendations have been incorporated into the overall TMI training programs. *Id.*, at 3.

227. Following initiation of the OARP, PQS periodically monitored and audited the program's progress. *Id.*, at 4. PQS's view was that the OARP was a comprehensive program which should prepare individuals to successfully complete NRC's examinations and be well qualified operators. *Id.*, at 6.

228. In December 1979, PQS was assigned by Licensee to prepare and administer complete written and oral examinations to the licensed reactor operators and senior reactor operators at TMI Unit 1. *Id.* Those examinations were to exercise the operators with an examination of the type given by NRC to operator candidates, in order to prepare the operators for such an examination and to provide Licensee with a comprehensive examination of its licensed operators and candidates by an independent testing entity. *Id.* In April 1980, PQS administered written and oral audit RO and SRO examinations. *Id.*, at 6-7. The examinations were developed based on PQS's knowledge and experience with NRC operator examinations, had a format similar to the NRC examination, and covered all subject areas which NRC examinations of operators would be expected to encompass. *Id.*, at 7. While broad in scope, they required detailed knowledge in each subject area. *Id.*, at 7, and Attachments B and C. The PQS examination for ROs and SROs also included an oral portion similar to examinations administered by NRC operator license examiners: one-to-one orals, four to five hours in duration. *Id.*, at 9. During the examination, each candidate was required to tour the TMI-1 plant and

control room, exhibit familiarity with the equipment, and explain how and why he would conduct (or in the case of the SRO, direct) routine, abnormal and emergency operations. *Id.*, at 9-10.

229. In addition to the RO and SRO examinations, PQS administered a separate written test covering the TMI-2 event and principles of the small break LOCA concept, the so-called "Category T" examinations, a special examination required by NRC of all B&W operators following the TMI-2 accident, covering lessons learned from that event. It constitutes part of the response to the August 9, 1979 Commission Order in item II.1(e). A grade of 90% was set as the passing score. PQS recommended that those not passing be given retraining and a written examination. Mr. Kelly's opinion was that overall the TMI-1 licensed ROs and SROs demonstrate a high degree of knowledge of how to operate the Unit safely and effectively. *Id.*, at 10. The Staff will require, prior to granting licenses to individual operators, that each of them pass the Category T examination. Mr. Newton testified for Licensee that 32 out of the 36 individuals who recently took the NRC licensee written examinations had already passed this examination administered by PQS or by Licensee's training personnel. Tr. 20,597 (Newton); see Newton, ff. Tr. 20,580. See also Tr. 20,688-91, 20,751-54 (Crocker).

230. As we discuss in greater detail below under our section on Conditions and Commitments, the Category T testing issue has been resolved to our satisfaction. Licensee commits to examine, prior to restart, on the subject matter of the Category T examinations, the four remaining individuals of the 36 whom Licensee has certified for NRC licensed operator examination prior to restart of TMI-1. The NRC will not issue licenses to these individuals until each has passed with a 90% grade a Licensee-administered Category T examination which NRC must evaluate and determine to be acceptable for this purpose. Further, all previous Category T examinations will be evaluated by the NRC prior to restart. The determination by NRC that any Category T examination utilized by Licensee was unacceptable will require that another examination, acceptable to NRC, be constructed and administered to all Licensee's operators who had passed the unacceptable examination. Licensee Ex. 56, at 2.

231. The statistical results, *i.e.*, numbers of examinees and their passes or failures on the PQS-administered examinations, as well as reexamination criteria and the statistical results of further examinations conducted by Licensee personnel and by a second outside consultant in April 1981, consumed many hours of hearing time. See, generally Tr. 12,159-69 (Long, *et al.*); Tr. 12,607-16 (Kelly, Gardner, Long); Tr. 12,696-711 (Kelly); Tr. 13,212-18 (Long); Tr. 20,576-639 (Newton); and Tr. 20,717-23 (Crocker). The testimony at times was confused and appeared inconsistent, although not materially so. Compare, *e.g.*, Tr. 13,213-18

(Long) with Newton, ff. Tr. 20,580 and Tr. 20,613 (Newton). As a final step to provide an accurate record, at the Board's recommendation Licensee presented Mr. Newton, who is in charge of TMI-1 licensed operator training, to provide detailed statistics. See Tr. 20,576-639. Mr. Newton testified that 36 operators were certified to the NRC and took the NRC examination in April 1981; twenty were SROs (only 13 of whom would normally stand watches on shift) and 16 were ROs. Tr. 20,581-86 (Newton).

232. The issue of the pass/fail statistics advanced principally by Mrs. Aamodt has been almost entirely mooted by the Licensee's Category T commitment (Licensee Ex. 56) and by its commitments on staffing the TMI-1 control room (Licensee Ex. 59, at 2-4), which we discuss above (¶ 79), and below under the section on Conditions and Commitments.

233. Licensee's second consultant witness was Dr. Julien M. Christensen, a consultant in engineering psychology specializing in human factors design techniques, with some 35 years of experience in education and consulting in this field. His experience includes work at the Human Engineering Division of the U. S. Air Force Aerospace Medical Research Laboratory, where for 18 years he was the Director of the Human Engineering Division. Christensen, ff. Tr. 12,409, at 1-2.

234. Dr. Christensen served as a member of the OARP Review Committee, as noted above, and was a human factors advisor to Licensee. The approach taken by the OARP Review Committee was described briefly by Dr. Christensen in his testimony:

The general mode followed in the evaluation by the Committee was based on that of the Accreditation Board for Engineering and Technology (formerly the Engineers Council for Professional Development (ECPD)). This model requires that the agency or institution being evaluated conduct a rigorous *self-examination*, based on detailed requirements established by the Committee. It is the procedure that the departments of engineering in colleges and universities are required to follow when they apply for accreditation. It is thorough; it is objective, and has been shown to yield reliable, valid evaluations of engineering training programs. In my view, it was highly successful in this application at TMI-1 because it brought together and coordinated the efforts of the Met Ed educators and a committee of outside experts to conduct a critical self-examination.

Id., at 5; see also Licensee Ex. 27, at 4-9.

235. As the individual on the OARP Review Committee with a human factors background, Dr. Christensen took the lead in evaluating human factors considerations in training and the simulator training. Christensen, ff. Tr. 12,409, at 4-5; Licensee Ex. 27, at 8. He believes that both human factors engineering and training can make significant contributions in assuring that man-machine interactions are safe and effective and that both have been employed at TMI-1. Christensen, ff. Tr. 12,409, at 6. In the judgment of the training experts of the OARP Review Committee, the OARP will add significantly to the capabilities of the operators. *Id.*, at 6-7. His examination of the Licensee's simulator program convinced him of its substantial contribution to the effectiveness of the training program. *Id.*, at 7. He noted the simulator program has been broadened not only to facilitate initial learning but also to maintain skills and to enhance ability to recognize and deal with unusual circumstances. *Id.* Further, he stated revision and additional development of the simulator portion of the training curriculum should significantly enrich the program and serve as a source of positive motivation to the operators. *Id.*²⁰

236. With respect to human factors engineering, Dr. Christensen traced the activities of Licensee to evaluate the TMI-1 control room from the operators' point of view, characterizing Licensee's approach as vigorous. *Id.*, at 8. In his view, the result of this dual consideration of human factors and training should have a positive effect on operator capability and should help assure safe and effective operation. *Id.*

237. The third consultant witness on training who appeared for Licensee was Dr. Eric Gardner, an educational psychologist with special expertise in educational psychological measurement psychometrics, test construction, and curriculum and program evaluation. *See* Gardner, ff. Tr. 12,409, at 2. He is the Margaret O. Slocum Professor Emeritus at Syracuse University and an educational psychological consultant. *Id.* at 2, 4. He served at Syracuse as Chairman of the Psychology Department and Director of the Psychological Services Center. He has extensive university teaching experience in the fields of education and psychology. He is a Fellow in the American Psychological Association and a Certified Psychologist in New York State. *Id.*, at 3.

238. Dr. Gardner testified on his views of the training program established at TMI-1 for NRC-licensed nuclear reactor operators, particularly as a member of the TMI-1 OARP Review Committee. *Id.*, at 4. His duties as a member of the OARP Review Committee were to participate in all Committee discussions to insure that adequate attention was given to the educational and psychological aspects of the training program

²⁰ After Dr. Christensen testified the Licensee did in fact commit to a strong and enhanced simulator program which we discuss separately below under Conditions and Commitments.

and to personally make the necessary observations of the various aspects of the program including those associated with teaching-learning situations. *Id.*, at 4-5. While all aspects of the final report were discussed by the Committee as a whole, his particular responsibility was to write "Evaluation of the Operator Accelerated Retraining Program" and the section on educational and training processes. *Id.*, at 5-6; see also Licensee Ex. 27, Chapters 6, 10. Dr. Gardner was favorably impressed both with the method Licensee utilized in planning the OARP and the implementation of the program. *Id.*, at 5-6. Although, for example, he admitted an initial bias against the single oral examiner technique, he testified that he was convinced that the examinations given by the PQS team were effective. *Id.*, at 6-7.

239. Dr. Gardner also addressed whether operator mindset would pose a problem to TMI-1 licensed operators. He explained that mindset is a term often used in general conversation to indicate a person's general feelings about a situation or issue. Since it is impossible to measure or determine directly the specific physiological activity taking place within the brain that causes observable behavior (either mental or physical), knowledge about mental functioning (including the measurement of intelligence) must be inferred from observable responses related to specific stimuli presented to the person. Hence the term "response set" rather than "mindset" is a term usually used by psychologists when the discussion involves training or educating. Response set may be related to a variety of stimuli and the resulting desirable behavior is the aim of either training or education. *Id.*, at 9.

240. Dr. Gardner testified that safe and effective operation of the plant by nuclear reactor operators requires response to a variety of stimuli, varying from an immediate S-R (Stimulus-Response) response to a delayed response based on higher level cognitive processes. He noted that a satisfactory training program requires a combination of training in the narrow sense and education as preparation for more complex situations; he pointed out the detailed discussion of this issue in the report on the OARP. Licensee Ex. 27, at 115-17. He explained that training emphasizes mastery of specific tasks through drill and practice, while education involves an open set of operations, eventualities which cannot be entirely anticipated, and possibilities too numerous to be learned individually. Emphasis is on transfer of knowledge to new situations through an understanding of concepts and on acquisition of skills, attitudes and values. *Id.*, at 9-10. He identified response sets that need to be established so that action by control room operators will ensure safety of operation under all conditions, pointing out how the Committee considered each of them in passing favorably on Licensee's OARP. *Id.*, at 10-13. The Staff's witness had a similar view of the steps taken by Licensee (training, revised procedures, emphasis of

the shift supervisor's responsibilities, and on-shift STAs) to prevent the the development or presence of a mindset among TMI-1 Operators. Boger, ff. Tr. 12,772, at 10. There was no contrary evidence.

241. Dr. Gardner concluded:

... the OARP for retraining nuclear reactor operators for Three Mile Island-Unit One has been carefully developed and implemented to be consistent with effective educational and psychological principles. I agree with the other members of the Review Committee that the completed Operator Accelerated Retraining Program for TMI-1 operational personnel and the addition to the shift operating staff of Shift Technical Advisors, who are degreed engineers, provide a blend of training and education that should result in the safe, reliable operation of TMI-1.

Gardner, ff. Tr. 12,409, at 14.

Aamodt Contention 2

242. This contention (§ 165, *supra*) was addressed in prepared testimony sponsored by Licensee witnesses, Staff witnesses and one of the intervenors. Licensee's testimony on the contention consisted principally of that of Long, *et al.*, ff. Tr. 12,140, Gardner, Christensen, and Kelly, ff. Tr. 12,409. Staff testimony on this contention was that of Crocker and Allenspach, ff. Tr. 12,653, and Boger, ff. Tr. 12,770. The intervenor's testimony was by Mrs. Aamodt herself, whose relevant background consists of an M.S. in experimental psychology followed by several years as an experimental psychologist with Bell Laboratories in the early 1950's and as a graduate assistant for about a year just prior to joining Bell Laboratories. Aamodt, ff. Tr. 12,931, at 10. Extensive cross-examination was conducted of these witnesses, spanning, together with related argument, some six total hearing days and more than a thousand transcript pages.

243. Aamodt Contention 2 on its face appears to be a rather straightforward broad attack on the adequacy of Licensee's training and testing program. Through the Aamodt prepared testimony and cross-examination of witnesses, however, it became apparent to the Board that the contention had particular facets, focusing on licensed operators' preparedness and involving, for those operators, elements of human factors engineering, simulator training, Licensee's training and testing methods (including reviews of Licensee's program by independent consultants), stress factors, operator attitudes and NRC's testing methods. Due in part to the evolving nature of intervenor Aamodt's concerns, the record covering these various areas is not all contained in that portion of the transcript devoted exclusively to the contention. Additionally, the Board has taken into account

portions of the record containing Licensee's and the Staff's presentations on human factors engineering, NRC's review of Licensee training, and Licensee's overall management audit by an independent firm, BETA. *See generally*, Walsh, *et al.*, ff. Tr. 10,234; Licensee Ex. 23; Tr. 10,235-395 (Walsh, *et al.*); Ramirez and Price, ff. Tr. 10,452; Staff Ex. 2; Staff Ex. 15; Tr. 10,460-590 (Ramirez, Price); Wegner, ff. Tr. 13,284; Tr. 13,285-327 (Wegner).

244. Mrs. Aamodt's first attack on the adequacy of Licensee's operator performance is based on her view that human factors upgrading planned for the TMI-1 control room is insufficient, thereby negating the desired effects of Licensee's upgraded training. Aamodt, ff. Tr. 12,931, at 4. Specifically, Mrs. Aamodt identified reduction of potential environmental stressors (such as glare from lighting) as needed items which were not getting proper attention. *Id.* at 2-3.

245. Licensee's case-in-chief on human factors upgrading of the control room was presented by a panel of five expert witnesses. *See* Walsh, *et al.*, ff. Tr. 10,234; Licensee Ex. 23. Mrs. Aamodt was not present when those witnesses testified, nor when Staff's witness on this subject appeared. *See* Tr. 10,412-13; Tr. 10,460-590.

246. Adequacy of the human factors reviews of the TMI-1 control room will be treated in the Plant Design and Procedures portion of our decision. For the limited purposes of Aamodt Contention 2, the Board finds that Licensee has conducted satisfactory reviews of the control room from a human factors standpoint and is implementing adequate improvements. Further, the Staff, based on its own human factors review, concluded that, with the corrections required prior to restart or to escalation beyond five percent power, the potential for operator error leading to serious consequences as a result of human factors considerations in the control room is sufficiently low to permit restart and full power operation. Staff Ex. 15, at 12; *see also* Tr. 21,431-33 (Baxter). Finally, we find that Licensee has considered the environmental items specified by Mrs. Aamodt (*see* Licensee Ex. 23, at section III) and plans to implement them, some of them prior to restart. *See* Licensee Ex. 33, at 3.

247. The environmental factor receiving the greatest emphasis from Mrs. Aamodt was extraneous noise interruption. She questioned extensively on effects of phone-ringing during a crisis situation and on whether absence of phones in the B&W simulator and during testing diminished effectiveness of simulator training. *See generally* Tr. 12,509-65. Mr. Kelly did not consider reliability of testing to be affected by absence of phones ringing. Tr. 12,549. Dr. Gardner testified that decision analysis training teaches operators how to approach problems systematically and confidently and indicated that this training would thus minimize the effects of external distractions. Tr. 12,549, 12,553-54 (Gardner). Dr. Long testified on post-

TMI-2 modifications to the control room environment to relieve the communications burden addressed by Mrs. Aamodt. These include establishment of the Technical Support Center; assignment on the emergency team of persons whose sole responsibility is communication; clear identification of telephones, their location, and parties authorized to use them; and removal of as many telephones as possible from the control room to the shift supervisor's office or other areas. Tr. 12,737 (Long). The Board agrees that sufficient measures have been taken to reduce phone noise distractions.

248. Mrs. Aamodt further questioned Licensee's witnesses as to the effects of stress and whether stress was adequately considered in simulator training and testing. See generally Tr. 12,422-51, 12,509-33, 12,566-76. Dr. Christensen testified that the simulator did present a reasonably stressful situation (Tr. 12,428 (Christensen)). Dr. Christensen and two other witnesses indicated that the ability of operators to deal with stress was enhanced by the OARP program and simulator training. Tr. 12,449 (Christensen); Tr. 12,566-67 (Gardner, *et al.*); Gardner, *et al.*, ff. Tr. 12,409, at 7, 8; Christensen, *et al.*, ff. Tr. 12,409, at 11. He listed actions Licensee is taking to reduce stress. Christensen, ff. Tr. 12,409, at 9-12.

249. Staff witness Mr. Boger testified that while operator candidates' performance under stress is not evaluated directly, it is observed during the testing and licensing process. Boger, ff. Tr. 12,770, at 6. He added that the time limits placed on written and oral examinations constitute to the candidates a stress which must be overcome for satisfactory completion of the examinations. *Id.*²¹

250. Part of the NRC licensing examination is an operating test, conducted in the control room, for the most part, where the candidate is subjected to the normal background noise including telephones, different conversations, and alarms. Because an emergency environment cannot be simulated in the control room during an examination, the Staff does not evaluate the capability of candidates to solve the problems of multiple-event failures in a typical emergency situation. Tr. 12,857 (Boger). However, in the operating test the candidate operators are expected to be as adept at the controls as if they had been working with those controls for several years. Tr. 12,861 (Boger). Walking through an operating procedure is one aspect of an operating examination. In order to determine a candidate's ability to use the procedures and familiarity with the procedures, the Staff would ask the candidate to start a feedwater pump, for example, which would require that he get out the procedure, go through the precautions, limitations, and operating conditions. With respect to emergency conditions, the Staff believes its oral examination is comprehen-

²¹ But see Note 18, at ¶ 204, *supra*.

sive enough to gauge an SRO candidate's ability to make decisions concerning protective action recommendations which are to be given to off-site agencies. Tr. 12,870 (Boger). Further, the Licensee has committed to having all of its operators who have not previously held NRC licenses take an NRC-administered examination at the B&W simulator prior to restart. Licensee Ex. 56, at paragraph 2.a.

251. Mr. Boger concurred with Licensee witnesses that previous operating experience, simulator exercises, and training on anticipated critical situations help to overcome the stress potentially associated with abnormal situations. Boger, ff. Tr. 12,770, at 6.

252. The second part of the Aamodt contention is that Licensee's operator training is insufficient because Licensee does not have an exact replica simulator and trains for insufficient hours on B&W's simulator in Lynchburg. Aamodt, ff. Tr. 12,931, at 4-5. Mrs. Aamodt maintained that an exact replica simulator was sufficiently important that even though the Licensee has committed to an exact replica simulator and the lead-time is from three to four years for delivery and installation alone (Tr. 12,145 (Long)), she would not have TMI-1 reopen until the simulator is available. Tr. 13,121 (Aamodt).

253. Licensee's licensed operators are sent to B&W's Nuclear Training Center in Lynchburg, Virginia for simulator training. Long, *et al.*, ff. Tr. 12,140, at 29. The Center includes a control room simulator for a plant which is similar to, but not a replica of, the TMI-1 plant or control room. Licensee Ex. 27, at 104. Dr. Christensen observed use of the B&W simulator by TMI-1 operators and determined that functionally the similarities between the B&W simulator and the control room were very great and the training was quite valuable. Tr. 12,575-76 (Christensen). The limitations he noted were with transfer of reflexive responses, since the B&W simulator uses some devices which are operated differently in the TMI-1 control room, such as push buttons rather than J-handles or pistol grip handles. *Id.* Licensee indicated that the B&W simulator simulates well the nuclear steam supply system and accidents and training needed to mitigate accidents involving this system. Tr. 12,250 (Ross). It very closely replicates the model of the TMI-1 plant in terms of plant system behavior. Tr. 12,251 (Long). Licensee operators at TMI-1 receive on-the-job training in the actual TMI-1 control room to familiarize themselves with the actual equipment which they will operate when licensed. Tr. 12,228-30 (Newton, Ross).

254. Licensee's operators receive training on the B&W simulator during initial licensed operator candidate training, during annual requalification training, and for specific training periods such as following the TMI-2 accident. Initial licensed operator candidates in 1980 participated at B&W's simulator in eight weeks of training. Long, *et al.*, ff. Tr. 12,140, at

30. Annually, Licensee's operators receive one week of simulator training during which they train as a shift. Tr. 12,156 (Long). Following the TMI-2 accident, all of the licensed TMI-1 operators attended two different training sessions at the B&W training center, focusing on loss-of-feed incidents in the first, and integrating multi-failure scenarios in the 32-hour second visit. Long, *et al.*, ff. Tr. 12,140, at 29-30.

255. Mrs. Aamodt's view of the necessity of an exact replica simulator for TMI-1 rests (1) on a report (Licensee Ex. 27) done by the group which independently reviewed Licensee's OARP and recommended, *inter alia*, that Licensee consider a simulator for TMI-1, and (2) on the fact that other units have their own simulators. Aamodt, ff. Tr. 12,931, at 4-5 and Attachment 1. The reviewers of Licensee's OARP, upon which Mrs. Aamodt relies, recommended a replica simulator, but "for the long-term" rather than as a condition of restart. Licensee Ex. 27, at 144. Licensee expects to have a simulator by 1985. Tr. 12,145 (Long). Meanwhile, Licensee has increased its attention to B&W's simulator program by assisting the B&W staff in relating the simulator performance to actual TMI-1 plant experience. Licensee also has underway part-task simulator programs which will be used pending availability of the replica simulator. Long, *et al.*, ff. Tr. 12,140, at 30; Tr. 12,258-63 (Long); Christensen, ff. Tr. 12,409, at 7. Although Mrs. Aamodt was informed of these interim measures, she nevertheless maintains that a replica simulator be available at TMI-1 prior to startup because other plants have them. Aamodt, ff. Tr. 12,931, at 4-5; Tr. 13,120-24 (Aamodt).

256. The Aamodt quarrel with the adequacy of the number of hours Licensee's operators spend at the simulator also is founded on a misunderstanding of the report of the independent review of Licensee's OARP. Licensee Ex. 27, at 99. In the OARP report, Dr. Johnson of TVA is cited as reporting that each TVA operator spends two weeks on their simulator each year, and he estimates a need for 1000-1500 hours of simulator time annually for every six nuclear units. Other experts, the report states, feel that a two-unit plant needs 2000 hours of simulator time per year. *Id.* Licensee's witness, Dr. Christensen, author of this portion of the report relied on by Mrs. Aamodt, explained that Dr. Johnson's recommendation was for about a week's simulator training per year. Tr. 12,742 (Christensen). Dr. Long, Licensee's head of training, stated that Licensee's simulator training is comparable to the TVA training recommendation. Tr. 12,154-56 (Long). Moreover, Mr. Kelly, Licensee's witness who has been involved in licensed operator training for some twenty years (Kelly, ff. Tr. 12,409, Appendix A) testified that one week of annual simulator training is the present industry-wide standard and that the standard is adequate. Tr. 13,743 (Kelly).

257. The Board finds that Licensee's present simulator training is adequate. We disagree with Mrs. Aamodt that Licensee's simulator training program is highly deficient and that Licensee must utilize a replica simulator prior to restart. While training on a replica simulator is a valuable experience, we are satisfied that training on the B&W simulator is also valuable, when accompanied with other aspects of Licensee's overall training program such as on-the-job training, extensive training in relevant subject areas, decision analysis training, and training as a shift team. *See* Tr. 12,512, 12,741-42 (Christensen). While the control room of the B&W simulator is much smaller and more limited in scope than the TMI-1 control room, Mr. Michael Ross, TMI-1's Manager of Plant Operations, stated:

But to compare its effectiveness in training, I think it simulates well anything that we would see on the nuclear steam supply system, and it simulates well all accidents and training that we need to mitigate those accidents. I think it is acceptable the way it is.

Tr. 12,250 (Ross).

258. In any event, as we discuss under our section on conditions, ¶ 551, *infra*, Licensee has committed to prepare for bids and distribute prior to April 1, 1982, specifications for a TMI-1 exact replica simulator anticipated to be installed in 1985. In the interim, our conclusion is further substantiated by Licensee's commitment to (i) have available for use at TMI-1 prior to restart the cathode ray tube part-task simulator which displays temperature and pressure as described by Dr. Long at Tr. 12,258-63; and (ii) contract, prior to restart, for a basic principles trainer for TMI-1 anticipated to be installed in 1982 and, following its availability, to provide for each operator as a part of annual requalification training at least one week of training per year on this trainer in addition to the week each year at B&W simulator, at least until Licensee's exact replica simulator is available. Licensee Ex. 56, at 3.

259. The third aspect of Aamodt Contention 2 is that Licensee's training and testing methods, including the reviews of Licensee's program by independent consultants, are inadequate. *See, e.g.*, Aamodt, ff. Tr. 12,931, at 1-2. The Aamodt view is that expressly set out in the contention itself, *i.e.*, that Licensee's personnel performance should be certified by an independent engineering firm, including 100% test performance with provision for retraining and retest and discharge of poor performers. *Id.*, at 1. This concern is directed at licensed operators and embraces, in Mrs. Aamodt's opinion, Licensee's training curriculum, instructors and physical

facilities, as well as the adequacy of testing methods and the sufficiency of reviews of Licensee's training efforts by independent reviewers. *Id.*, at 1-2, 5-6, 9.

260. The details of Licensee's overall training program were described in the preceding section of Training. In brief, to place in perspective the Aamodt concerns, following the accident at TMI-2 and the focus on TMI operators, Licensee committed to have all its TMI-1 operators undergo intensive retraining and sit for NRC-administered operator examinations (a unique situation since ordinarily operators receive on any one facility only one NRC-administered examination in a lifetime, thereafter being subject to NRC-audited, but utility-administered, requalification examinations). Kelly, ff. Tr. 12,409, at 3-4. Licensee developed and administered to its entire complement of TMI-1 licensed operators during the period August 1979 to March 1980 an intensive training curriculum, embodying previously taught subjects as well as "TMI-lessons learned". Long, *et al.*, ff. Tr. 12,140, at 38-39. This intensive, one-time program, the OARP, was reviewed by independent groups including the OARP Review Committee, of which Dr. Gardner and Dr. Christensen were members. *Id.*, at 41-42. *See generally* Licensee Ex. 27. Following the OARP and in anticipation of NRC license examinations then scheduled for April 1, 1980, Licensee required OARP participants to sit for mock NRC examinations administered by an independent consulting firm, PQS. Long, *et al.*, ff. Tr. 12,140, at 40. *See generally* Kelly, ff. Tr. 12,409, at 6-7. At the same time, PQS administered special "Category T" examinations on lessons learned from the TMI accident, required by NRC to be passed by all licensed operators (not only at TMI, but at all B&W plants). *Id.*, at 9; Tr. 20,705 (Crocker). When the schedule for restart of TMI-1 slipped, however, NRC deferred examinations for the operators and the PQS examinations were viewed as the annual requalification examinations; under the then-existing NRC grading criteria, no one failed the examination. Tr. 20,610-11 (Newton). All operators and trainees thereafter participated in Licensee requalification training programs, including annual simulator training and another round of mock NRC examinations, this time by Associated Technical Training Services, preparatory to sitting for the NRC written examinations given finally in April 1981. Tr. 20,581-82, 20,584-85 (Newton). NRC, as is their customary practice, does not anticipate giving the oral portion of the examination to the TMI-1 operators until about 30 days prior to restart of the unit. Boger (Aamodt Contention 2), ff. Tr. 12,770, at 2; Tr. 12,785-86 (Boger).

261. Turning to the specific Aamodt concerns, the Aamodts, as evidenced by Mrs. Aamodt's testimony, generally fault the training program at TMI on two grounds, first, for not measuring up to college level standards in faculty, facilities or curriculum and second, for not adequately preparing

trainees for the actual conditions they will face as operators in the control room. As to the first, Mrs. Aamodt testified based on input from her husband, an engineer, that an adequate thermodynamics course for the TMI-1 operators could only be taught by a Ph.D. (Tr. 12,988-13,001 (Aamodt)), and applying her own limited experience in education at the college level, she inferred from the OARP Review Committee's report that there were major faults with the facilities, faculty and curriculum utilized during the OARP. Aamodt, ff. Tr. 12,931, at 5. Second, Mrs. Aamodt concentrated, for example, on the lack of phones ringing during the training courses or the lack of communications demands as indicative of the failure of training to portray actual conditions with which operators would have to cope during an emergency. *See, e.g.*, Tr. 12,509-10, 12,522, 12,544-48 (Christensen, Kelly).

262. The Board is under no illusions that Licensee's training program is a college curriculum, nor do we believe that it should be. It is a vocational training program designed to equip its participants with knowledge sufficient for them to understand and safely operate TMI-1. *See Long, et al.*, ff. Tr. 12,140, at 3; Tr. 12,225-26 (Long). The current management of the training department includes experienced educational professionals. *See, e.g.*, Long, *et al.*, ff. Tr. 12,140, at 7-9, 13-15. The faculty has been upgraded both in quantity (from 7 to 45) and in quality, including the requirement that each instructor attend a one-week instructor development program. *Id.*, at 3, 10-11, 54, 57; Tr. 12,213 (Newton). The facilities which were criticized by the OARP Review Committee and faulted by Mrs. Aamodt have been greatly improved since the OARP was conducted and the facilities reviewed in 1979. *See, e.g.*, Tr. 12,321-22 (Long). A million dollar building which will serve as a training facility is under construction adjacent to TMI. Long, *et al.*, ff. Tr. 12,140, at 12.

263. Mrs. Aamodt did not visit the training facilities; she never met nor interviewed any of the instructors; and she has never viewed or otherwise studied the course curricula or lesson plans. Tr. 12,975-76 (Aamodt). She relies almost totally on the OARP Review Committee report. Tr. 13,001-04 (Aamodt). Under these circumstances, the Board relies on the views of those on whom Mrs. Aamodt herself relies, namely the OARP Review Committee members, two of whom appeared and testified that the training program was adequate. Tr. 12,744 (Gardner and Christensen); Licensee Ex. 27, at 141. We also take note of the additional training which Licensee's operators have received since that OARP review was conducted in 1979. *See generally* Long, *et al.*, ff. Tr. 12,140; Tr. 20,584-85 (Newton). Finally, with respect to the adequacy of Licensee's training to prepare operators for their actual surroundings, the Board notes the significant ingredient of on-the-job training which trainees receive, that many of the TMI-1 operators are veterans of actual plant operations, and that

the simulator training by Licensee's operators has included real stimuli, including telephone communication demands being placed on the operators. See, e.g., Tr. 12,226 (Newton); Tr. 12,741-42 (Christensen); Tr. 12,250-55 (Long, Ross).

264. With respect to the narrow scope of Aamodt Contention 2, dealing with the recommended demonstration of the upgrading of the performance of Licensee technicians and management as certified by an independent engineering firm, with 100% test performance of job description with provision for retraining and retest, the Board finds that a major portion of the contention is satisfied. Specifically, the Board finds that the OARP does adequately serve as an independent training and testing function, and that it satisfies the requirement of Commission Order item 1(e) regarding the retraining of all ROs and SROs, including training in TMI-2 accident matters. The Board also finds that the OARP and Licensee testing satisfies that aspect of the Order item which requires training at the B&W simulator and reexamination of operators. However, the Board notes that the Order item calls for the NRC to administer examinations in accordance with 10 CFR 55.20-23, and that 10 CFR 55.11(b) similarly requires that the NRC prescribe the test which must be successfully completed prior to licensing of operators. In this regard, the Board agrees with Mr. Boger that it must be the Staff, rather than an independent engineering firm as Mrs. Aamodt contends, which must determine the competency of licensed operator candidates. As to Mrs. Aamodt's remaining recommendation, the Board agrees with Mr. Boger's reasoning that a perfect score on the NRC examination regarding an operator's job description is not necessary for the following reasons: (1) the new Staff criteria provide reasonable assurance that an applicant who can achieve an examination score of at least 80% overall with no category less than 70% and who can successfully pass the operating test can perform licensed duties safely and competently;²² (2) the licensed operator is not alone on the facility as the Staff requires multiple licensed operators on each shift; hence, plant safety is not dependent solely on the knowledge and understanding of one individual; and (3) the operating test varies from one individual to another so that the Staff can assess the overall effectiveness and scope of the training program. While each operating test must cover a minimum number of plant systems, operating procedures and transients, the specific topics will not be the same for each applicant. If the examination results indicate that there is a subject or system which has not been adequately covered in the training program, the Staff will inform facility management to provide additional training in the weak area. Boger, ff. Tr. 12,770, at 4, 5. Additionally, the Board finds that adequate provisions exist for the

²²But see Note 18, at ¶ 204, *supra*.

retraining of operators and for requalification examinations, as well as for retesting of individuals who do not initially pass the NRC examinations. *Id.*, at 6, 7.

265. The fourth aspect of the Aamodt contention concerns whether the licensed operators will be prepared to withstand the stresses associated with "a really tough critical situation". Aamodt, ff. Tr. 11,931, at 6. Aspects of operator stress as perceived by Mrs. Aamodt stem from human factors considerations, simulator training inadequacies and general training curriculum inadequacies. Aamodt, ff. Tr. 12,931. Licensee and the Staff presented several witnesses who specifically addressed the potential for stress in licensed operators under accident conditions. Licensee's witness, Dr. Gardner, observed that although no psychological test exists nor is there any psychologist who can certify that any specific individual will behave in a stable fashion in all stressful conditions, initial screening of applicants, simulator training, providing checks and backup elements among the personnel in the control room, and access for control room personnel to outside knowledgeable personnel are all steps that minimize that potential. Gardner, ff. Tr. 12,409, at 7-8. Dr. Christensen reviewed factors which minimize or alleviate stress operators would experience during emergencies. Christensen, ff. Tr. 12,409, at 9-11. First, adequate training plays a role, and in his view, Licensee's program provided the necessary training. *Id.*, at 9. Second, exposure to a wide variety of possible emergency situations engenders confidence and in his view the simulator training was designed to accomplish this. *Id.*, at 9-10. Third, to respond adequately under stressful conditions, operators should have readouts that allow them to track automatic system actions and the TMI-1 control room has such information displays. *Id.*, at 10. Fourth, stress can be evidenced in the members of a team who are unaccustomed to working together and Licensee endeavors to maintain the same operators as members of each shift team. *Id.*, at 10-11. Fifth, environmental stressors, such as noise and lighting, can play a role, but Licensee, working with him and with other consultants, is addressing environmental factors. *Id.*, at 11. Finally, he observed that Licensee's decision analysis course for operators provides them with a model for dealing with stress-inducing events and that such preparation is an important element in avoiding stress. *Id.*, at 11. NRC's operator licensing witness, Mr. Boger, as we noted above, made similar observations, stating that operator candidates cope with stress which must be overcome to successfully complete NRC examinations and that previous operating experience, simulator exercises, and training on anticipated critical situations all help overcome the stress which may be associated with abnormal situations. Boger (Aamodt Contention 2), ff. Tr. 12,770, at 6.

266. The Board accepts Mrs. Aamodt's belief that operators at TMI-1 (as at any plant) will experience some stress when faced with emergencies. Moreover, we agree with Dr. Gardner that *a priori* certification that a specific individual will behave stably under virtually any stressful situation is not possible. Stress and its potential impact on operators has not been ignored by Licensee, but rather has been consciously factored into its program for preparation of operators. We regard as sufficient the measures Licensee is taking to alleviate or minimize the potential for stress in operators under critical situations.

267. The fifth element in Aamodt Contention 2 is operator attitude. Mrs. Aamodt's testimony (Aamodt, ff. Tr. 12,931, at 8-9), rather than a specific complaint, was in the nature of a recommendation that Licensee should maintain an awareness of operator attitude, foster morale and ensure an appreciation of the significance of the actions of the operators. This does not appear to the Board to be a problem. Testimony was presented that Licensee personnel appreciate the importance of their functions. Dr. Christensen testified that there appears to be a general attitude of enthusiasm and dedication to the task at hand, and, if maintained, should do much to assure that TMI-1 will be operated in a safe, efficient manner. Christensen, ff. Tr. 12,409, at 12-13. Mr. Wegner, whose consulting firm, BETA, for more than a year independently reviewed and assessed the management capability and technical resources of GPU as related to the TMI-1 restart, spoke favorably of the morale of TMI-1 personnel and knowledgeable, interested and actively involved management. Wegner, ff. Tr. 13,284, at 1, 6, 18 and 27. While BETA did not address in its review the actual status of qualification of licensed operators (*Id.*, at 12), Mr. Wegner's views on employee attitudes are instructive. Finally, Dr. Long testified that responsible attitude training is a part of the General Employee Training (GET); that it has been the focus of management directives which are discussed by supervisors with individual teams; that it is discussed with employees in employee meetings; that responsible attitude, as well as a concern and a knowledge of the responsibilities for not only their own radiation protection, but as well the protection of fellow workers and the general public, is part of the training and briefings by supervisors as part of the Licensee's integrated effort of presenting to its employees their responsibilities to the company, to each other and to the public; that it is not possible at this point for anybody associated with TMI to not understand the consequences and potential consequences of a serious accident; that it is a fundamental element of Licensee's training program that its personnel understand the possible consequences of a nuclear accident both in terms of risk to Licensee and risk to the public; and that operators specifically are trained thoroughly in the details of plant operation and the consequences of an accident. Tr. 12,303-04, 12,308-12 (Long).

268. The final element in the Aamodt contention concerns adequacy of NRC's licensed operator tests. NRC's principal witness on licensed operator testing was Mr. Boger, who described NRC's testing techniques (See Boger (Aamodt Contention 2), ff. Tr. 12,770) and explained that NRC license examinations since the TMI-2 accident have been revised in accordance with the NRC Action Plan, NUREG-0660, item I.A.3. *Id.*, at 3. The scope of the examinations has been increased to include a new category dealing with thermodynamics, heat transfer, and fluid flow. *Id.* Additionally, time limits now exist in the examination, oral examinations for SROs have been instituted, and the grading criteria have been increased. *Id.*

269. Mrs. Aamodt questioned Mr. Boger's qualifications for constructing and executing NRC licensing examinations. Mr. Boger, of the Operator Licensing Branch of NRR, has a bachelor of science degree and master's degree in nuclear engineering (Boger, ff. Tr. 12,770, attached professional qualifications) and has over five years of nuclear reactor work, experience in addition to his three years of experience with the Staff. In the Board's opinion, Mr. Boger's education and experience sufficiently qualify him to construct nuclear plant operator license examinations. His branch of NRR has hired two human factors psychologists to review operator examinations, as well as the Staff's teaching and learning processes. Tr. 12,786 (Boger).

270. In regard to the reliability, validity, and the predictive value of the tests, Mr. Boger testified that, although no systematic method has been used to determine predictive values, the examiners attempt to insure validity by basing the tests of their experience in nuclear power plant operation and their knowledge of what an operator has to know to perform his job. Tr. 12,797-98 (Boger). Further the tests are constructed in such a manner that examiners anticipate that the same individual would receive equivalent scores on different examinations. Tr. 12,851 (Boger).

271. Mrs. Aamodt also asserted that the current post-TMI examination is essentially the same as the pre-TMI-2 accident examination. However, Mr. Boger in fact testified that of necessity much of the material covered would be that previously covered and that the new examination would include questions on loss of coolant accidents and the TMI-2 accident. Tr. 12,809-10 (Boger). Further, the NRC examinations have been modified since the TMI-2 accident to incorporate subject matter contained in the NRC Action Plan, NUREG-0660, item I.A.3, as delineated in Staff's letter to Licensee, dated March 28, 1980. In addition, the examinations must conform with 10 CFR 55.20-55.23. Boger, ff. Tr. 12,770, at 2; Tr. 12,810 (Boger). Questions on the anticipated transients operator guidelines (ATOG) were not included in the licensing examination because final completion of procedures is scheduled for July 1981 and full implemen-

tation may not occur until September 1981. Broughton, ff. Tr. 10,991, at 5; Tr. 10,995 (Broughton). Licensee has committed to conducting training of all its operators in the ATOG procedures before ATOG is implemented at TMI-1. Licensee Ex. 56, at paragraph 5.a.

272. We reject the Aamodt attack on the adequacy of NRC's license examinations. In so doing, we take into account not only Mr. Boger's testimony but also the opinions of experts such as Dr. Gardner (who reviewed with favor Mr. Kelly's examinations which were fashioned after NRC examinations), who unanimously agreed that successful completion of such examinations coupled with training sufficient to allow success on those examinations was indicative of a capable licensed operator. See Licensee Ex. 27; Gardner, ff. Tr. 12,409, at 14; Christensen, ff. Tr. 12,409, at 11-13; Kelly, ff. Tr. 12,409, at 10.²³

273. Mrs. Aamodt questioned the eligibility of certain candidates to sit for the April 1981 examination since they had not passed the special "Category T" or audit examination. Aamodt PF ¶¶ 1-22. She bases her contention that they were not eligible on the Staff's statement in NUREG-0680 (Staff Ex. 1) that "operators who satisfactorily complete the OARP and audit exams will be eligible to sit for an NRC administered examination for an Operator or Senior Operator license" (Staff Ex. 1, at C1-16), which seems clear enough. Staff witness, however, said this statement merely reflected an understanding of the timing of the NRC examination as it was scheduled at the time the document was written. Tr. 20,689 (Crocker). At the time NUREG-0680 was published, the NRC licensing examinations were scheduled for April 1980 and the Staff intended that all the Licensee's personnel who had completed the special training programs could sit for the NRC examination. When the date of the NRC examination was put off, the special training program evolved into a requalification program. All of the licensed operators and the personnel to be licensed will have this special training but not necessarily before the NRC examinations. Tr. 20,689-90, 20,694 (Crocker). The Staff does not consider the special training a prerequisite to sit for the NRC test, but a prerequisite for obtaining an NRC license. Tr. 20,689-90 (Crocker); Tr. 20,595-97 (Newton).

274. The Board must conclude from the testimony of the Staff that neither the Staff nor the Commission had set any eligibility requirements which had to be completed before a candidate sat for the NRC licensing examination. However, the Board notes that Mrs. Aamodt had reason to question the Staff in this matter, based on Staff Ex. 1. Staff counsel

²³But see, as to ¶¶ 268-272, Note 18, at ¶ 204, *supra*.

Swanson conceded that the timing of the Category T examination ambiguous and that he did not know why the statement in the SER originally drafted in the manner in which it was. Tr. 20,596.

275. In her discussion of Licensee's certification of operators to s the NRC license examinations (Aamodt PF ¶¶ 23-25) Mrs. Aarn conclusion at Aamodt PF ¶ 25 is that "the certification of competent the highest level of management [has] not been based on the audits. basis of certification needs to [be] established." However, certification the Vice President of TMI-1 is not based only on the special tests, but on express recommendations he receives from the Supervisor of Operator Training (Tr. 12,234-35 (Newton)), the Operations and Maintenance Director (Tr. 12,235, 12,1787 (Newton)), the Manager of Plant Operations (*Id.*), and on the training records of the candidate operators. In the Staff's view, the certification requirement "is just one tool ... that [upper management] more involved in the operation of the plant knowing the people that they have assigned to do specific jobs in the plant." Tr. 12,065-66 (Allenspach). The Staff expressed confidence in Hukill's ability to fully meet this responsibility. Tr. 12,066 (Haverkamp). We conclude that Licensee's certification of operators to take the NRC license examination is performed in accordance with requirements.

Conclusion

276. On the basis of the extensive record developed on training the Board finds that Licensee has in place at TMI-1 a comprehensive acceptable training program. Since the accident, Licensee has substantially augmented its training department and headed it with professional engineers who have backgrounds in nuclear training. Licensee's programs have been reviewed by NRC and by highly qualified independent consultants. The TMI-1 licensed operators have been trained, retrained, audited and reaudited by Licensee's training personnel and independent consultants. The operators have been exposed to training in the areas they must master before operating the plant. Nevertheless, prior to obtaining their licenses to operate the plant, these individuals all must pass the administered examinations, both oral and written, with NRC's performance grading criteria (70%/80%) and four individuals must pass as well

special Category T (TMI-2) lessons learned) examination with a 90% grade.²⁴ The Board generally finds Licensee's training adequate and specifically finds Licensee has complied with the Commission's August 9, 1979 and March 6, 1980 Orders insofar as they relate to training. Operator training and procedures will also be the subject of our partial initial decision on plant design issues.

D. TMIA Contention 5

277. TMIA Contention 5, as finally revised,²⁵ states:

It is contended that Licensee has pursued a course of conduct that is in violation of 10 CFR 50.57, 10 CFR 50.40, 10 CFR 50.36, 10 CFR 50.71 and 10 CFR 50 Appendix B, thereby demonstrating that Licensee is not "technically ... qualified to" operate TMI Unit 1 "without endangering the health and safety of the public." This course of conduct includes:

- a. deferring safety-related maintenance and repair beyond the point established by its own procedures (*see, e.g.* A.P. 1407);
- b. disregarding the importance of safety-related maintenance in safely operating a nuclear plant in that it:
 1. [deleted]
 2. proposed a drastic cut in the maintenance budget;
 3. [deleted]
 4. fails to keep accurate and complete maintenance records related to safety items;
 5. has inadequate and understaffed QA/QC programs related to maintenance;
 6. extensively uses overtime in performing safety-related maintenance.

278. TMIA Contention 5 was not litigated by the parties in the usual manner, that is, with Licensee first presenting its case on the subject, followed by the Staff and by any intervenors presenting direct evidence.

²⁴ *But see* Note 18, at ¶ 204, *supra*.

²⁵ Memorandum and Order of Prehearing Conference of August 12-13, 1980 (August 20, 1980), at 3.

Rather, because of "a failure by TMIA to respond fully to Licensee's interrogatories on the contention" after approximately five months of discovery, motions to compel by Licensee, responses by TMIA, and Board orders granting Licensee's motions to compel, the Board directed TMIA to proceed first with its affirmative case on Contention 5 at the start of the evidentiary hearing.²⁶ Memorandum and Order of Prehearing Conference of August 12-13, 1980 (August 20, 1980), at 3-4. Upon the presentation of TMIA's affirmative case, Licensee would be able to discover the specifics upon which TMIA relied in asserting its Contention 5, and therefore would have the opportunity to meet TMIA's affirmative case. *Id.*, at 4, citing Tr. 2106-28.

279. Beginning on October 15, 1980, TMIA called fifteen witnesses to testify, thirteen of whom were Licensee employees subpoenaed by TMIA. An additional Licensee employee testified on the subject of overtime practices in the Maintenance Department at the request of the Board. Tr. 4017-19 (Smith).

280. Licensee's responsive case on the subjects included in TMIA Contention 5 was conducted in February 1981. Two items of direct testimony by a panel of five witnesses and by an individual witness, respectively, were introduced into evidence. Shovlin, *et al.*, ff. Tr. 13,533; Manganaro, ff. Tr. 13,643. In addition, a third item of prefiled testimony entitled, "Licensee's Response to Board Question Concerning Maintenance Practices in the Sample Year, 1978", prepared at the request of the Board (Tr. 3352-58), was admitted as Licensee Ex. 29, without any cross-examination of Licensee witnesses by TMIA, the Staff, or the Commonwealth of Pennsylvania. Tr. 13,659-61 (Blake, Smith).

281. The NRC Staff prefiled two items of testimony, both by witnesses Keimig and Haverkamp, along with a supporting memorandum, directed at issues raised by TMIA and by the Board on the subject of previous and present maintenance practices at TMI-1. These documents also were received into evidence (ff. Tr. 16,412) without any cross-examination of the sponsoring witnesses. Tr. 16,408-09; 16,411-12 (Smith, Keimig, Haverkamp).

²⁶ Licensee's motion to dismiss TMIA's Contention 5 could have been granted because of TMIA's default in responding to discovery. However, because of its importance the Board elected to receive evidence on the issue.

Deferral of Safety-Related Maintenance and Repair Beyond the Point Established by Licensee's Own Procedures

282. Historically, corrective maintenance has been performed at TMI-1 by use of a work request (now called a job ticket) system. Tr. 2638 (Shovlin). In order to initiate a repair on any component or system associated with the plant, an individual originates a work request, identifying the malfunction and the cause, if known. Tr. 2639 (Shovlin). This identification triggers a chain of events within the Maintenance Department with which the Operations Department is frequently intimately involved, Tr. 2683-88 (Shovlin), whereby the identified repair is planned, scheduled for work, approved for work, and fixed. Tr. 2639-62 (Shovlin). Depending on the nature of the work performed — e.g., whether an engineering modification is required, rather than a repair in kind — the work request itself will go through hands in addition to those of individuals in the TMI-1 Maintenance Department. After the repair has been completed, a similar chain of approvals and signatures is required, the number of which is also dependent on the nature of work performed, e.g., whether QC must review the work package because the repair involved a component included in GP 1008, the Quality Assurance Systems List. Board Ex. 1; Tr. 2646, 2659-62 (Shovlin); Tr. 13,595-97 (Dyckman).

283. It is TMIA's allegation that a sample of work requests selected by it supports its contention that Licensee improperly, and at the expense of the public health and safety, deferred safety-related maintenance.

284. The time frame in which maintenance work is to be accomplished at TMI-1 is not defined by Licensee's past or present procedures. Rather, work requests are categorized by their assigned priority. *See generally*, Shovlin, *et al.*, ff. Tr. 13,533, at 12-21, 39-43, 47-49. Tr. 2673-82, 2701-03, 3061-73 (Shovlin). The manner in which priorities are assigned is radically different now with the promulgation of new definitions of priorities for maintenance work, than the system previously used at TMI-1. As clarified by Mr. Shovlin's additional testimony, the present priority system was utilized as guidance since he proposed it in November 1979 (Licensee Ex. 2), and was officially approved in March 1980. Although the priority system was being utilized prior to October 1980, it was not until then that all the new forms needed under the new procedures were available. Shovlin, *et al.*, ff. Tr. 13,533, at 40. Contrary to TMIA PF ¶ 22, this is consistent with Mr. Dyckman's testimony at Tr. 3891-92. Whether or not there was real confusion in practice by plant workers, or just some confusion by the participants in the hearing when Mr. Shovlin first

testified on October 15 and 17, 1980, as to when the new priority system was used in practice, we find it sufficient for our purposes that the system has been in effect at least since October 1980.

285. The priority designations for maintenance work under the old system were three simplistic ones of: priority 1 - urgent; priority 2 - routine; and priority 3 - low priority. Shovlin *et al.*, ff. Tr. 13,533, at 51; Tr. 2673-76 (Shovlin). This priority system was clearly unsatisfactory as conceded by Licensee (PF ¶ 73) and as recognized by Mr. Shovlin. See *e.g.*, Tr. 3073; Shovlin, *et al.*, ff. 13,533, at 51. The old priority 1 definition of "urgent" was too broad to screen out unimportant maintenance. *Id.* In addition, because the priority was assigned and noted on the work request by the initiator of the work request, a large element of subjectivity entered into the designation of a priority. As Mr. Shovlin explained, a janitor with a leaky valve that is spilling water all over his floor considers the valve repair to be urgent, and hence a priority 1 job. *Id.*; Tr. 3071-72; 2676-77 (Shovlin). Moreover, a large volume of duplicative work requests existed because the system permitted a work request to be initiated by any individual; however, no administrative method existed to weed out jobs already identified on a work request, *e.g.*, by a worker on a different shift. Consequently, Mr. Shovlin had to "purge" the system by discarding work requests which were no longer valid because the work had been completed through a different work request or the request was duplicated by other outstanding work requests. Tr. 2679-80, 2698-701 (Shovlin); Shovlin, *et al.*, ff. Tr. 13,533, at 30-31.

286. The old priority system could not be relied upon to highlight truly important maintenance. Tr. 3101 (Shovlin). Therefore, so-called "real priority" maintenance work was tracked and scheduled for work through the use of thrice weekly morning "plan of the day" meetings attended by Maintenance and Operations personnel, as well as individuals from other appropriate organizations such as QA. Tr. 2701-03, 3085-86 (Shovlin); Licensee Ex. 29, at 12-14. These "real" priorities were addressed *ad hoc* on the basis of the nature of the work, not on the basis of the priority assigned to the work request by its originator. Licensee Ex. 29, at 12-24; Tr. 3100 (Shovlin).

287. The priority system, as revised, completely changed the definitions of priorities, in addition to adding a fourth priority. Shovlin, *et al.*, ff. Tr. 13,533, at 39-45. The new definitions classify maintenance work according to the health and safety of the public and plant personnel, and the operability of the nuclear plant:

Priority 1: Can *only* be classified by superintendents, department heads or shift supervisors; will cause a plant shutdown; reduce generation; has a time clock of very short duration; is an im-

mediate industrial or nuclear safety hazard; compromises nuclear safety or security, reactor control or power conversion cycle control system in so far as to present a clear threat of initiation of a trip or severe transient; imposes or threatens increased personnel radiation exposure; constitutes one element of a multievent failure which would result in initiation of a trip or transient.

Priority 2: Could cause a plant shutdown if operation is continued too long; redundant component and backup is no longer available; could cause a plant limitation in the near future; time clock on the component that will require it to be repaired in a timely fashion; items that should be repaired when plant conditions allow.

Priority 3: Routine corrective maintenance that does not impact plant operation.

Priority 4: Corrective maintenance to clear minor problems that don't actually affect the operation of any components; all change modifications and any improvements that are not related to plant performances.

Licensee Ex. 2. While a priority assignment is recommended by the initiator of the work request, the priority assigned to a job is determined by the Manager of Plant Maintenance or his designee. Tr. 3097 (Shovlin); Shovlin, *et al.*, ff. Tr. 13,533, at 40-41.

288. In addition to the revised priority system, however, the Maintenance Department continues to make use of weekly work schedules, the plan of the day meetings, and daily ("1600" hours) scheduling meetings, to review with Operations and obtain joint concurrence on the appropriate schedule of work. *Id.*, at 45-47. In addition, the maintenance department now uses a computer system with numerous printouts, to organize and track all TMI-1 corrective maintenance activities. Among other things, Licensee uses computer summaries as a means to identify currently outstanding work by priority. *Id.*, at 36. We will discuss Licensee's systems further in the subpart of this section regarding the accuracy, completeness and auditability of Licensee's maintenance records.

289. In reviewing the maintenance system described by TMIA's witnesses, as well as the testimony of Licensee and the Staff, the Board finds no support in the record for TMIA's specific allegation that Licensee has under the past or present system departed from a company standard in failing to perform maintenance in a timely fashion. This is based on the fact that Licensee had and continues to have no firm standard defining the time within which work, of whatever importance, was and is required to be accomplished. Rather, as discussed above, through the use of regular

meetings as well as currently utilizing computer printouts of outstanding job tickets, it has been Licensee's practice to track what its key Operations and Maintenance personnel perceive to be important maintenance work.

290. Notwithstanding the fact that the evidence fails to sustain TMIA's relatively narrow point that Licensee ignored its own procedures in improperly deferring safety-related maintenance, the Board considers it important to evaluate on its own whether the alleged examples of improperly deferred safety-related maintenance presented by TMIA, either individually or as a group, indicate a lack of attention on the part of Licensee to significant maintenance work at TMI-1. Similarly, during the proceeding, one of the topics on which the Board requested additional information was whether, prior to November 1979, Licensee had in place a reliable method of identifying nuclear safety work requests which required maintenance. Tr. 3352 (Smith).

291. TMIA Contention 5 is limited to safety-related maintenance. A great deal of time was spent during the hearing attempting to clarify the Board's and the parties' understanding of this concept. TMIA and Licensee agreed that safety-related is not equivalent to and should not be confused with safety-grade, or other terms used in the industry. Rather, it was the consensus of the interested parties that the term safety-related, as it pertains to TMIA Contention 5, should be interpreted by what would be a dictionary or ordinary definition of the term; that is whether or not a particular maintenance item and the systems involved in the maintenance item have some safety significance. Tr. 2859-68 (Selkowitz, Blake).

292. The parties also agreed initially to rely upon the expert opinion of Mr. Joseph J. Colitz, the Manager of Plant Engineering at TMI-1 and one of the witnesses subpoenaed by TMIA, as to whether the particular maintenance activity identified in each work request offered into evidence by TMIA would be safety-related, in light of the component(s) and system(s) involved. Tr. 2573-79 (Blake, T. Adler); Tr. 2861-67 (Blake, Selkowitz). During the course of Mr. Colitz' direct and cross-examination, however, it became clear that TMIA disagreed with Mr. Colitz' conclusions as to whether particular maintenance activities should be considered nuclear safety-related. *Compare* Tr. 3487-88 (Selkowitz) *with* Tr. 2847-50 and 3134-35 (Colitz); *compare* Tr. 3560-62 (Selkowitz) *with* Tr. 2948-52 and 3238-43 (Colitz).

293. Mr. Colitz, who has worked at the plant in a senior engineering capacity for approximately nine years and has in the past been licensed as a senior reactor operator at TMI-1, has close familiarity with the TMI-1 facility. Tr. 3115-16 (Jordan); Tr. 2994 (Colitz); Hukill, *et al.*, ff. Tr. 11,617, at 40-42. Mr. Colitz testified that he determines whether a particular maintenance activity is nuclear safety-related by looking at the particular component or the problem associated with it and the consequences

of doing that job. If the act of doing the repair does not affect the integrity of the reactor coolant system boundary, if the component or system being taken out of service to do the repair is not required for safe shutdown of the plant, and if the inoperable component or system is not required for any accident conditions or mitigation of any consequences and releases to the public, Mr. Colitz would maintain that the maintenance job is not safety-related. Tr. 2994-95 (Colitz). Thus, although maintenance personnel regularly work on safety-related components or systems, the job itself — considering both the nature of the problem and the work required to fix the problem, e.g., a packing leak — may not necessarily be a safety-related repair. Tr. 2995 (Colitz).

294. TMIA offered no alternative means of determining whether a particular maintenance activity was safety-related. Tr. 3030-39 (Selkowitz). Other than relying on priority designations under the old system, which we have found above not to be a reliable indication, no consideration was given by TMIA to whether the work request activity itself or the system or component which was the subject of the work request activity was safety-related. Tr. 3317 (Bonetti).

295. While the Board relied upon the testimony of Mr. Colitz, the Board also utilized its own expertise in evaluating the testimony, as well as its non-technical judgment, in light of the common usage of the term, safety-related, to which the parties agreed with respect to the evidence presented on TMIA Contention 5. See ¶ 291, *supra*. As applied to the particular work requests admitted as TMIA exhibits to which we refer below, the pertinent question is whether the time lag involved in accomplishing the work after the initiation of the request presents a situation with a potential for an adverse impact on safety. This is to be distinguished from the broader question of whether the system worked on may be nuclear safety related. This broader question was addressed and liberally applied by the Board in the preliminary context of deciding whether TMIA's proposed work order exhibits were admissible into evidence.

296. As a result of the initial phase of the hearing in which TMIA questioned Licensee's witnesses on the alleged delays on selected work requests, the Board and parties were informed of which work requests to focus upon. Licensee presented responsive testimony which explained in detail the performance of the work covered by those work requests admitted into evidence as TMIA exhibits. Shovlin, *et al.*, ff. Tr. 13,533, at 23-34, 52-69, and 75-77. With respect to the issue of improper deferral of maintenance work, we find that Licensee's responsive written testimony satisfies us that there was none of significance, and that there is nothing inconsistent with the written responsive testimony in the examination of Licensee's witnesses at the hearing. Indeed, TMIA asked no questions on this further testimony with respect to Licensee's explanation of the par-

ticular TMIA exhibit work requests. Tr. 13,534-85, 13,625-26 (Shovlin, Dyckman, *et al.*). With the exception of those which we discuss further in the following paragraphs, we find it sufficient to rely upon the description of each TMIA exhibit work request in Licensee's written testimony for the conclusion that there was no improper deferral of maintenance work. The pertinent work request TMIA exhibit numbers are listed below, followed by the page numbers at which they are discussed in Licensee's responsive testimony of Shovlin, *et al.*, ff. Tr. 13,533.

<u>TMIA</u> <u>Ex. No.</u>	<u>Testimony,</u> <u>Page No.</u>
11	52-53
12	23-24
13	25
15	59-61
16	61-63
17 & 18	63-66
19	53-55
20	75-76
21	55-56
22	56-58
23	26-27
28	66-68
31	76-77
33-34	68-69
39	58-59
40	27-29
42 & 43	30-34

297. TMIA Ex. 23 is a work request with a designated 1A priority to reposition the limit switches on four reactor building access doors. These switches are part of the multiple door interlock system to ensure containment integrity. Shovlin, *et al.*, ff. Tr. 13,533, at 26-27; Tr. 3617 (Leakway), 2936 (Colitz). TMIA did not question Licensee's explanation of this matter at the hearing, but cites this as an example of a two-month delay in ordering parts and a further five and one-half month delay in receiving the parts. TMIA PF ¶ 25. We agree with Licensee's reply finding ¶ 16 that TMIA ignores the explanation by Mr. Dyckman in the written testimony and in response to the Commonwealth's questions that although the work was originally scheduled to be performed during the June 1978 outage in which the NRC inspection noted the problem, Licensee's engineering department decided instead to change the switches, rather than

just reposition them. Tr. 13,600 (Dyckman). Therefore, the new design had to be looked at before the parts could be ordered, and in any event once the decision was made to change the design and therefore schedule the work at the next refueling outage, it was evident that the delay in obtaining the parts until February 1979 would not impact the schedule for performance of the work. The work was completed in March 1979. Tr. 13,000-01 (Dyckman); Shovlin, *et al.*, ff. Tr. 13,533, at 26-27. Since the questions were not asked, the record does not disclose whether the repair could only (or best) be done during an outage, or why the old switches were not relocated during the June 1978 outage as a temporary measure. TMIA PF ¶ 25. However, in an inspection report during the interval between the problem being cited and corrected, the Staff noted that satisfactory administrative controls were in place until the repair could be effected. Shovlin, *et al.*, ff. Tr. 13,533, at 27. In addition, there were installed alarms for monitoring the position of each interlock door. *Id.*, at 26. The Staff testified that the work "was done in an acceptable and timely manner for the nature of the work and minor significance of the problem." Keimig and Haverkamp (TMIA 5), ff. Tr. 16,412, Table B at 10. We agree.

298. TMIA Ex. 33(a)-(m) and Ex. 34(a)-(k) mainly represent record keeping problems and will be discussed in the next section. On this record we cannot find a safety problem actually being caused by the delays in replacing some of the air handling filters in the ventilation systems in the machine shop (the Ex. 33 work orders) and in the control building (the Ex. 34 work orders). However, we agree with TMIA (PF ¶ 23) and Licensee (Shovlin, *et al.*, ff. Tr. 13,533, at 69) that it is at a minimum bad practice to delay replacement, particularly of the control building filters where equipment which would be sensitive to high temperatures are located. *See also*, Tr. 3718 (Jordan). In the Board's view, this example shows that while the filters themselves are a simple item which need not be in the QC scope of equipment, the failure to have timely replacement could in the long run have potential effect on equipment which is related to safety of the plant. We agree with Licensee's new emphasis of this item in employing monthly inspections of filters as part of its preventive maintenance program. Shovlin, *et al.*, ff. Tr. 13,533, at 69.

299. TMIA Ex. 40 was admitted for the limited purpose of showing a record keeping problem. Tr. 3797 (Selkowitz, Smith). TMIA also now cites it as an example of improperly deferred maintenance. The problem involves a reactor coolant pump seal leak off recorder which alarms in a conservative direction (on a non-alarm condition) once or twice a year. The problem has occurred since at least July 1977 and had not been fixed at the time of the testimony — February 1981. Tr. 13,603-04 (Dyckman); Shovlin, *et al.*, ff. Tr. 13,533, at 27-29. The Staff believes that Licensee's

low priority in performing the work is appropriate for the problem. Keimig and Haverkamp (TMIA 5), ff. Tr. 16,412, Table B at 18-19. We agree that due to its infrequency, this spurious alarm creates no significant problem and that the priority on fixing it need not be high. However, we add the comment that a delay of almost four years seems long in view of the fact that it should be fixed eventually.

300. We find no evidence that Licensee has improperly deferred safety-related maintenance and repair either beyond a point established by its own procedures or so as to endanger the health and safety of the public.

Failure to Keep Accurate and Complete Maintenance Records Related to Safety Items

301. In its case-in-chief, TMIA questioned Licensee employees on the record keeping system used by the TMI-1 Maintenance Department in the past and in the present. *See e.g.*, the discussion of how work request information is put into the computer, a review of differences between the computer summary and the manual Maintenance Log information, and the genesis of current procedures. Tr. 2662-72 (Shovlin). The functions of the corrective maintenance component history report (TMIA Ex. 9) and corrective maintenance master job ticket report (TMIA Ex. 10) were explained. Tr. 3377-437 (Good). There was also testimony on the purpose of the manual Maintenance Log, an explanation of the Misplaced Job Ticket Reconciliation Form (TMIA Ex. 42), and a description of current document control practices. Tr. 3839-88 (Dyckman). In addition, TMIA offered into evidence a number of work requests in support of subsection (b)(4) of TMIA Contention 5, which alleges that Licensee's record-keeping practices with respect to safety-related maintenance are inaccurate and incomplete and, as such, contribute to Licensee's disregard of the importance of safety-related maintenance in safely operating a nuclear plant. These work requests, as we discuss below, present a variety of record-keeping problems.

302. On the basis of the evidence presented to the Board during TMIA's case-in-chief, the Board was motivated to inquire further into Licensee's past record keeping system, that is, whether the Licensee had in place a reliable system of records which would identify nuclear safety-related work requests and assure that the work was either done or made unnecessary for some other reason. Tr. 3352 (Smith). *See also* Tr. 3355-58, 3896. By agreement of the parties and with the Board's concurrence, the year 1978 was chosen as a representative or sample time period for purposes of addressing this Board inquiry. Tr. 3358-59 (Smith); Tr. 3835-36 (Blake, Selkowitz).

303. Licensee and the Staff responded to the Board's request for information, in addition to responding to TMIA's case-in-chief. Licensee, in several pieces of testimony, described in detail the maintenance record keeping system in existence at TMI-1 now, as well as the system utilized in the past, including discussion of the Maintenance Department's interface with the QA Department. Shovlin, *et al.*, ff. Tr. 13,533, at 14-23, 29-39, 47-51, 72-75, 77-79; Licensee Ex. 29. The Staff also responded to TMIA's presentation and the Board's inquiry, focusing upon the auditability of maintenance work in the sample year 1978, and in the present, as suggested by the Board and agreed upon by the interested parties. Tr. 13,662-67. Based on information independently obtained by IE during and in response to the Management Appraisal Inspection 50-289/80-21, described in the management safety evaluation report, NUREG-0680, Supp. 1 Appendix B (Staff Ex. 4), as well as routine NRC inspections in those areas conducted during 1978, the Staff concluded that Licensee's prepared testimony was an accurate representation of the Licensee's current and past (1978) maintenance and QA/QC programs and practices. Keimig and Haverkamp (Sample Year 1978), ff. Tr. 16,412, at 1-3; Keimig and Haverkamp (TMIA 5), ff. Tr. 16,412, at 2-3.

304. As we discuss below, TMIA has demonstrated by some of its examples the Licensee in the past has maintained inaccurate and incomplete maintenance records. However, we also find that Licensee has significantly improved its system of keeping maintenance records. Except for some reservations which we note, we find that Licensee has properly responded to correct its poor past system of maintenance records.

305. The prior system permitted paper work problems. For example, work has to be performed on some items such as river water pump packing leaks on an almost continuous basis. TMIA 17(a-f) and 18 were duplicative work requests written for some of this packing adjustment work. Most of the packing adjustments were not documented on any work requests.²⁷ Under the new system, Licensee would issue a blanket work request for this type of job to be closed in a prescribed period of time. Only one blanket request would be open on the same continuing type work at a given time, and each performance of the task is reported to assure complete documentation. Tr. 13,616-17, 13,626 (Dyckman); Shovlin, *et al.*, ff. Tr. 13,533, at 63-66.

²⁷ A further record keeping problem with respect to TMIA Ex. 17 (a-f) is that there are inconsistencies among these work requests. All are marked as being work on a QC component. However, some are further marked that the work has an affect on nuclear safety, while others are marked "no" to this item (no. 8b on the form). See Tr. 3547-57 (Shovlin).

306. In another case, a work request for maintenance performed during a shutdown was left open and used during subsequent shutdowns for the same work performed. TMIA Ex. 28; *Id.*, at 66-68. For this type of maintenance, which is recurrent, but not as frequent as that for which blanket work requests are now used, a separate work order for each job would now be written. *Id.* See also *Id.*, at 61-63 regarding problems with respect to TMIA Ex. 16 which are similar to TMIA Ex. 17(a-f) and 18, and 28.

307. TMIA Ex. 21 is a work request for which the important part of the repair was completed, but a minor part of the work was deferred and then never completed. *Id.*, at 55-56. However, the same request remained open until it was marked "Cancelled, Purge" in the record cleanup performed by Licensee in November 1979. This left it ambiguous on the face of the request as to what work was done, particularly since other work requests (TMIA Ex. 22) were similarly marked cancelled purge when no work was done. *Id.*, at 56-58.

308. TMIA Ex. 33 (a-m) and 34 (a-k) involving ventilation system filters have already been discussed with respect to the substantive significance of the deferral of the work involved. We agree in part with TMIA PF ¶ 19 that such accumulation of duplicative work requests and cancellations without noting the reasons, create confusion. The Staff noted that timely reviews by it of these work requests for purposes of the hearing were therefore impeded. Keimig and Haverkamp (TMIA 5), ff. Tr. 16,412, at 5. In addition, there are inconsistencies in that on one of these requests the work is incorrectly marked as having an affect on nuclear safety, and many of the work requests are incorrectly marked as being a QC component. Shovlin, *et al.*, ff. Tr. 13,533, at 68-69; Tr. 3726 (Little).

309. There are other examples of work requests cancelled with the reasons not noted even when they were superseded by other requests (*e.g.*, TMIA Ex. 40), and of work requests (or job tickets) lost. Tr. 3866-67 (Dyckman).

310. TMIA believes that Licensee's new computerized system does not solve many of the problems of the past. TMIA PF ¶¶ 72-78. It appears to us that the new system will be effective. The automated system, with the rapid retrieval of information in various formats, and the administrative checks to avoid the problems of duplicative requests, multiple work not being documented as it was performed, and priority designations being checked at appropriate management levels to assure the computerized system accurately reflects the real priority, all represent substantial improvement. See Shovlin, *et al.*, ff. Tr. 13,533, at 29-39.

311. The computer system will be fully in effect by the end of 1981. Tr. 13,605 (Dyckman). It will be a cathode ray tube system with the capability to include real time information on the status of job tickets.

Until then, the maintenance log serves as the listing of the most recent job tickets for the past several days until they are entered in the present key punch computer system. Tr. 3906-08 (Dyckman).

312. It is correct, as TMIA points out in its findings, that the Licensee has been in transition in moving from the old maintenance system of records to the new one. This is not surprising, and it appears to us that Licensee's approach of maintaining the old system for old work requests and the new one for new computer job tickets for a period of transition is a good one. Shovlin, *et al.*, ff. Tr. 13,533, at 29-30. Licensee is correct (Licensee reply findings of June 15, 1981, ¶ 32) that TMIA has ignored Licensee's action program set up in late 1979 to correct the problems, noted by Licensee itself, in implementing the computer system. Licensee's efforts include monthly update reviews to clear old work requests from the computer, with references to why an old request was cancelled similar to the system used for new job tickets. Where applicable, superseding job tickets are provided. *Id.*, at 30; *See generally, Id.*, at 29-34.

313. Licensee has further noted, as TMIA PF ¶ 74 points out, that the computer component history report is not reliable with respect to the correctness of whether the work is on a QC component as defined by Licensee's listing in GP 1008. Board Ex. 1. At least until the updates to the computer data base of old work requests noted above are fully completed, and until enough time goes by for there to be a sufficient data base in the computer for a good machinery history for components (NRC requires that machinery history be maintained for six years), machinery history cards will continue to be maintained as per Licensee's old procedures. *Id.*, at 38-39; Tr. 2664 (Shovlin). It may be that by that time the problem with respect to reliability of the QC designation in the computer component history report will be solved. In any event, it is important in our view that Licensee is aware of this defect and therefore will not rely on the computer component history report for the QC designation.

314. We can and do find that Licensee's records under the old system were auditable, albeit at times with difficulty, on the basis of the uncontradicted and unquestioned testimony of the NRC Staff inspectors on the sample year 1978. Keimig and Haverkamp (Sample Year 1978), ff. Tr. 16,412. We further find, however, that TMIA has brought forward examples of inaccurate and incomplete maintenance records as summarized in our findings above. Many of the problems noted were conceded by Licensee, as we also have summarized above. None of the problems disclosed safety problems in the actual work. However, it was at times a difficult job for us, and perhaps for the parties including the Licensee and Staff, to follow the paper path of the Licensee's old system.

315. We find there is reasonable assurance that the continuation of the Licensee's present transition phase and subsequently the fully phased in use of the new computerized system, along with the management controls in tracking and scheduling maintenance, work, will solve the record keeping problems noted. However, our finding is to some extent necessarily predictive. We therefore note the Commission's dependence in the future on the Staff's routine inspection program. Given the Staff's ongoing inspections, and in light of the fact that the Licensee is implementing a radically different system, we expect the Staff inspections will focus in part on the ability of the Licensee routinely to keep track of its maintenance records and manage the scheduling and prioritizing of its maintenance, and on the continuing auditability by Licensee itself and by the Staff of safety-related maintenance records. We suggest that the first of such inspections be made by the Staff after Licensee has gained experience with the new computer system, perhaps about six months after any restart.

316. In connection with auditability, and the closely related subject of QA/QC which we discuss in a separate section below, we note the following matters for the Licensee and Staff. Although these three items are not dispositive of our findings in this litigation, upon our review of the record, they have occurred to the Board as being worthy of noting:

317. Item 1: As we note below in the QA/QC section in connection with TMIA Ex. 12, the auditability of records would be improved if QC observation hold points were signed off by QC at each such point, instead of just the final QC approval being noted after completion of the work. The acceptance or rejection of this change by Licensee should be documented and reviewed by the Staff as part of its future inspection of maintenance and QA/QC records.

318. Item 2: As we also note in the QA/QC section in connection with TMIA Ex. 20 and 31, there were long delays in the QC approval being obtained and noted after completion of the work. At best, this is a poor record keeping practice. The performance of Licensee in this regard should be reviewed in future Staff inspections of maintenance and QA/QC records.

319. Item 3: As we have noted above at ¶ 293, Mr. Colitz includes the effect of the act of making a repair in his determination of whether the work has an effect on nuclear safety. We are concerned that this item ("Does the work have an effect on nuclear safety?") on both the old work requests and the new job ticket, is only addressed if the previous question — "Is [the] work on a QC component as defined in GP 1008?" — is answered by checking "Yes" on the form. *See, e.g.*, TMIA Ex. 17a and 34, Shovlin, *et al.*, ff. Tr. 13,533, at 16, and at Appendix 2-4. The correctness of the QC determination goes through reasonably prudent review and audit in our view. Tr. 13,595-97 (Dyckman). It is also an acceptable procedure

that if a job ticket is checked "Yes" for QC component, and "No" for nuclear safety effect, that determination of no nuclear safety effect (and hence no need for an approved written work procedure) is reviewed by a person as senior as the Operations and Maintenance Director (in the past, the Unit Superintendent). Licensee Ex. 29, at 9; Shovlin, *et al.*, ff. Tr. 13,533, at 17. Our concern is whether the potential for the actual work on a non-QC component to have an effect on nuclear safety (*e.g.*, because the work must be done in proximity to safety-related systems) is properly evaluated by Licensee before the work is done. Indeed, Licensee's emphasis on the nuclear safety effect of the *work* in describing the job ticket form (Shovlin, *et al.*, ff. Tr. 13,533, at 16) is not reflected in the structure of the form. *See also* Tr. 13,617-18 (Dyckman), and Arnold, ff. Tr. 11,434, at 20. To put it in the format of the new job ticket, we do not understand why item 4 (agreement that approved procedure is not required because work has no effect on nuclear safety) does not apply regardless of whether the work is on a QC component (item 3a). Licensee should expressly consider whether or not to make such a change, and the Staff should furnish its agreement or disagreement and the reasons therefore with Licensee's decision to the Commission prior to any restart.

Proposed Cut in the Maintenance Budget

320. In January 1979 an across-the-board operations and maintenance budget cut of about 6% was proposed by GPU management for the year 1979 after the original 1979 budget had been developed Tr. 4038-42 (Wise). TMIA contends that this budget cut proposal was drastic, at least as it impacted on the TMI-1 Maintenance Department, and constituted a disregard by Licensee's management of the importance of safety-related maintenance in safely operating a nuclear plant. TMIA Contention 5(b)(2).

321. TMIA called two witnesses on this subject, Mr. Donald Wise, Assistant Comptroller for Met Ed, and Mr. John R. Knoll, Administrator, Budgets and Reports, Three Mile Island. Mr. Wise was not sure whether any of the proposed budget cut items were in fact instituted. He testified that it was not until March 13 that a final report identifying the proposed budget cut items was made, TMI-1 was refueling at that time, and the accident on March 28, 1979 mooted the budget reduction program. Tr. 4057 (Wise). There is no evidence that any actual budget reduction had a direct effect upon TMI-1 or any other GPU operation. TMIA does not assert any such effect. TMIA PF ¶¶ 43-47. The only significance of the proposed budget cut is that, according to TMIA, it may have demonstrated an attitude on the part of GPU management "... of maximization of profits at the expense of safety." TMIA PF ¶ 47. The only basis

asserted by TMIA for this conclusion is any inference which could be drawn from the fact that GPU considered budget cuts, and would have imposed them, but for the accident.

322. There is other evidence however that GPU approached the budget cuts with due regard for safety. Mr. Herbein, then Met Ed's Vice President for Generation, informed the management of Region I, Office of Inspection and Enforcement (IE) of the proposed budget cuts on February 9, 1979, and assured IE that plant safety at TMI would not be affected. Keimig, Haverkamp (TMIA Contention 5), ff. Tr. 1614, at 6. The IE personnel regarded Mr. Herbein as being "totally above board in these disclosures." *Id.*, at 7. Subsequent review by IE indicated only some *proposed* reduction in preventive maintenance contracts but none for corrective maintenance. *Id.*, at 8-10.

323. At TMI-1, as well as within other Met Ed organizational units, the items proposed to senior management as eligible for the proposed budget cut list were initiated and proposed within "root departments", such as the TMI-1 Maintenance Department. These proposed items were reviewed within each organization, reexamined on a production division level at Met Ed, and finally approved by the President of Met Ed. Tr. 4046, 4049-50, 4059-62 (Wise). At TMI-1, management of Met Ed's Generation Division (the production division in which the TMI-1 budget was located) undertook a thorough review of the priority list for budget cuts established by plant personnel. At a series of meetings, these priorities and impacts were examined in detail. Tr. 4059-60 (Wise); Tr. 4096-98, 4116 (Knoll). This method of identifying potential cuts to the 1979 budget as originally proposed made it possible, at least theoretically, for a department within a division to avoid any cuts to its budget if the department could identify no savings greater than the risks associated with cutting costs. Tr. 4062 (Wise, Smith).

324. The Board concludes that although a budget cut was proposed in early 1979 which would have affected TMI-1 maintenance activities, there is no evidence to support the contention that this cut was drastic, or would have been drastic if the TMI-2 accident had not occurred. Nor is there any reason to believe that the method used by Licensee to identify priorities for reduction did not satisfactorily identify and exclude items which could not be eliminated from the 1979 budget without affecting safe operation of the plant. Nor is there any basis to conclude that the proposed budget cuts demonstrated an underlying management philosophy of compromising safety in favor of profits as alleged by TMIA.

Inadequate and Understaffed QA/QC Programs Related to Maintenance

325. Closely related to TMIA's allegation concerning maintenance record keeping practices and to the Board question on that subject is TMIA's contention that Licensee has inadequate and understaffed QA/QC programs related to maintenance. TMIA Contention 5(b)(5).

326. TMIA did not file proposed findings directly on its issue of whether the TMI-1 QA/QC program is inadequate and understaffed. Considering the very large evidentiary record on GPU Nuclear's new and expanded Quality Assurance Department and its staff, we infer that TMIA is now satisfied with the program.²⁸ In any event TMIA is in default on the major thrust of its Contention 5(b)(5). In view of our extensive discussion of the Nuclear Assurance Division, the Quality Assurance Department and the TMI-1 on-site quality assurance staffing, there is no need to elaborate further on this aspect of TMIA's QA/QC subcontention. ¶¶ 107-115, *supra*.

327. TMIA asserts in Proposed Finding ¶ 24 that TMIA Ex. 12, a work request for important feedwater components, demonstrates that it took more than one year for a quality control sign-off and that, although QC indicated that it "wanted to observe the operation" it did not in fact indicate by signature that it had done so. Examination of the exhibit indicates to the Board that the legend "QC HOLD POINTS INDICATED" appears boldly on the face of the work request. These hold points are indicated on the attached procedures by large arrows marking the work to be observed by QC (e.g., page 5.0 of the set-up and adjustment procedure).

328. TMIA's proposed finding suggests that QC simply failed to observe the work or failed to note that the work had been observed. There is no place on the form for hold-point observations to be noted. TMIA ignores the evidence, adduced by its own counsel on cross-examination, that the normal procedure is for completed hold-point observations not to be entered upon the work request. Tr. 3484-85 (McGarry, Selkowitz). QC normally signs off at the final completion of the work. *Id.* In the case of TMIA Ex. 12, QC signed off four days after the Shift Foreman certified the work complete. *Id.* Although we cannot accept TMIA's proposed finding on TMIA Ex. 12 as an indication of a serious problem on the part

²⁸ Perhaps this is not a totally accurate inference from TMIA's silence. TMIA, without citation, urges the Board not to believe Mr. Arnold's testimony that Quality Assurance will now be dealing with functions important to safety (Arnold, ff. Tr. 11,434, at 20), because according to TMIA Mr. Arnold is not to be trusted generally on the subject of "safety-relatedness". TMIA PF ¶ 68.

of management attitude, we do find that, had there been an indication on Licensee's work requests that QC hold-points had been honored, the QC record auditability would be enhanced.

329. TMIA proposed finding ¶ 24 also points to TMIA Exhibits 20 and 31 as demonstrating extensive delay in quality assurance sign-offs on maintenance work. The Licensee concedes that the sign-off delays involved in the two work requests were "notable" (Licensee PF ¶ 106), but points to Staff and Licensee testimony that the method of quality assurance review represented by the exhibits neither violates Licensee's procedures nor represents any impact on plant safety, citing Licensee Ex. 29, at 20; Shovlin, *et al.*, ff. Tr. 13,533, at 75-77; Keimig and Haverkamp (TMIA 5, Table B), at 8 and 11; Keimig and Haverkamp (Sample Year 1978), ff. Tr. 16,412, at 11.

330. TMIA does not dispute nor refute this assertion so we infer from all of TMIA's findings on QA/QC that TMIA would have us find that the delayed sign-offs were caused by inadequate staffing as alleged in the subcontention. We are satisfied that the implicit allegation has now been mooted by the enlargement of the QA/QC program.

Extensive Use of Overtime in Performing Safety-Related Maintenance

331. TMIA's final allegation charges that Licensee has disregarded the importance of safety-related maintenance in safely operating a nuclear plant in that it extensively uses overtime in performing safety-related maintenance. TMI Contention 5(b)(6).

332. TMIA does not claim that overtime should not be used, but that it should be used with discretion and "should never be permitted at a nuclear power plant where the risk of carelessness due to fatigue is probable." TMIA PF ¶ 42. The record in general demonstrated to the Board, and it can be officially noticed that there is an inherent conflict with respect to staffing the maintenance and construction departments of this and, we believe, all nuclear plants. Much of the maintenance and modification work can be done only during refueling outages. To maintain a construction and maintenance staff with the capacity to perform all its duties during outages without overtime necessarily would mean that they would be idle during much of the normal operating times. It is generally recognized and accepted that extensive overtime is normal during outages. Some balancing is required.

333. Moreover as the Staff points out, it is important to note that the quality of work and, in some cases, the immediate safety of plant operations is enhanced by the use of overtime. This is particularly true for prompt corrective repairs of safety-related equipment. The maintenance work may be better if the same person or crew starts and completes the

repair because specific techniques are sometimes learned during the trouble shooting and disassembly of a component. Also, overtime may be particularly beneficial where certain specialized qualifications or talents are limited to only a few individuals, such as would be the case for certain welding operations or complex calibrations. Keimig and Haverkamp (TMIA 5), ff. Tr. 16,412, at 12.

334. TMIA concedes that normal working hours were adhered to during normal operations and that very long shifts, e.g., 34 and 40 hours straight, were unusual. TMIA PF ¶ 37.

335. We heard from TMIA's witness, Mr. Norman Reismiller who was once President and for many years a steward of the TMI International Brotherhood of Electrical Workers local. Tr. 4165 (Reismiller). He testified that during outages shifts of 12 hours a day, 7 days a week were normal and mandatory, that the company tried at the union's request a three nine-hour shift but abandoned that approach. Tr. 4166. Some employees asked to work more than 12 hours, some didn't want so much overtime. Tr. 4167, 4171. The union wanted a shift limit of 12 hours. The company instituted a policy of a 16-hour limitation except for special permission of the superintendent. Tr. 4169. Sometimes this condition was violated when the superintendent couldn't be reached. Tr. 4173. Mr. Reismiller never had to work longer than 12 hours on a strenuous job (Tr. 4174), and one time when he complained of illness, he was excused from overtime but a letter was placed into his file. Tr. 4177. He personally didn't like overtime (Tr. 4174) and he couldn't handle long working hours (Tr. 4178). He testified that the required overtime was too much for other employees too, but they would work them because they wanted the money. Others worked overtime in fear of a letter in their file. Tr. 4178.

336. We also heard from Mr. McCurdy, a shift maintenance foreman. He was selected at random by the Board from charts of employees' overtime hours prepared by TMIA in support of their position. Tr. 4138. See TMIA Ex. 44. Mr. McCurdy recognized that the hours were long but that the workers wanted overtime. Tr. 4140. Normal overtime during the outages called for a 12-hour shift but sometimes exceptions were necessary. Tr. 4141. He stated that an employee could take sick leave, but if they were not sick enough to stay home, i.e., just not "up to snuff", other employees would take up the slack because there was team work. Tr. 4144. He knows of only one person who consistently complained about overtime. Arrangements could be made for relief from overtime if made far enough in advance. Tr. 4145.

337. Mr. Eberle, another hourly employee, testified that overtime was first offered to those with the least hours, it was offered in advance, and employees were given an opportunity to let management know whether they were going to work overtime or not. He regarded overtime as purely voluntary. Tr. 3986.

338. It appeared to the Board that the issue of too much overtime was highly subjective. Mr. Reismiller didn't like it, and apparently enough employees objected to extremely long overtime hours to bring about union action. Mr. McCurdy was about neutral. Mr. Eberle liked overtime, or at least the wages from it, and his attitude was positive. He was probably incorrect in his opinion that it was entirely voluntary, in light of Mr. Reismiller's testimony about the union action. Tr. 4169, 4171-72; Tr. 4178-79. Licensee required overtime unless absence was prearranged. Shovlin, *et al.*, ff. Tr. 13,533, at 71.

339. Three witnesses, each with subjective views, are not enough to give a reliable overview of Licensee's overtime practices before the accident. However the Board cancelled its plan to call two other random witnesses on the subject because additional subjective testimony would not be helpful and because the showing by TMIA did not demonstrate a situation so serious as to require a *sua sponte* Board inquiry.

340. We could not determine from TMIA Ex. 44, which charted overtime from October 1977 through March 1978 for eleven employees selected by TMIA that overtime was used excessively. The chart demonstrated total hours, not overtime working conditions. *Id.* On long shifts, breaks were taken during the day, and a hot dinner break lasting for one to two hours was provided in the evening. Tr. 4143, 4140 (McCurdy); Shovlin, *et al.*, ff. Tr. 13,533, at 71-72 and Attachment 11; Tr. 3992 (Eberle).

341. Because of the highly subjective nature of the issue, the Board does not believe that the record presented to it by the rank and file employees and by Licensee's management demonstrates one way or another whether Licensee had a sound overtime policy. We are of course concerned about the effect of overtime on safety-related maintenance work, not about whether the overtime policy was in accordance with fair labor standards. With this in mind, we could identify no abuses, but we were concerned about the practice of going beyond the normal 12 hours on a shift up to 16 hours without the approval of the plant superintendent and the occasional practice referred to by Mr. Reismiller of exceeding 16 hours when the superintendent could not be reached.

342. Because of the intangible nature of the problem and record, we rely heavily upon the IE inspectors' report on this issue:

In our review of inspection reports for our testimony on "Auditability of Maintenance Practices in the Sample Year 1978 and Currently" and other inspections which reviewed maintenance related activities at TMI, if extensive overtime was used in the performance of safety-related maintenance work, we found no apparent basis on which to conclude that it adversely affected the quality of the work.

It should be noted that prior to the accident at TMI-2, the IE inspection program did not specifically require the inspection of the degree to which overtime was utilized to perform maintenance work. However, during the course of IE inspections of maintenance activities in progress, informal (and formal) interviews are conducted with all levels of the maintenance staff. Questions asked during these interviews include the following: are personnel familiar with the job procedures and any special requirements, are they following the procedure, are they qualified to do the work they are performing and so forth. These interviews also provide an opportunity to observe the mental and physical attitudes of the workers. If a worker is noted to be mentally or physically fatigued to the extent that his workmanship may be impaired, this observation would be brought immediately to management's attention with corrective action required.

Also, the quality of workmanship in performing maintenance is indicated by noting the maintenance history, i.e., down time vs. operating time on specific equipment. Recurrent problems on equipment which require out of service time for maintenance could be indicative of poor workmanship caused by mental or physical fatigue. Indications of abnormally repetitive maintenance are reviewed and followed by IE inspectors during routine inspections.

. . .

Our review of IE inspection reports and Mr. Haverkamp's observations of work in progress while an inspector at TMI gave no indication that the quality of maintenance was affected by the extensive use of overtime. These inspections included refueling outages when overtime, in fact, was used, with consideration given by plant management to the proper balance between productivity and safety of work activities as observed by the inspectors.

Subsequent to the TMI-2 Accident, the Licensee issued a memorandum in February 1980, concerning working hours in response to NRC IE Circular 80-02. The memo establishes a new

policy concerning working hours within the operations and maintenance departments; and requires Plant Manager (Director) Unit 1 approval, with documentation of the reason, for deviation from the guidelines. The working hours guidelines apply to supervisors and union personnel. Interviews during MA Inspection 50-289/80-21 revealed that the policy had been implemented. The scheduling of maintenance (plan of the day and outage coordination) and the provision of on-shift maintenance, coupled with an increased staff, have improved the maintenance department response to the outstanding work items within normal working hours.

Keimig and Haverkamp (TMIA 5), ff. Tr. 16,412, at 11-13.

343. While the record in this proceeding does not demonstrate that overtime policy in NRC IE Circular 80-02 is required, it is, we believe, a prudent policy. TMIA alleges that Licensee's overtime practice and policy (before the new IE policy was adopted) demonstrates that top management put profits ahead of safety; that therefore it is significant because it shows inherently bad management. TMIA PF ¶ 42. The record does not support TMIA's conclusion. Mr. Reismiller's testimony about his conference with Mr. Arnold on overtime does not, as alleged by TMIA, support such an inference. Tr. 4171-72, 4178-79. Therefore the overtime issue raised by TMIA, even if valid during the period in question, has been mooted by the policy set out in IE Circular 80-02.

344. TMIA raised late in the hearing a subissue in which Licensee is faulted for a pattern of underestimating the time and men needed for particular tasks on the corrective maintenance work request forms. TMIA PF ¶¶ 26-32. TMIA points to several work requests which seem to indicate a pattern of underestimating the man-hours required for the respective corrective maintenance job. TMIA PF ¶ 28. Licensee recognizes that the estimates are inclined to be low. Licensee Reply Finding ¶ 18.

345. We believe that the Licensee's explanation is logical. Licensee has not yet developed complete statistical bases for predicting corrective maintenance work at TMI-1. Tr. 13,553, 13,565, 13,567 (Dyckman); Tr. 13,575-76 (Snyder); Tr. 13,548-49 (Shovlin). Where Licensee has a history on a particular job, the time required for it can be accurately predicted. Tr. 13,575 (Snyder). Without a data base, the predictions are not reliable; Licensee does not build in a precise factor for unforeseen delays. Tr. 13,581-85 (Shovlin, Dyckman, Snyder). However the specific variables on a particular job are considered in estimating the time required. Tr. 13,576 (Dyckman).

346. TMIA argues about how useful it believes accurate man-hour estimates might be but does not offer a conclusion as to the effect of the perceived problem on safety-related maintenance. TMIA PF ¶¶ 26-32. We infer that TMIA has two concerns. Underestimations might result in unplanned overtime. This may be the case, but TMIA has lost on its overtime subcontention. The record did not establish any adverse effect from overtime upon safety-related maintenance.

347. TMIA seems to be arguing that man-hour estimates should be used as the historical basis for staffing. Perhaps this could be the case in the short term but there is no evidence that short-term understaffing has resulted from inaccurate man-hour estimates. As for long-term staffing, Licensee's witnesses Shovlin and Dyckman pointed out that the work backlog, not the estimation history is the most accurate indicator of staffing needs, and that the maintenance work backlog is decreasing, not increasing. Therefore their staffing predictions have been accurate. Tr. 13,581-83. The Board believes that man-hour estimation issue is unimportant. In any event, if a problem existed, it is being corrected as Licensee develops its historical data base. Tr. 13,533-56, 13,574, 13,577 (Dyckman).

348. In summary, the Board finds that contrary to TMIA Contention 5, Licensee has not deferred safety-related maintenance and repair either beyond the point established by its own procedures or otherwise improperly. We find further that Licensee has not disregarded the importance of safety-related maintenance in safely operating a nuclear plant by proposing a drastic cut in the maintenance budget or by extensively using overtime in performing safety-related maintenance. Finally, although we have noted some defects in Licensee's record keeping practices above, the extensive changes in Licensee's safety-related record keeping program and in its QA/QC programs related to maintenance has resulted and should continue to result in substantial improvements. Licensee's course of conduct, considering the improvements noted, does not, as alleged by TMIA Contention 5, demonstrate that Licensee is not technically qualified to operate TMI-1 without endangering the health and safety of the public.

E. Views of NRC Inspectors

349. CLI-80-5, Issue (3), states:

- (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.

350. Above we have discussed the opinions of the NRC staff from the Offices of Nuclear Reactor Regulation (NRR) and Inspection and Enforcement (IE) concerning Licensee's off-site management structure (§§ 60, 64, *supra*), on-site structure and resources (§ 70, *supra*), and their views of the qualifications of the individual managers (§ 122, *supra*). Below, in the next section on CLI-80-5 issue (4) we discuss the Staff's special investigations into the TMI-1 health physics program and the Staff's view concerning Licensee attention to perceived weaknesses. Also below, under CLI-80-5 issue (10) (management response to the accident), we discuss the record in this proceeding concerning the IE Investigation Into the Information Flow During the Accident at Three Mile Island, NUREG-0760 (Staff Ex. 5), and the views of IE inspectors resulting from that investigation.

351. In this section to comply with the Commission's directions on issue (3), we review the views of IE inspectors arising from their broader, more routine inspections of Licensee's operations. We have relied very heavily upon the Staff's proposed findings on this issue (Staff PF §§ 75-83) because they accurately summarize the Staff's own views, and because we regard the Staff's commitments set forth in its proposed findings as important and officially binding.

352. The inspectors' views of the quality of Licensee's management are discussed by the Staff in its proposed findings, and by the Board below frequently in the context of particular strengths, weaknesses, deficiencies, open items and similar nuclear regulatory concepts. The purpose of this section is to summarize the inspectors' views and supporting reasons. We do not in this section deal substantively with the issues which have influenced their views. No other party presented evidence on Issue (3) as it deals exclusively with views of NRC inspectors.

353. The Staff's position on the subject is contained principally in NUREG-0680, Supplement 1 (Staff Ex. 4), Sections III.B.5 and III.I. Based on its review, the Staff concluded that: "The pervasion of management's positive commitment to safe operation at all levels of supervision and performance of licensed operations is expected and will be closely monitored by IE during the conduct of the TMI-1 Restart Inspection Program." Staff Ex. 4, at 24.

354. Since the accident at TMI-2, IE has undertaken investigations into the operational, radiological, and emergency response actions of the licensee during the accident, the implementation of the Quality Assurance/Quality Control Program, the implementation of the Physical Security Plan and the cold shutdown operations at TMI-1. *Id.*, at 14-15. These inspections were essentially compliance oriented. *Id.*, at 14. In addition, three special inspections were conducted in July and August 1980 to appraise and evaluate the status and adequacy of the licensee's im-

plementation of certain management control systems and programs. *Id.*, at 15. These inspections included a management appraisal by the IE Program Appraisal Branch (PAB), a health physics evaluation by the Region I and Headquarters Staffs, and a "near-term operating license" (NTOL) review by the Regional and Headquarters Staffs. The special inspections were evaluative and forward-looking in nature and were conducted to determine what actions the licensee should take prior to restart to conform to assumed NRC requirements of a "model" operating reactor, to certain requirements soon to be in effect, and to requirements being imposed on NTOL facilities. *Id.*, at 15.

355. Appendix B in NUREG-0680, Supplement 1 (Staff Ex. 4) provides the scope and findings of the special inspections conducted during July and August 1980. The first inspection (Inspection 50-289/80-19), held on July 23-25, 1980, included utility management and technical competence in the areas of shift technical advisors, staffing for startup testing program, on-site technical support center, on-site operational support center, independent safety reviews, off-site and on-site staffing, dissemination of operating experiences, and communications with NRC. *Id.*, at 1. No items of noncompliance were found and no unresolved items were identified. *Id.* Twelve items, however, remained open at the conclusion of the inspection. *Id.*, at 1-2. The Licensee's actions regarding these open items will be reviewed during subsequent NRC inspections prior to TMI-1 restart. *Id.*, at 2.

356. Inspection 50-289/80-21, a Management Appraisal of PAB inspection, was conducted on July 7-11, 14-18, 27-31, and August 1, 1980 by the Program Appraisal Branch. *Id.*, at 5. The PAB inspection methodology serves to identify problems of a generic nature and is structured to examine the Licensee's management controls over selected functional areas. *Id.*, at 3. Of the eleven areas inspected, the Quality Assurance Program received a highest rating of "good". *Id.*, at 6. All other areas were judged to be "average" on a national perspective with the exception of a portion of the training area (dealing with non-licensed personnel), which was evaluated as "poor". *Id.*, at 6. Additional significant weaknesses were found and potential enforcement items were also identified in the Management Appraisal inspection. *Id.*, at 6-8.

357. The Licensee responded to the non-compliances and significant weaknesses identified in the management appraisal (and health physics) evaluation; those responses were evaluated by the IE staff and were considered acceptable. Staff Ex. 13, at 5. The Licensee's reported corrective actions, either taken or planned, include implementation of a Plant Operations Review Committee Charter; development and implementation of a Training Department Administrative Manual; and definition of the Nuclear Assurance Division and the Radiological and Environmental Con-

trols Division organization structures, responsibilities, and functions. *Id.*, at 5. The Staff concludes that these corrective measures, when fully implemented, are sufficient to resolve the management concerns identified during past IE inspections. *Id.*, at 5.

358. Richard R. Keimig has been serving as the Region I coordinator for IE activities related to TMI-1. Keimig, ff. Tr. 11,946, at 1. In his testimony on ANGRY Contention 4 (Licensee's general management capability), he provided an overview of the IE inspectors' views on Licensee's management quality as revealed by recent performance:

The licensee has made and continues to make a sincere effort to correct prior deficiencies in the operation of TMI-1. The commitments and changes already made and those proposed by the licensee for the restart and future operation of TMI-1 are diverse and significant. The organization changes made at the corporate and plant level provide an appreciably strengthened management capability. Also the introduction of new personnel with varied backgrounds and experience into the organization, at all levels, complements the new organization and increases its technical competence.

Likewise, corrective actions taken and those planned and documented by the licensee relative to previous items of noncompliance cited by NRC, as well as other program changes resulting from licensee and NRC reviews and investigation following the accident, should enable the licensee to operate TMI-1 in a safe manner. Based upon the licensee's commitments for corrective actions and changes in the organization, policies, programs and procedures, and upon full implementations of these commitments, it appears that the licensee will be capable of operating a nuclear power plant safely and with due regard to public health and safety. However, the Staff will continue to review these matters, inspect implementation on a schedule consistent with the licensee's proposed restart date and monitor the effectiveness of the changes and their interaction with each other.

Id., at 15-16.

359. The NRC Staff (PF ¶ 83) urges us to find, and we do find that the NRC inspectors believe the Licensee to be capable of properly managing and safely operating TMI Unit 1. CLI-80-5 issue (3).

F. Health Physics

360. CLI-80-5 issue (4) asks:

- (4) whether the Unit 1 Health Physics program is appropriately organized and staffed with qualified individuals to ensure the safe operation of the facility.

361. In the area of health physics, witnesses were presented by the Licensee and by the Staff. Intervenors did not present witnesses or conduct cross-examination, nor did they file proposed findings. The Board, however, on its own conducted extensive examination of both Licensee and Staff witnesses.

362. Licensee's witnesses consisted of a panel of five individuals from Licensee's organization, and separately an independent consultant and one of Licensee's General Employee Training (GET) instructors. The panel was comprised of Richard Heward, William Potts, Ronald Knief, Jesse Brasher and Richard Dubiel. See Heward, *et al.*, ff. Tr. 16,292. Mr. Heward is the Vice President of GPU Nuclear Corporation for Radiological Environmental Controls. Mr. Potts is the Manager of Radiological Controls of TMI-1. Their professional qualifications are discussed above at ¶¶ 145-146, *supra*. Dr. Knief is head of training at TMI-1. *Id.*, at 3. Mr. Brasher is Director of Radiological Controls at TMI-2. *Id.*, attached qualifications of J. W. Brasher. Mr. Dubiel, head of the TMI-1 Radiological Engineering group in Mr. Potts' organization, holds a B.S. in physics and an M.S. in nuclear energy. He has about ten years of experience in radiation protection, eight of those at TMI. Broughton, *et al.* (Instrument Ranges (In Plant)), ff. Tr. 7509, attached qualifications of Richard W. Dubiel. The other Licensee witness who appeared at the Board's request was one of Licensee's instructors, Ms. Sheila McAlister. See Tr. 16,392-404 (McAlister). Ms. McAlister, who teaches GET courses, holds a B.S. degree, has a year of secondary teaching experience and worked as an HP technician at Surry Nuclear Power Plant and at TMI for two years before joining GPU's training staff. Tr. 16,392-93 (McAlister).

363. Licensee's consultant witness was Mr. Murray Miles of Basic Energy Technology Associates, Inc. (BETA). See *generally*, Wegner, ff. Tr. 13,284; Tr. 13,293-99, 16,378-91 (Miles). Mr. Miles has more than 25 years of health physics experience. Wegner, ff. Tr. 13,284, Attachment 1, at 1-2. He has a degree in engineering physics and from 1955 through 1979 was a member of DOE's Naval Reactors program, the last thirteen years as Associate Director for Nuclear Technology. In that position, he was responsible to Admiral Rickover for establishing and monitoring radiological control procedures, and he developed the procedures and methods now followed in the naval program to control radioactive dis-

charge and radiation exposure. *Id.*; Tr. 13,293 (Miles). His reports and methods have become worldwide standards. Wegner, ff. Tr. 13,284, Attachment 1, at 2. He has personally conducted more than 200 inspections of radiological controls at various facilities. Tr. 13,293 (Miles). Since October of 1979, he has been actively involved in evaluating GPU's radiological controls organization and procedures. In January 1981 BETA performed an independent review of the TMI-1 health physics program for the Licensee. Wegner, ff. Tr. 13,284, at 26-28. This assessment supports the conclusions that the TMI-1 health physics program is appropriately organized and staffed with qualified individuals to assure the safe operation of the facility. Wegner, ff. Tr. 13,284, at 27. BETA found management personnel to be knowledgeable, interested, and actively involved in the radiological control program. Wegner, ff. Tr. 13,284, at 27. Representatives of BETA further testified that there were no weaknesses in the TMI-1 health physics program that need to be corrected prior to restart. Tr. 16,379 (Miles).

364. The Staff's witness on health physics was Mr. Donald Neely, an inspection specialist in the Performance Appraisal Section of NRC IE's Division of Program Development and Appraisal. Neely, ff. Tr. 16,450, at 1. *See generally* Tr. 16,448-65 and 20,663-86 (Neely). Mr. Neely has been involved in health physics for about 20 years, having been employed by General Electric in providing radiation protection services, by Chem-Nuclear Systems as a supervisor and instructor of health physics technicians, and since joining NRC as an inspector of NRC-licensee health physics programs. Neely, ff. Tr. 16,450, Attached Professional Qualifications.

365. The objectives of the TMI Radiological Program are to control radiation exposures, to avoid accidental radiation exposures, to maintain exposures within the regulatory requirements and to keep exposures to workers and to the general population as low as is reasonably achievable (ALARA). Heward, *et al.*, ff. Tr. 16,292, at 4. To meet these objectives, Licensee's Radiological Controls department has been reorganized, staffing at TMI-1 has been increased from approximately 9 to 79, and the TMI-1 Radiation Protection Plan and implementing procedures have been rewritten. *Id.*; Wegner, ff. Tr. 13,284, at 19-20, 23, 26. TMI-1's radiological control organization, headed by the Manager, Mr. Potts, reports not through the operational chain but directly to the Vice President (Mr. Heward) of Radiological and Environmental Controls (*see* Arnold, ff. Tr. 11,434, at 13-14), an organizational structure which allows independence, but maintains close coordination with plant management. Heward, *et al.*, ff. Tr. 16,292, at 4-5; Wegner, ff. Tr. 13,284, at 20-22.

366. The revised TMI-1 Radiation Protection Plan was found by the Staff to be acceptable in that the provisions described and commitments made were satisfactory and in conformance with applicable regulatory requirements. Staff Ex. 1, at C6-17 through C6-23. The nine articles in the Plan are as follows:

Article 1, Foundation for the TMI Radiological Controls Program, describes Licensee's philosophies, policies, and objectives regarding the radiological controls program, including commitments to implement a radiation protection program in accordance with Regulatory Guide 8.8 (Information Relevant to Insuring that Occupational Radiation Exposures at Nuclear Power Stations Will be As Low As Reasonably Achievable) and Regulatory Guide 8.10 (Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As Is Reasonably Achievable).

Article 2, Responsibilities of Workers, identifies specific rules to be followed by individuals working in restricted areas in order to minimize radiological problems.

Article 3, Audits, Reviews and Reports on the TMI Radiological Controls Program, identifies nine levels of audits, reviews, and reports to assure that individuals and supervisors who are responsible for maintaining occupational radiation exposures as low as is reasonably achievable are meeting that requirement and are assisting others in understanding and complying with that requirement, including Licensee's commitment to a policy for corrective action.

Article 4, Radiological Training, describes the training program which assures that each person understands radiation risks, radiological conditions to be encountered, personal responsibility to maintain exposure to levels as low as is reasonably achievable, and the need to comply with radiological control procedures.

Article 5, Control of External Exposure, reaffirms the Licensee's commitment to maintain occupational radiation exposure, both individually and collectively, to levels as low as is reasonably achievable and describes exposure control policies and requirements addressed to that goal.

Article 6, Control of Internal Exposure, describes the Licensee's policy on an internal control program intended to prevent any significant internal exposure to personnel such that no individual

shall receive more than one-tenth of the permitted annual intake of radioactive materials.

Article 7, Control of Radioactive Contamination, states an intent to minimize possible inhalation or ingestion of radioactivity and buildup of radioactivity in the environment, to simplify subsequent decontamination, and to minimize the need to rely on anticontamination clothing, as well as the importance of training in assuring success in this program.

Article 8, Control of Radioactive Materials, describes a system for radioactive material control to assure that such material is not lost or misplaced so as to cause inadvertent occupational exposures and to prevent uncontrolled spread of such materials to areas where the public might be affected.

Article 9, Organization for Radiological Controls, describes the Radiological Controls Department staff and the responsibility of the Manager of Radiological Controls for establishing and maintaining a high quality radiological control program, for evaluating radiological conditions, and for recommending precautionary measures.

Staff Ex. 1, at C6-17 through C6-23.

367. In regard to Article 9, to assure that personnel radiation exposures are maintained as low as is reasonably achievable, each engineer involved with TMI-1 has responsibility for radiological engineering as part of work assignments. Staff Ex. 1, at C6-23. As a result, most radiological engineering functions are performed in engineering groups rather than in the Radiological Controls Department. *Id.* Overall coordination of the TMI-1 ALARA program, however, is assigned to Radiological Engineering in the Radiological Controls Department. *Id.* This Radiological Engineering Group consists of two Met Ed radiological engineers and five contract radiological engineers. *Id.*

368. The TMI-1 Radiological Controls Department, under its Manager and a Deputy, has three groups: a Radiological Engineering group, a Radiological Technicians group, and an Administrative group. Heward, *et al.*, ff. Tr. 16,292, at 5, Attachment 1 (organization chart). The Radiological Engineering group (under Mr. Dubiel) has about six engineers, in comparison to the single engineer formerly available to TMI-1, *Id.*; Wegner, ff. Tr. 13,284, at 22-23. The radiological engineers are responsible for anticipating and solving technical radiological controls problems; planning and development of the Radiological Controls Program; providing technical support to the TMI-1 organization; and assessing the performance of the

radiological controls organization to ensure continuous improvement in the Program. Heward, *et al.*, ff. Tr. 16,292, at 5. The Radiological Technicians group consists of a Manager, six foremen, and 30 technicians, an increase by a factor of about four over just the past year. Heward, *et al.*, ff. Tr. 16,292, at 5; Wegner, ff. Tr. 13,284, at 23-24. These technicians provide around the clock coverage of radiological work. The Administrative group performs most administrative and clerical work, maximizing the time available for the engineers and field group to perform their functions. Heward, *et al.*, ff. Tr. 16,292, at 5-6. In Mr. Miles' opinion, which we accept, the organization is larger with more talent than at most other commercial licensed nuclear power plants and displays heavy management commitment to high standards of radiological controls. Tr. 16,379 (Miles). See also Wegner, ff. Tr. 13,284, at 19, 27-28.

369. The operational readiness of the TMI-1 Radiological Controls Department has been tested in that the most challenging periods for radiological control are during shutdown when most radioactive work is performed. Heward, *et al.*, ff. Tr. 16,292, at 10-11; Wegner, ff. Tr. 13,284, at 26. In 1980, over 13,000 Radiation Work Permits were issued at TMI-1; total manrem exposure was 201, significantly below the projected total of 320. A number of complex jobs were safely and successfully performed on radioactive systems in relatively high radiation areas. Heward, *et al.*, ff. Tr. 16,292, at 10-11; Wegner, ff. Tr. 13,284, at 23, 26. The highest individual occupational exposure for 1980 was 1.005 rem, which is less than 10% of the NRC allowable exposure; no individual working in TMI-1 received more than one percent of the limits established for internally deposited radioactivity. Heward, *et al.*, ff. Tr. 16,292, at 10-11. Licensee has also instituted successfully a major effort to reduce radwaste volumes at TMI-1 and to clean up contaminated areas of the plant. Heward, *et al.*, ff. Tr. 16,292, at 11; Wegner, ff. Tr. 13,284, at 25-26; Tr. 16,388-91 (Miles).

370. During the period from July 28 to August 8, 1980, the Staff conducted an evaluation of the health physics program at TMI, specific to the restart of Unit 1. Staff Ex. 4, at 22. The results of the evaluation were issued as Inspection Report 50-289/80-22. *Id.*, at 100. The objective of this health physics appraisal was to evaluate the overall adequacy and effectiveness of the total health physics program, including the health physics aspect of radioactive waste management and on-site emergency preparedness, and to identify areas of weakness that need to be strengthened. *Id.*, Appendix B, at 15. The TMI evaluation also (1) reviewed the Licensee's actions to correct the items of noncompliance as a result of IE's investigation into the TMI-2 accident and (2) verified the Licensee's implementation of recommendations contained in NUREG-0578. *Id.* The evaluation team consisted of four inspectors from NRC Region I and two

individuals from NRC Headquarters. *Id.*, Appendix B, at 16. This team observed work practices, reviewed selected procedures and records, and interviewed GPU Nuclear Group personnel and contractors. *Id.*

371. In its Inspection Report, the Staff described the significant weaknesses it found in the areas of (1) organization, responsibilities, staffing, and management oversight; (2) exposure control; (3) radioactive waste management; and (4) emergency plan implementation. *Id.*, Appendix B, at 20-28. The Staff also identified noncompliances: (1) certain respiratory protection procedures were not maintained and implemented, (2) the respiratory protection program was not being audited, (3) the quality assurance criteria for shipping packages for radioactive material were not met, (4) no PORC-reviewed and Unit Superintendent-approved whole body counter and laboratory counting equipment procedures were in use, and (5) the Licensee had not determined if appropriate extremity monitoring devices were being supplied. *Id.*, Appendix B, at 29-33.

372. The Staff evaluated the Licensee's response to the significant findings and items of noncompliance specified in the Inspection Report. Staff Ex. 13, at 7; Neely, ff. Tr. 15,450, at 5. The Staff concluded that no outstanding issues remained regarding the management and technical controls staff. Staff Ex. 13, at 7; Tr. 16,452 (Neely). The corrective actions, either taken or planned by the Licensee, were sufficient to resolve the management concerns identified in past IE inspections. Staff Ex. 13, at 5; Neely, ff. Tr. 16,450, at 5; Tr. 16,463 (Neely).

373. Initially, the Staff was prepared to find Licensee's program adequate based on Licensee's commitments to correct NRC's identified weaknesses and the Staff's commitment to the Board to review implementation of the corrections prior to restart; however, the Board believed it needed more assurances. Tr. 16,459-60 (Little); Tr. 16,461-62 (Smith). With the Board's encouragement, the Staff conducted a follow-up inspection in April 1981 of the deficiencies previously identified to verify Licensee's implementation of corrective actions. See Neely (Memorandum), ff. Tr. 20,572. Even though most of Licensee's corrective actions are not scheduled for completion until late May or August of 1981 (Neely, ff. Tr. 16,450, Attachment G; Heward, *et al.*, ff. Tr. 16,292, Attachment 2), the results of this NRC inspection were important to the Board's ultimate confidence in Licensee's Radiological Controls Program. See Neely (Memorandum), ff. Tr. 20,572. The Staff concentrated on areas such as organizational relationships and staffing, bioassay program, exposure control, personnel dosimetry, and radwaste management at TMI-1 which the Board had identified as particularly important. At the same time, they examined Licensee's corrective actions with respect to items of noncompliance previously identified by the Staff in its inspection conducted immediately following the accident at TMI-2 and reported in NUREG-0600

in 1979. *Id.* The results of the Staff's April 1981 inspection were provided to the Board by Mr. Neely, whom the Board questioned on virtually every item. Tr. 20,663-86 (Neely). Out of the thirteen open items related to organization, the Staff closed out seven in April. They did not have time to complete inspection on four of the thirteen items, and only two remained for further discussion with Licensee. *Id.*, Attachment A, at 1-2; Tr. 20,663-71 (Neely). Of the eleven weaknesses related to exposure control earlier identified by the Staff, nine were completely resolved, one awaited solely confirmatory measurement by the Staff, leaving only one which required further discussion with Licensee. *Id.*, Attachment A, at 2-3; Tr. 20,671-76 (Neely). In the area of radioactive waste management, all items previously identified as open were found to have been corrected. *Id.*, Attachment A, at 3; Tr. 20,676-77 (Neely). Mr. Neely did not foresee problems closing out the few remaining open items; in fact, he anticipated that the organizational items would all be closed out in about a week. Tr. 20,671, 20,674, 20,678-79 (Neely). As for the NUREG-0600 items from the 1979 inspection, every item examined by the Staff was closed out, and Licensee reported it was ready to be inspected on all other items. *Id.*, Attachment B.

374. Based on the foregoing, the Staff concluded that the Licensee's radiological control program is adequate to support the restart of Unit 1. Neely, ff. Tr. 20,572, at 1.

375. The Board commends the extensive efforts by Licensee and Staff to timely address before the close of the evidentiary record the Board's concerns on the status of the health physics organization at TMI-1.

376. The Board finds that the Licensee has established an adequate radiological control organization which is guided by a comprehensive Radiation Protection Plan. Further, the Radiological Controls Department at TMI-1 is staffed with sufficient, adequately trained and qualified personnel to ensure effective implementation of the plan. Thus, the Board concludes that the Unit 1 health physics program is appropriately organized and staffed with qualified individuals to ensure the safe operation of the facility.

G. Radwaste

377. CLI-80-5 issue (5) directs the Board to examine:

- (5) whether the Unit 1 Radiation Waste system is appropriately staffed with qualified individuals to ensure the safe operation of the facility.

378. Issue (5) was addressed in testimony by Licensee (Hukill, *et al.*, ff. Tr. 11,617; Newton and Ross, ff. Tr. 12,140; Wegner, ff. Tr. 13,284) and by the Staff in NUREG-0680, Supplement 1 (Staff Ex. 4), Section III.I and in NUREG-0680, Supplement 2 (Staff Ex. 13), Section II.I. The Commonwealth of Pennsylvania, the Consumer Advocate, ANGRY and the Aamodts participated in cross-examination but no other direct testimony was presented.

379. Day-to-day management of radioactive wastes, including their collection, decontamination, packaging, and shipping or other disposition, is the responsibility of the TMI-1 Radwaste group. ¶ 85, *supra*; Hukill, *et al.*, ff. Tr. 11,617, at 24; Staff Ex. 4, at 25.

380. Since March 1979, the TMI-1 Radwaste organization has changed significantly. Prior to the TMI-2 accident, radwaste activities were part of the TMI health physics program; consequently, there was no group specifically charged with minimizing the quantity of radwaste at Unit 1 or for managing the radwaste generated. Currently, however, individuals working under the direction of the Supervisor of Radwaste are designated TMI-1 Radwaste Staff and are dedicated solely and on a full-time basis to Unit 1 activities. Hukill, *et al.*, ff. Tr. 11,617, at 24-25. In addition to strengthening the resources dedicated to radwaste management, this organizational change improves control of radwaste because radiological control personnel review the radiological aspects of radwaste processing. Wegner, ff. Tr. 13,284, at 28.

381. As we noted above in our discussion on Licensee's Managers, Mr. Fuhrer, the Supervisor of Radwaste, has a B.S. degree in chemical engineering and worked at TMI as a radwaste engineer prior to assuming his current position. Hukill, *et al.*, ff. Tr. 11,617, at 26. He is assessed by a radwaste engineer who has a B. S. degree in civil engineering and four years of engineering experience, two of which were in decontamination and decommissioning of formerly utilized AEC sites and facilities. Licensee's Ex. 57. One of the goals of the Radwaste Supervisor is development of a rotating decontamination system to insure maintenance of protected and vital areas in as clean and radioactivity-free an environment as possible. Hukill, *et al.*, ff. Tr. 11,617, at 25.

382. The Radwaste Supervisor reports to the Manager of Plant Operations, with whom he meets several times a week to coordinate activities of radwaste personnel with needs of the operating and maintenance staff. *Id.*, at 25. Reporting to the Radwaste Supervisor are three radwaste foremen who direct laborers, utility workers, and, at times, auxiliary operators in the performance of radioactive waste activities. *Id.*, at 26; Staff Ex. 4, at 25.

383. After waste is packaged for shipment, all Unit 1 and Unit 2 shipments are reviewed and approved by the Unit 2 radwaste process support group. Staff Ex. 4, at 25. Packaging of Unit 1 radioactive waste material requiring a licensed container is the responsibility of the Unit 1 radwaste process support group. A qualified Unit 2 solid waste and disposal supervisor is responsible for all radioactive wastes being shipped off-site in accordance with applicable requirements. *Id.* The radwaste engineer writes procedures and performs trouble-shooting when problems arise which require immediate evaluation. Hukill, *et al.*, ff. Tr. 11,617, at 26; Wegner, ff. Tr. 13,284, at 28. Routine day-to-day operation of the waste systems is performed by auxiliary operators who report to the Operations Shift Foreman (on duty), who in turn reports to the Operations Shift Supervisor. Staff Ex. 4, at 25. The training program for the auxiliary operators was reviewed by the IE Performance Appraisal Branch in its PAB inspection (50-289/80-21) and found to be adequate. *Id.*

384. In addition, the evaluation of the health physics program at TMI-1 (Inspection 50-289/80-22) included an evaluation of the Unit 1 Radioactive Waste Management Program in regard to assignment of program responsibility; waste processing systems (liquid, gaseous, solid); effluent/process instrumentation; organization and staffing; and personnel training and qualifications. *Id.*, at 24-25. Based on its review, the Staff concluded that the Radioactive Waste Management Program of Unit 1 is appropriately organized and staffed with qualified personnel in accordance with NRC guidance (NUREG)-0731 and Regulatory Guide 1.8) and ANSI standards (ANSI/18.1-1971). *Id.*, at 26. The Staff found, however, that the interface between the Unit 1 and 2 radioactive waste organization and the training and retraining program for non-licensed personnel were not documented. *Id.* The Licensee's response to the Inspection Report explained corrective actions either taken or planned which included interfaces and radwaste training/retraining programs for TMI-1 and 2. Staff Ex. 13, at 8. The Staff concluded that these corrective measures — when fully implemented — were sufficient to resolve the previous significant weaknesses. *Id.* An independent assessment conducted by BETA, Inc. for GPU/Met Ed also concluded that TMI-1 is appropriately staffed with personnel qualified to process radioactive waste safely. Wegner, ff. Tr. 13,284, at 29. During the special April 1981 health physics inspection (¶ 373, *supra*), in the area of radwaste management all items were found to have been corrected. Neely, ff. Tr. 20,572, Attachment A, at 3; Tr. 20,676-77 (Neely).

385. The intervenors did not elicit any evidence during their brief examination which would indicate that the radioactive waste system is inappropriately staffed.

386. Based on the findings of the Staff and on the BETA assessment, the Board is satisfied with Licensee's radioactive waste program and organization.

H. Financial/Technical Interface

387. CLI-80-5 issue (6) asks:

- (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.

388. Although issue (6) seems to limit the question to Metropolitan Edison Company, such limitation does not accurately reflect financial considerations relevant to TMI-1. The Licensee properly presented the issue in the larger context of the GPU system. The Staff's showing is very simple. NUREG-0680, Supp 1, Staff Ex. 4, at 26-27. Neither the Commonwealth of Pennsylvania nor any intervenor presented evidence or proposed findings on this issue. We regard this subject of the financial/technical interface to be an uncontested matter.²⁹

389. The only evidentiary presentation by the NRC Staff was in the SER Supplement on management issues, NUREG-0680, Supp. 1 (Staff Ex. 4, at 26-27). The Staff recognizes that there cannot be a complete division between financial and technical considerations but believes that no problem is presented here because: (1) Mr. Arnold, who is also Senior Vice President of Met Ed, heads the GPU Nuclear Organization where technical decisions are made; (2) within Met Ed financial decisions are made by Mr. Condon, Vice President of Finance; (3) both Messrs. Arnold

²⁹ Counsel for the Consumer Advocate of Pennsylvania, in his only evidentiary participation, cross-examined Mr. Dieckamp on this issue extensively. Since the Consumer Advocate did not file proposed findings we infer that Mr. Dieckamp's responses were satisfactory to him. We could not discern from the cross-examination any indication to the contrary. Tr. 13,438-73. We understand the purpose of ANGRY's cross-examination of Mr. Dieckamp was to seek general assurances that there was a proper balancing between financial and safety considerations. Tr. 13,473; 13,499. Mr. Aamodt cross-examined Mr. Dieckamp on the availability of GPU resources for certain safety projects of interest to the Aamodt family. Tr. 13,500-10.

and Condon report to Mr. Dieckamp, Acting President of Met Ed; (4) thus there should be no financial/technical conflict below Mr. Dieckamp's level. *Id.* For a Commission mandated issue, this is not adequately helpful, and it is not entirely correct.

390. More importantly, the Staff does make it clear that it is not aware of any instances where financial decisions have had an improper impact on technical decisions regarding the TMI-1 startup, nor was there any indication of undue influence of financial considerations on TMI operation before the accident. Staff Ex. 4, at 26. Moreover, the Staff is confident that if the NRC technical staff felt there were a serious deficiency of the plant that needed to be corrected and the funds to correct the deficiencies were not available, then the plant would be put in a safe condition pending the necessary actions. Tr. 12,057 (Crocker). The Licensee is emphasizing the safety aspects of plant operations and any decisions that would have to be made on financial considerations would also account for plant safety. Tr. 12,058 (Crocker). The Staff believes that, while financial matters do influence the actions of the utility, the emphasis on safety is such that there is not an undue financial influence. *Id.*

391. The Licensee presented the testimony of Mr. Herman Dieckamp, President and chief executive officer of GPU and Chairman of the Board of GPU Nuclear Corporation. Dieckamp, ff. Tr. 13,437. In sum, Mr. Dieckamp expressed the view that there is not necessarily a conflict between safety and financial considerations and that other factors place safety over economics. He explained the budgeting process and testified that GPU commits large amounts of resources to safety compared to the industry. *Id. passim.*

392. Mr. Dieckamp stated that safe operation of nuclear facilities is very demanding of resources. The rapid escalation in the price of oil has resulted in a large differential in cost between nuclear fuel and replacement power. The overall economic incentives are to provide the resources necessary to ensure operability of the nuclear facilities. In Mr. Dieckamp's view, since operability and safety are directly linked through reliability and through regulation, the economic incentives are supportive of safety, not necessarily competitive with safety. Dieckamp, ff. Tr. 13,437, at 1-2.

393. According to Mr. Dieckamp, even if the financial incentive for safety were absent, GPU would subscribe to the view that safety takes precedence over economics by virtue of the overriding requirement to protect the health and safety of the workers and the public, to satisfy

regulatory requirements, and to constrain operation within the limits of the nuclear plants' technical specifications. Mr. Dieckamp stated that it is the obligation of management to reinforce the preeminence of safety, not only through the allocation of resources, but also by its practices and policies. *Id.*, at 2.

394. Mr. Dieckamp explained that the budgeting process begins at the plant sites, within the various technical organizations, which are assigned the responsibility of identifying the work effort and the physical modifications necessary for safe operation of the facility, e.g., TMI-1. The resulting task list is the basis for manpower requirements, materials or contractor support to operations and estimates for the cost of plant modifications. These composite requirements are reviewed by the management of GPU Nuclear Corporation to ensure completeness, priority, and planning adequacy. With the resulting definition of required manpower, materials, and plant modifications, GPU Nuclear seeks authorization from the plant owners for the financial resources necessary to support safe operation. This latter process formerly took place within each board of directors of the plants' owning companies after review by the operating utility and GPU corporate management. However, as part of the extensive organizational changes associated with the formation of the GPU Nuclear Corporation, the budget approval process has changed. Today the plant owners have vested the GPU Nuclear Corporation Board of Directors with, *inter alia*, the authority to select management and to approve budgets. The individuals who make up the Board of Directors collectively have more than 125 years of experience with nuclear technology, and have senior management responsibility for either the overall GPU System and its operating utility companies, or of the GPU Nuclear Corporation.³⁰ In the course of reviewing the operating performance of the GPU Nuclear activities, the Board of Directors visits the plants, and comes into contact with a range of

³⁰ The members of the GPU Nuclear Corporation Board of Directors are: W. G. Kunns, Chairman of GPU, GPU Service Corporation, Jersey Central Power & Light Corporation (JCPL), Met Ed Company and Pennsylvania Electric Company (Penelec); R. C. Arnold, President of GPU Nuclear Corporation; P. R. Clark, Executive Vice President of GPU Nuclear Corporation; Dr. S. Bartnoff, President of JCPL; W. A. Verrochi, President of Penelec; B. H. Cherry, Vice President of Planning, GPU Service Corporation; and H. Dieckamp, President of GPU and GPU Service Corporation, Acting President of Met Ed, and Chairman of GPU Nuclear Corporation. Dieckamp, ff. Tr. 13,437, at 10.

personnel such that operating concerns, including the impact of any budgetary constraints, can be brought directly to its attention. In this manner, the Board of Directors can observe the needs of the nuclear plants and all supporting activities, and can directly coordinate those needs with the overall financial constraints of the company. Dieckamp, ff. Tr. 13,437, at 9-11; Tr. 11,462-76 (Arnold).

395. We observed several important features in Mr. Dieckamp's explanation of the budgeting process. GPU Nuclear Corporation operating management initially designs its own budget. Then the nuclear corporation's two highest operating officers, Messrs. Arnold and Clark, sit on the Board of Directors with a voice in approving their own budget. This means that budget approving responsibility falls upon the two officials with the most important operating responsibilities thus opening a direct channel for the inevitable financial influence upon technical decisions. But it also means that Messrs. Arnold and Clark have the best opportunity to defend their budget. We believe that the balancing is logical, the trade-offs appropriate, and the delegation of budgeting powers from the plant owners to the GPU Nuclear Corporation Board of Directors is a good organizational approach to the problem.

396. In any event considering the relationship among GPU, the plant-owning corporations and GPU Nuclear Corporation, and their common corporate officers and interlocking directorships, if there is a strong will to impose financial considerations upon technical decisions a way can be found to do so, notwithstanding the other safeguards referred to by Mr. Dieckamp. With this in mind, the Board found some reassurance that, even before there was a separate GPU Nuclear Corporation (or group), the operating departments had a strong voice in identifying the proposed budget cut items in early 1979 as we discussed with respect to TMIA Contention 5(b)(2) above.

397. Perhaps the best test of whether there is adequate separation of financial considerations from technical decisions is whether Licensee has committed sufficient resources to nuclear safety. In addition to describing the technical/financial organizational framework, Mr. Dieckamp testified concerning the manning levels and dollar expenditures for GPU Nuclear

Corporation. He cautioned however that the data upon which his conclusions are based have "real infirmities" because of reporting time delays, varying accounting practices, year-to-year swings associated with refueling and large maintenance requirements, and differing practices concerning contract services. *Id.*, at 4.

398. Relying upon FERC Form 1, industry manpower surveys sponsored by the Edison Electric Institute, and informal communications, Mr. Dieckamp stated that (1) the manpower levels at the GPU nuclear plants are among the highest in the industry; (2) GPU spends more for operations and maintenance at its nuclear plants than the industry average; and (3) GPU follows a practice of devoting a larger share of its budget to in-house manpower than the industry in general, based on its belief that there is benefit from the familiarity, continuity of experience, dedication, and loyalty that derive from a strong in-house staff. *Id.*, at 3-6.

399. Using another economic indicator as a basis for evaluating GPU management's attitude toward the allocation of resources to its nuclear plants, GPU has more than doubled its expenditures (operations and maintenance and capital improvements) at Oyster Creek and TMI-1 in 1980 (and budgeted for 1981) over the expenditures averaged over the 1976 through 1979 period, despite the fact that GPU's financial health is clearly poor, with no access to external sources of capital. GPU Nuclear Corporation's manpower levels have also sharply increased. *Id.*, at 6-8, Table 5, and Figure 5.

400. While these data do not prove funding adequacy, they do provide evidence that GPU's management, even in times of financial stress, has recognized the unique demands of its nuclear obligations, and has shifted available resources to meet those obligations. Moreover, GPU's financial commitment to its nuclear plants is high relative to the industry norm.

401. We conclude that Licensee's organizational framework and its practice of committing substantial resources to its nuclear business provides reasonable assurance that the relationship between its corporate finance and technical departments is such as to prevent financial considerations from having an improper impact upon technical decisions.

I. Safety Reviews and Operational Advice

402. CLI-80-5 issue (7) directs the Board to examine:

- (7) whether Metropolitan Edison has made adequate provision for groups of qualified individuals to provide safety review of and operational advice regarding Unit 1.

403. The Staff's management SER includes a description of Licensee's safety review process, and the method by which operational advice is provided to TMI-1 operations personnel. Staff Ex. 4, at 19-21, as modified by Staff Ex. 13, at 13. Licensee's description of its safety review program was provided by Mr. Philip R. Clark, Executive Vice President of GPU Nuclear Corporation. Clark, ff. Tr. 11,759. In addition, the Board was able to discuss this issue with management personnel in key positions of responsibility with respect to Licensee's safety review program, including Mr. R. C. Arnold, Mr. P. R. Clark, Mr. J. Thorpe, Mr. J. Herbein, and Mr. M. A. Nelson. Tr. 11,531-36, 11,539-63, 11,584-86 (Arnold); Tr. 11,758-852 (Clark, Thorpe, Herbein, Nelson). In general, the Staff is satisfied, as is the Board, with the organizational method used by Licensee to carry out the safety reviews which are mandated by Commission regulations, and which are necessary to properly operate and maintain TMI-1. Staff Ex. 13, at 5-6, 8; Staff Ex. 14, Table B-1, at 8. A summary of Licensee's safety review program follows.

404. GPU Nuclear Corporation has instituted major organizational and staffing changes in order to provide additional safety review and operational advice regarding TMI-1. These changes have been developed by senior technical management with many years of experience in nuclear activities within GPU and in a variety of other organizations including the Navy nuclear power program, Nuclear Steam Supply System suppliers and architect engineer firms. The development of Licensee's revised safety review program included consideration of the TMI-2 accident experience, the many investigations of that accident, developing NRC requirements and nuclear industry standards and practices which specify safety review

and operational advice criteria.³¹ Clark, ff. Tr. 11,759, at 1-2.

405. GPU Nuclear Corporation's safety review and operational advice programs are designed to assure that activities are performed in accordance with company policies and applicable laws, standards, policies, rules, regulations, licenses, and technical requirements; that proposed plant, test, and procedural modifications received independent review; that events, including those that require prompt reporting to the NRC, are investigated and corrected in a manner which reduces the probability of recurrence of such events; and that trends which may not be apparent on a day-to-day basis or by consideration of individual items are detected and appropriate action taken. *Id.*, at 2.

406. The safety review and operational advice programs are structured so as to assess not only individual items but also whether the work of the functional organizations is being done properly and effectively from a safety standpoint, and to identify any needed improvement in how that work is being done. Safety reviews and operational advice are performed in addition to Licensee's expanded Quality Assurance program, which includes all aspects of nuclear activities which are important to safety and which audits all such activities, including the safety review and operational advice programs themselves. See ¶¶ 107-115, *supra*. Clark, ff. Tr. 11,759, at 3-4.

407. Licensee intends to avoid certain potential problems associated with extensive safety review and operational programs. These problems include relying on "the other guy" to perform a safety review, and therefore not performing the job properly in the first place, or ignoring principles of safety in performing the job. It was Mr. Clark's view that:

Underlying the safety review question, I think, is a principle that I learned and saw work in the Naval program. I think it is very important. And that is that you cannot get safety by having some little group worry about safety and have everybody else rely on

³¹ Included in this list of proposed or recently finalized requirements and guidelines are NUREG-0731, Draft Guidelines for Utility Management Structure and Technical Resources (September 1980), at 15-16, *see insert ff. Tr. 11,820*; Task I.B.1.2 of NUREG-0694, TMI-Related Requirements for New Operating Licenses (June 1980), and NUREG-0737, Clarification of TMI Action Plan Requirements (November 1980), *see Tr. 11,840 (Dornsife, Clark) and Staff Ex. 4, at 19*; Second Proposed Revision 3 to Regulatory Guide 1.33, Quality Assurance Program Requirements (Operational) (November 1980), *see Staff Ex. 4, at 19*; and, Draft 5 of ANS 3.2, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants (August 1980), *see Staff Ex. 4, at 19*.

them; that if you are going to have safety you have to have consciousness of safety in all the people doing their job day in and day out.

Tr. 11,766 (Clark). *See also* Tr. 11,842-43 (Clark). Licensee also intends to avoid diverting personnel with significant line functions from their primary responsibilities to reviewing large volumes of procedural and other changes. Tr. 11,843 (Clark).

408. Licensee's safety review and operational advice programs have been so completely modified since the TMI-2 accident that an element by element comparison with earlier programs is not practical. For example, as we discuss below, Licensee's new safety review program involves the elimination of a previous on-site safety committee, called the Plant Operating Review Committee (PORC), with the functions of that committee being assumed to some degree by a new on-site group, but primarily assumed by various functional groups within GPU Nuclear. Tr. 11,760-62 (Clark); Clark, ff. Tr. 11,759, at 9.

409. **Safety Review Program.** In its safety review program, Licensee seeks to emphasize its philosophy that the first line of reliance on safety is having whoever is doing the job feel responsible for safety and accountable for it, and then to provide a complete check on the job. Thus, at TMI-1, the initial safety evaluation if required is prepared by the individual assigned the task. The reviewer then checks the safety evaluation report or the determination that a safety evaluation is unnecessary. Tr. 11,767-68 (Clark); Tr. 11,556-67 (Arnold). The first element of the safety review program, then, is a one hundred percent review by someone other than the individual doing the work. This review is performed prior to implementation of the change on activities important to safety, including design work or changes, plant operating, emergency and alarm procedures, radiological control procedures and plant maintenance procedures. Responsibility for assuring adequate review of particular activities is assigned to the appropriate GPU Nuclear organization, such as Technical Functions or TMI-1 Plant Engineering. *Id.*, at 4; Tr. 11,767, 11,781, 11,824-26 (Clark); Tr. 11,532-33 (Arnold).

410. The second element of the safety review program is the Independent On-site Safety Review Group (IOSRG). There is a separate IOSRG for TMI-1 responsible solely for that unit. Tr. 11,772 (Clark). The TMI-1 IOSRG has no line responsibilities or functions and is devoted solely to safety matters. It is independent of the plant staff and reports off-site to the Manager of the Nuclear Safety Assessment Department (NSAD), which is part of Licensee's Nuclear Assurance Division; however, IOSRG also advises the Vice President of TMI-1 and the TMI-1 Operations and Maintenance Director, as appropriate. Staff Ex. 4, at 20, as amended by Staff Ex. 13, at 13; Clark, ff. Tr. 11,759, at 4. IOSRG provides before-

the-fact review of such items as proposed Technical Specification changes, unreviewed safety questions, and other items it chooses or which are referred to it by GPU Nuclear's divisions, such as Technical Functions or the TMI-1 staff. It also provides an after-the-fact overview of activities important to safety to assess both the adequacy of individual matters and the effectiveness of the preparation and review by the functional groups. This responsibility includes evaluating, on an ongoing basis, the technical adequacy and clarity of procedures important to safe operation of the plant. *Id.*, at 5; Staff Ex. 4, at 20, as amended by Staff Ex. 13, at 13.

411. The IOSRG consists of a Safety Review Manager, Mr. Max Nelson, who has a B.S. degree in physics and thirteen years of professional experience in nuclear power. Clark, ff. Tr. 11,759, at 5. The staffing plan is for at least three technically qualified individuals.

412. Intervenor TMIA criticizes Licensee's IOSRG because it is not "equivalent" to the Staff's tentative concept of the Independent Safety Engineering Group (ISEG) set out in draft NUREG-0731 at 15 (insert ff. Tr. 11,820). TMIA PF ¶ 69.³² In the draft NUREG the Staff would require an on-site ISEG reporting off-site with seven named safety review functions.³³ TMIA does not discuss why the differences are important; only that the Licensee's IOSRG is not the same as the Staff's ISEG. The Board and some of the parties, but not TMIA, examined Licensee's witnesses about the differences and we are satisfied that the seven functions the Staff would have assigned to an ISEG are in fact assumed by the IOSRG, or by an appropriate independent off-site support organization, for example, as we discuss below, ¶ 421, with respect to the comparison of operating experiences among plants. *E.g.*, Tr. 11,543-63 (Arnold); Tr. 11,818-27 (Clark); Tr. 11,827-34 (Clark, Nelson, Herbein). The short answer to TMIA's concern that the Licensee's on-site safety review group does not match the Staff's version of such a group is that draft NUREG-0731 has never been made a final Staff position, and the Staff itself is satisfied with the allocation of the ISEG functions among the Licensee's IOSRG and the off-site review groups. Staff Ex. 4, at 20. Staff PF ¶ 125.

413. TMIA would also have the Board fault Licensee's IOSRG by finding that we question Licensee's commitment to find qualified people for those jobs. TMIA PF ¶ 69. TMIA's citation to the record³⁴ does not

³² TMIA has apparently confused NUREG-0737 with draft NUREG-0731 in its proposed finding ¶ 69.

³³ These are: evaluation for technical adequacy and clarity of all procedures important to the safe operation of the facility; evaluation of plant operations from a safety perspective; evaluation of the effectiveness of the quality assurance program; comparison of the operating experience of the plant and plants of similar design; assessment of the plant performance regarding conformance to requirements related to safety; any other matter involving safe operation of the nuclear power plant that an independent review deems appropriate for consideration and assessment of plant safety programs.

³⁴ TMIA's citation to Mr. Clark's testimony, "Tr. 11,883", was a mistake. The testimony referred to by TMIA actually was at Tr. 11,781-82.

support such a finding. Mr. Clark testified that the IOSRG will meet the Staff's guidance level of five persons this year, but that Licensee wants a larger group which they cannot staff with "people of the caliber we want this year." Tr. 11,781-82. Mr. Arnold also testified that the Licensee's high qualification standards for the IOSRG jobs presented problems in filling the spots. Tr. 11,782 (Arnold). There is no evidence bringing into question Licensee's commitment to properly staff its IOSRG.

414. TMIA continues to criticize the IOSRG concept because it will displace the Plant Operating Review Committee (PORC). TMIA PF ¶¶ 70, 71. Because TMIA does not explain the details of this objection and because of its uncertain references to the record, the Board cannot, without unjustified speculation, identify the basis for TMIA's concern. Thus, we are unable to adopt its proposed findings ¶¶ 70, or 71. Moreover TMIA discusses not at all the value of relieving the TMI-1 operating management of the diverting burden of functioning as the facility's PORC. See Tr. 11,843 (Clark).

415. The third element of the safety review program is the Nuclear Safety Assessment Department (NSAD) which, under the direction of its Manager, reports directly to the Vice President of Nuclear Assurance. Clark, ff. Tr. 11,759, at 5. NSAD is a new concept employed by GPU to strengthen the safety of its nuclear activities. In addition to the safety review groups customarily employed by licensees and required by NRC to independently conduct reviews of specified plant activities, this Department has incorporated within it the resources and the freedom to conduct on their own initiative assessments of the safety implications of any and all facets of plant design and operation, to consider their potential for compromising nuclear safety and to provide management with recommendations for improvements. Arnold, ff. Tr. 11,434, at 20-21; Tr. 11,532 (Arnold). NSAD has no specific tasks which it is required to do. Tr. 11,775 (Clark). Moreover, its activities are not required to fulfill any regulatory requirements. Tr. 11,584-86 (Arnold). However, in addition to overseeing the IOSRGs for TMI-1, TMI-2 and Oyster Creek, the NSAD, through its headquarters staff, is charged with the following general responsibilities: (1) to maintain an overview of activities affecting or potentially affecting safety; this broadly defined responsibility makes it possible for NSAD to assess the adequacy of Licensee's entire safety review program and identify areas for improvement; (2) to serve as a corporate ombudsman accessible on a confidential basis to anyone in the company having a safety concern he or she considers is not being adequately addressed; the ombudsman is empowered to investigate the matter, identify any needed action, seek resolution of the matter, and reply to

the individual who raised the concern; (3) to evaluate on an ongoing basis the technical adequacy and clarity of all procedures important to safe operations of TMI-1; and (4) to provide staff support to the fourth element of the safety review program, the General Office Review Board. Clark, ff. Tr. 11,759, at 5-6; Tr. 11,809 (Clark).

416. The Manager of NSAD is Dr. Robert Whitesel, who has a bachelor of science degree in electrical engineering, a masters degree in engineering science, and a doctorate in mechanical engineering. Dr. Whitesel's extensive experience in the nuclear power field includes three years at General Electric's Knolls Atomic Power Laboratory working in the areas of reactor physics and advanced submarine power plant design; Manager of Nuclear Safety and Analysis for the Electric Power Research Institute (EPRI); and, Washington, D. C. representative for the Nuclear Power Division of EPRI. Dr. Whitesel has also worked on industry-wide standard setting committees. Tr. 11,795-96 (Herbein). As the Manager of NSAD, Dr. Whitesel will be assisted by approximately five technical staff during 1981. Tr. 11,781 (Clark). In order to facilitate NSAD's function of providing staff support to the General Office Review Board, the Manager of NSAD will be its permanent Vice Chairman. Staff Ex. 4, at 20-21, as modified by Staff Ex. 13, at 13; Tr. 11,554-55 (Arnold).

417. The General Office Review Board (GORB) is the final element of GPU Nuclear's Safety review program. There are three GORBs, corresponding to the three GPU nuclear plants, with a common full-time chairman and a number of common members of the three boards. Clark, ff. Tr. 11,759, at 7. The TMI-1 GORB is made up of eleven senior level individuals with diverse technical backgrounds. Licensee Ex. 26(a)-(k); Tr. 11,787-89, 11-791 (Thorpe). Five of these individuals are not employed by GPU and thus are expected to provide independent input and insight. GORB reports to and takes general direction from the Office of the President of GPU Nuclear Corporation; however, GORB members have direct access to the Chief Executive Officer (Mr. Dieckamp), and the Board of Directors. The GORB charter is broadly defined to encompass all matters potentially affecting safety so as to foresee potentially significant nuclear and radiation problems. This includes the functioning of the safety review process and the adequacy of the Quality Assurance program. Like NSAD, GORB has no assigned tasks; it is therefore able to devote attention to identifying previously unrecognized safety questions or underlying issues. Meetings of the TMI-1 GORB are held about once every three months. Clark, ff. Tr. 11,759, at 6-7.

418. The Chairman of the GPU Nuclear GORBs is John R. Thorpe who has his masters degree in chemical engineering and a continuous nuclear engineering background extending back to at least 1957 when he served as a supervisor then Superintendent of the Savannah Nuclear Technology Department of the New York Ship Building Company. Licensee Ex. 26(j).

419. In general, Licensee's safety review program appears to be carefully designed by GPU to effectively utilize its organizational framework to provide review of the on-site TMI-1 staff, and the on- and off-site technical support staff of GPU Nuclear Corporation. *See, e.g.*, Tr. 11,550-53, 11,555-62 (Arnold). Licensee has selected and requires that any new personnel with safety review responsibilities be highly qualified to perform these reviews, thereby assuring that the recommendations of its safety review groups are based on sound technical judgment. Clark, ff. Tr. 11,759, at 9-10; Tr. 11,791 (Clark). In addition, the responsibilities and organizational status of the various entities which comprise Licensee's safety review program have been defined to assure that the safety review groups can operate independently, and with the requisite authority to function effectively. *Id.*, at 10.

420. **Operational Advice.** In addition to the safety review functions described above, Licensee is taking specific measures to assure the proper collection, evaluation, and dissemination of plant operational experiences throughout the corporate structure and at TMI-1. Staff Ex. 4, at 21, as modified by Staff Ex. 13, at 13. Like the safety review program, the operational advice program supplements the responsibility of the line function organizations. These line function responsibilities are assigned to plant staff, such as Operations engineers and Plant Engineering, as discussed in ¶¶ 86, 100-101, *supra*; shift technical advisors, as discussed in ¶ 80, *supra*, and ¶ 513, *infra*; and the Plant Safety Analysis section of Technical Functions Division, as discussed in ¶ 513, *infra*.

421. It is the Plant Safety Analysis section which reviews all licensee event reports (LERs) from GPU and other nuclear plants, the NOTEPAD computerized information exchange among B&W owners, and general industry experience from INPO. The section assigns to responsible line organizations the specific review and assessment of corrective action for all operating information considered to have applicability to TMI-1. Clark, ff. Tr. 11,759, at 8; Wilson, ff. Tr. 11,722, at 7-8; Tr. 11,738-39, 11,746-52 (Wilson); Tr. 11,778 (Clark); Tr. 11,536 (Arnold). This function is one of the review functions which draft NUREG-0731 designates as the responsibility of the ISEG, but which Licensee has chosen to delegate to the

off-site Plant Safety Analysis section.³⁵ Tr. 11,819 (Clark). See ¶ 412, *supra*.

422. The Board regards the operating experience review function which is to be performed by the Plant Safety Analysis Section to be very important. The investigators of the TMI-2 accident have stated that if the information on the feedwater transient which occurred at the Davis-Besse plant on September 24, 1977, for example, had been placed into an effective system for the evaluation of operating experience, the TMI-2 accident of March 28, 1979 might not have happened. The Licensee recognizes this, of course, and has sued the Commission on that account.³⁶ See also Tr. 13,267-69 (Lee).

423. We have no reason to question the Licensee's representation that its Plant Safety Analysis Section, and to a narrower extent its TMI-1 IOSRG and GORB will perform this function responsibly and that its present intention is to see that this responsibility will continue to be met.

424. In its proposed findings Licensee, as have we, discussed the operating experience review function as a matter of operating advice. Licensee PF ¶ 250. Nowhere in Licensee's evidentiary presentation or its proposed findings can we discern that Licensee regards this function as a mandatory requirement of the NRC.³⁷ This may be an oversight; indeed the Board itself did not focus upon the matter during the hearing. Since the hearing however, in reviewing the record, we have become aware that the Staff position on the enforcement of the operating experience review function is not sufficiently clear to the assuage our concern.

425. The Staff in NUREG-0737, at 3-47, continued Task Action Plan I.C.5, Procedures for Feedback of Operating Experience to Plant Staff from NUREG-0660. The Task Action Plan calls for each applicant for an operating license to prepare procedures to assure that operating infor-

³⁵ The TMI-1 on-site IOSRG, however, will review operating experience within and without GPU with emphasis on the adequacy of corrective actions, taken or planned for TMI-1. Also the GORB will assess the effectiveness of Licensee's utilization of operating experience from within and outside GPU Nuclear to improve TMI-1 operations and activities. Clark, ff. Tr. 11,759, at 8.

³⁶ We officially notice the discussion of the Davis-Besse transient in the report of the Special Inquiry Group (Volume I, at 94-97, Volume II, Part 1, at 149-61) and the Licensee's claim against the NRC for the purpose of placing our concerns about the operating experience review function into context.

³⁷ In its proposed finding ¶ 296, n. 53, Licensee lists twelve Near Term Operating License requirements taken from NUREG-0694, including Task Action Plan I.C.5 which Licensee has either met or has committed itself to meet. Since Licensee depends upon CLI-81-3 which authorizes Licensee to be treated as an operating reactor (*Id.*, 13 NRC291,295 March 23, 1981), we cannot be assured that either Licensee or the Staff regard the NUREG-0694 items to be necessarily within the scope of this proceeding, or even that those requirements are enforceable with respect to Licensee.

mation pertinent to plant safety originating both within and without the utility organization is continually supplied to operators and other personnel. *Id.* This requirement has been picked up in the Commission's May 7, 1981 Proposed Rule adding to licensing requirements applicable to applications for operating licenses, 46 FR 26491, May 13, 1981. For new operating licensees the Commission would require:

- (vii) A management system shall be provided to perform the following functions: (A) Review operating experience information originating both within and outside the facility; (B) Promptly supply information pertinent to plant safety, including proposed procedural changes and plant modifications, to operators and other appropriate plant personnel; and (C) Assure that such information is incorporated into training and requalification programs. (I.C.5)

Id., at 26,495.

426. In SECY 81-422 the Staff recommended to the Commission that many NUREG-0737 items, including Task Action Plan I.C.5 be incorporated into a proposed rule for operating reactors. However, the Commission declined to publish such a proposed rule.³⁸

427. The Staff in letters to the Board and to the management of TMI-1 both dated April 21, 1981 asserts that the Staff will require the implementation of Task Action Plan I.C.5, but the Staff does not regard the requirement to be within the scope of the Commission orders dated August 9, 1979 (Notice of Hearing) and March 6, 1980 (CLI-80-5 management issues) in this proceeding. Staff Ex. 12 (referenced letters and Enclosure 1). *See also* Board Ex. 10, Attachment, at 2.

428. We disagree with the Staff's position that Task Action Plan I.C.5 is outside the scope of this proceeding. It is, we believe, squarely within issue (7) of CLI-80-5. The operating experience review function, or rather the absence of the function, has a close nexus to the accident. The provision for the function is a material aspect of our conclusion that the Licensee has satisfied CLI-80-5 issue (7). We expect and require that Task Action Plan I.C.5, as set forth in the Proposed Rule for operating license applications cited above, ¶ 425, be enforced as a part of this proceeding if restart of TMI-1 is permitted.

³⁸ An unpublished memorandum, August 12, 1981 from John C. Hoyle, Acting Secretary to William Dircks, *et al.*, reports that the Commission by a vote of 3 to 1 (Commissioner Bradford approving, Commissioner Gilinsky not present and not participating) disapproved publication of a proposed rule to codify NUREG-0737 operating reactor requirements and schedules.

429. The Board concludes that the Licensee has made adequate provisions for groups of qualified individuals to provide safety review of and operational advice regarding TMI-1.

J. Validity of Comparing TMI Infraction, LER and Operating Experience History With Industry-Wide Statistics

430. CLI-80-5 issues (8) and (9) directs the Board to examine the following issues:

- (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.

431. Only the Staff and Licensee filed proposed findings on these issues. The Commonwealth cross-examined witnesses on the issues, but no intervenor did so. We could discern no particular position from the Commonwealth's cross-examination and we regard CLI-80-5 issues (8) and (9) to be uncontested.

432. **Comparison of Infraction Statistics.** In the management SER (Staff Ex. 4) the Staff provided three tables of comparative infraction and civil penalty statistics which it developed in order to respond to issue (8). The Staff compared the enforcement history at TMI Units 1 and 2 to selected plants and national average data using enforcement statistics compiled since 1975. To evaluate the enforcement history for TMI, an attempt was made to select plants for comparison that were licensed in a similar time frame, since safety equipment required and the associated licensing requirements for this equipment are to some degree dependent on the time the facilities were licensed. The TMI-1 comparison sample included PWRs manufactured by Babcock & Wilcox (4 units), Westinghouse (10 units), and Combustion Engineering (2 units). The TMI-2 comparison used plants licensed in a similar time period and included

history for only the first year of operation. This list included two B&W-designed units and three Westinghouse-designed units. Staff Ex. 4, at 27.

433. The number of inspections, noncompliances and civil penalties, and the severity of the noncompliances were compared. In one table, the Staff showed the enforcement data of 16 plants and TMI-1 by year (1975-1978), the noncompliances by category of severity (severity 1 being the most serious), the total number of noncompliances, and the number of inspections. In addition, the ratio of noncompliances to the number of inspections was included in the table to provide a "normalization" of the data, since IE inspection results have shown through the years that noncompliances are dependent on the inspection manhours applied. *Id.*, at 27-28.³⁹ The table also provides average statistics, based on all plants licensed to operate during the years shown. The Staff's interpretation of these data led the Staff to conclude that TMI Unit 1 enforcement statistics prior to the TMI-2 accident were very close to the national average and slightly better than typical for the units shown. There were no severity 1 noncompliances for TMI-1. *Id.*

434. In its second comparison, applicable to TMI Unit 2, the Staff used data similar to that used in the first table except that the statistics were limited to the first year of operation of the selected units, and the average data points shown were those for the average of the six units listed, not the national average. *Id.*, at 28, Table III.I.2. With respect to this second table, the Staff concluded that TMI-2's noncompliance performance was typical of that for comparable units. Again, there were no severity 1 noncompliances at TMI-2 prior to the accident. *Id.*

435. Finally, to complete its comparison of TMI noncompliance statistics to those for other plants, the Staff tabulated the number and dollar amount of civil penalties levied against licensees from their inception in 1973 through 1978. The Staff reported that civil monetary penalties were levied against Met Ed two occasions at TMI-1 for physical security weaknesses; that the imposition of these two penalties spaced two years apart and the cumulative amounts, coupled with the noncompliance history of this license, did not indicate a cause for regulatory concern; and, that no order was issued to TMI for correction of a safety problem. *Id.*, at 28, Table III.I.4. Overall, the Staff concluded that a comparison of Licensee's enforcement history with industry-wide statistics indicated that Licensee has been an average performer. *Id.*, at 28.

³⁹ Table III.I.1 seems to illustrate this phenomenon. In the years 1975 through 1977 when TMI-1 had more than the national average of inspections, it had more than the national average of reported noncompliances. In 1978 both the number of inspections and reported noncompliances dropped below the national average. *Id.*

436. The Board did not believe that the data analyzed by the Staff represents a reliable means by which to assess an individual plant's performance, or the management capability of that plant's licensee. We discussed our doubts with Mr. Norman C. Moseley, Director, Division of Program Development and Appraisal, Office of Inspection and Enforcement. He agreed and stated:

In general, I think that the value of this information [noncompliance comparisons] is certainly not in the statistical treatment, but rather how well a particular licensee learns from the events that occur, and how much in depth they pursue the causes; not just the apparent cause, but the real basic root cause, and what corrective actions they take in correcting their management systems, or their procedures or whatever might be the basic root cause.

Tr. 13,081 (Moseley).⁴⁰

437. The Board specifically asked Mr. Moseley whether with respect to the comparison of noncompliances, one could assume, for example, that a severity 2 noncompliance was two times weightier than a severity 3. Mr. Moseley answered in the negative. Moreover, he noted that the comparisons provided in these tables were further obscured by the fact that regional IE offices interpret technical specification compliance differently. Tr. 13,088-89 (Moseley).

438. In addition, because of the statutory limitations placed on the imposition of civil penalties, Mr. Moseley considered the information provided by the Staff (Staff Ex. 4, at 32, Table III.I.4) also to be of limited value. He explained that this limitation could not have been cured by the staff's providing a dollar figure of what the civil penalty would have been, but for the statutory limit, because the Staff did not in each case determine what the maximum penalty might have been, and so the information was not available. Tr. 13,089-90 (Moseley).

439. It is Mr. Moseley's view, and we agree, that to make an assessment of the relative enforcement history of licensees, it would be necessary to summarize the types of occurrences or the types of things about which citations had been made, see whether there were repeats in these areas,

⁴⁰ Mr. Moseley explained how IE's new Systematic Assessment of Licensee Performance program is a program which has as one of its goals the ability to rate licensee performance on a national basis. While some of the enforcement actions, as well as licensee event reports (LERs), are part of the information that is considered in doing this evaluation, it is only a small part of the overall in-depth analysis of licensee weaknesses and strengths. Tr. 13,082-85 (Moseley).

where the corrected actions had been taken, whether they were helpful in turning around adverse trends, and then compare the plants with respect to their successes and failures in these areas. Tr. 13,088-89 (Moseley).

440. Licensee's response to the Board's inquiry with respect to the usefulness of infraction history statistics in assessing Licensee's ability to operate Unit 1 safely was similar to the approach taken by the Staff. Licensee's expert witness on this subject was Mr. Robert H. Koppe, the Manager of Reliability and Safety Projects with the consulting firm S. M. Stoller Corporation. Mr. Koppe has had substantial nuclear licensing and safety analysis experience, and, in particular, has worked extensively on operating experience analyses for the Nuclear Safety Analysis Center to identify and examine events at all U. S. nuclear plants with potential significant economic or safety implications. Koppe, ff. Tr. 13,335 (attached qualifications).

441. Using a simple count of noncompliances of units in Region I, which were potentially related to plant safety, and discarding noncompliances not relevant to the TMI-1 facility, Mr. Koppe developed a table of comparative statistics. He then derived a second table to show the number of noncompliances per 100 inspector hours for Region I plants. In each case, the performance of TMI-1 was either exactly or almost exactly average.⁴¹ Mr. Koppe concluded that:

At least in theory you could look at all of the non-compliance reports and read in detail what they examined, to what extent they examined it and what they found, and possibly you could draw some meaningful conclusions. But there is no way by counting non-compliances or putting them in different bins or by doing statistical analyses of them that you can draw meaningful conclusions.

Tr. 13,366 (Koppe); *see also*, Koppe, ff. Tr. 13,335, at 25-27.

442. In summary, while both the Staff and Licensee compiled statistical information on infraction histories of plants which could reasonably be compared with TMI, both parties derived little meaning from these statistical comparisons. To the extent a conclusion might be drawn at all, Licensee appeared to be an average performer. Probably, the more accurate view, however, is that there is no statistically reliable conclusion that can be drawn concerning Licensee's ability to operate TMI-1 from a

⁴¹ Mr. Koppe was of the view that because TMI-2 had been in commercial operation for only three months, the limited amount of data available was not useful; consequently, all of his comparative statistics exclude TMI-2. Koppe, ff. Tr. 13,335, at 1.

comparison of the number and type of past infractions of NRC regulations attributable to the Three Mile Island Units with industry-wide infraction statistics.

443. **Comparison of LER Statistics.** In its evaluation of Licensee Event Report (LER) statistics, the Staff considered three measures of Licensee's relative performance in the industry, based on an examination of industry-wide LER statistics from 1972 to 1980. First, the Staff considered management's effectiveness in eliminating the recurrence of events with similar causation, based on the premise that once an event has occurred, good management will ensure that it is analyzed and corrected so that it will not recur. In the case of TMI, the Staff found one series of recurring LERs related to maintaining seals on one of two pressure-lock doors on the TMI-1 containment. While the Staff considered this series of LERs to reflect negatively on Licensee's management, in light of the fact that there was only one such series and that in substance, this particular problem was not as serious as that for series identified on other operating plants, the Staff placed little significance on this finding. Staff Ex. 4, at 33-34.

444. In its second method of analyzing LERs, the Staff tabulated the number of LERs for the first year of commercial operation and for the commercial life of the operating B&W plants. For these plants during these time frames, the Staff also listed the ratio of so-called Human Error Licensee Event Reports (HELERS) to LERs.⁴² This ratio was considered more accurate than comparing numbers of LERs because while the number of LERs varies greatly according to plant type, size, and age, as well as the vintage of Technical Specifications and how they are interpreted by the Licensee, HELERs have been shown to be stable in quantity over time, and also represent a stable percentage (20%) of the total number of LERs issued per plant. Also, the ratio of HELERs to LERs eliminates variations between plants that are due to Technical Specifications. *Id.*, at 33-34, Table III.I.5. The Staff's statistical analysis indicated that the safety performance of TMI was about average. *Id.*

445. In its third evaluation, the Staff compared the percentage of HELERs in a series of "What Went Wrong" categories, which classified the nature of the problem identified in the LER, e.g., safety equipment malfunction, monitoring instrumentation malfunction, safety equipment tripped. This analysis included in its data base the average percentage for 31 PWRs. Again, TMI-1's statistics turned out to be very close to the average; however, TMI-2 showed statistically significant (higher) variations

⁴² The Staff did not consider other PWRs (or BWRs, for that matter) in its data base in an effort to accurately reflect the human error rate, which would be influenced by plant type, size and age. Staff Ex. 4, at 34.

in the categories of (1) safety equipment being on the wrong setting or surveillance not being performed on schedule, and (2) surveillance or maintenance not performed on schedule. The explanation offered to account for TMI-2's above average number of problems was that TMI-2 operating data spanned less than a full year during the first year of operation, a period of time which usually shows significantly higher ratios of HELERs to LERs than subsequent years of operation. *Id.*, at 33-35, Table III.I.5.

446. The Staff's evaluation was that none of the [LER comparison] methods used to evaluate the quality of safety management at TMI-1 have been proven accurate. The premises and assumptions upon which they are based have not been validated. However, the idea of using the number of recurrences of causally connected events seems to be a good one for two reasons. First, it appears that it is logically correct; and second, it appears that it cannot be easily biased. Its major shortcoming appears to be a lack of a quantitative determination of how important the particular deficiencies are to be the health and safety of the public. Nevertheless, the Staff concluded that the LER data do not show any statistically significant or substantial anomalies for the management of TMI-1 compared to that for other plants. *Id.*, at 34-35.

447. As in the case of noncompliance history comparisons, Mr. Moseley of IE expressed the personal view that purely statistical analyses of LER data are incapable of providing a basis for reaching a conclusion with respect to Licensee's management. Tr. 13,095-96 (Moseley). In his view, while statistics should be looked at to assess whether there is an extreme problem or apparent problem, they cannot be relied upon except as they are worked into judgment and other subjective management factors. *Id.*; Tr. 13,099-100 (Moseley).

448. Licensee's LER analyst, Mr. Koppe, did not consider a purely numerical analysis of LERs to be of any value, including statistical efforts to increase the reliability of these numbers, e.g., by ratios. Koppe, ff. Tr. 13,335, at 23; Tr. 13,354-56, 13,377-78, 13,393-95 (Koppe).

449. As we did with respect to the statistical comparisons of infractions, the Board finds that there is no reliable conclusions that can be drawn from a purely statistical comparison of Licensee's LERs with industry-wide LERs.

450. Not depending upon a simple numerical comparison, Mr. Koppe performed a very detailed analysis of all of the Licensee's TMI-1 LERs based upon his view that the level of reliability one can expect from comparing LERs depends directly on the ability to isolate individual factors and their influence on performance. He read every TMI-1 LER, summarized it for himself, classified it according to system and problem area, relisted them all, and then reviewed his notes for patterns. He

divided the LERs topically into (1) personnel errors, and (2) loss of key safety system functions (defined as systems the failure of which can result in significant core damage if the system is not restored fairly rapidly after the initiation of a transient). Koppe, ff. Tr. 13,335, at 27-44; Tr. 13,383 (Koppe). In his personnel error analysis, Mr. Koppe compared the entire five-year history of TMI-1 with the experience of PWRs for the first eight months of 1980, thereby manageably reviewing a sample of LERs in detail. Koppe, ff. Tr. 13,335, at 29-30. Mr. Koppe's safety system analysis focused upon complete failures of safety systems, and varying time periods and different groupings of units for the system failures he analyzed, e.g., PWRs and BWRs in the case of diesel generator system failures, but only PWRs in the case of high pressure injection system failures, in order to improve the reliability and meaningfulness of the results of his comparisons. Koppe, ff. Tr. 13,335, at 34-42; Tr. 13,375-77, 13,385-88 (Koppe).

451. On the basis of his LER study, Mr. Koppe concluded that the pattern of personnel errors at TMI-1 was typical of industry experience, i.e., a decreasing rate as the unit matured. The average rate of reported errors at TMI was slightly above average; in his view, this was almost certainly due to a greater willingness at TMI to blame personnel error for component malfunctions. Tr. 13,361, 13,378 (Koppe). However, the most serious type of personnel error in his judgment, involving tagouts and lineups, occurred less frequently at TMI than at the average PWR. Koppe, ff. Tr. 13,335, at 33.

452. The Board does not question Mr. Koppe's competence or candor and his conclusions seem logical enough. However, we decline to afford much weight to them because of several concerns. We do not feel comfortable with the reliability of his LER data base. His analysis was a very ambitious undertaking and its implications are very broad and important. His methods and conclusions depend heavily upon judgment. All in all his study may be very sound and his conclusions valid but they have not been subject to the scrutiny in this hearing (or elsewhere that we know of) required to provide reasonable assurance of their reliability.⁴³

⁴³ This is not intended as criticism of the Licensee or Mr. Koppe. He was made available for cross-examination without condition or time limitation. The Commonwealth's cross-examination centered on narrow aspects, and no other party cross-examined. Koppe, ff. Tr. 13,335. Considering the pace and length of the hearing the Board did not have an opportunity to prepare an examination plan which would inquire sufficiently into his data and methods. Nor did we see such a need. We do not wish our reluctance to accept his conclusions in this hearing to be taken as a disparagement of the reliability and safety project headed by Mr. Koppe. With our limited opportunity to observe, the project seems to be well thought out and it is a very important undertaking.

453. Mr. Koppe also compared the failure rates of four key safety related systems⁴⁴ to the failure rates/system unavailabilities used in the WASH-1400 evaluations, as well as with failure rates on an industry-wide basis. This led him to find that in all cases, actual experience was better (by a very large factor) than WASH-1400 probabilities, even if one ignored the lower risk of system failure which would result if one accounted for the ability of operators to restore systems to service. Mr. Koppe considered the fact that industry experience was significantly better than WASH-1400 levels to be an indication of the more than adequate level of safety which is being achieved today. Since TMI-1 was average or somewhat better than average when compared against the industry statistics, he concluded that on the basis of his LER analysis, the operations of TMI-1 prior to March 1979 were such that they provided an adequate level of safety. Koppe, ff. Tr. 13,335, at 42-44.

454. The Board rejects Mr. Koppe's conclusions based upon WASH-1400 and the respective portion of Licensee's proposed finding ¶ 264. Mr. Koppe was unable to justify his reliance upon WASH-1400 data. Tr. 13,404-09 (Koppe, Jordan). Licensee's counsel on behalf of Mr. Koppe later identified the portions of WASH-1400 data relied upon by Mr. Koppe Tr. 16,490-91. Nevertheless, we remain skeptical that the data justifies Mr. Koppe's conclusion. We have not had the opportunity to perform our own analysis to assure the reliability of the data base, and in any event we do not have full confidence in the validity of Mr. Koppe's syllogism.

455. We are however satisfied, as Licensee urges us to be (PF ¶ 265), that Mr. Koppe's analyses provided no basis to suspect that there are any serious shortcomings in TMI-1 LER history which would cause us concern about Licensee's management capability.

456. **Comparison of Operating Histories.** The Board assumed that the reference to Licensee's operating experience in CLI-80-5 issue (9) was primarily a reference to safety related operating experience. However, neither the Board nor the Licensee regarded issue (9) as excluding a test of Licensee's management competence in terms of power production and capacity factors. Licensee's analysis of TMI-1's operating history also compared the capacity factor of TMI-1 with three other groupings of nuclear units: B&W units other than TMI-1, PWR units other than

⁴⁴ These are: system failures of the diesel generator system, the high pressure injection system, the auxiliary or emergency feedwater system, and the low pressure injection system, Koppe, ff. Tr. 13,335, at 38-41.

TMI-1, and all nuclear units other than TMI-1.⁴⁵ Koppe, ff. Tr. 13,335, at 5-8, Table 1. We are not reluctant to accept Mr. Koppe's opinion and conclusions concerning the comparison of capacity factors as an indicator of reliable operating history. This portion of his testimony, we believe, is less judgmental, more scrutable, and stands upon a reliable data base. *Id.*, at 5-23.

457. In order to account in his analysis for the varying years of nuclear experience gained at each plant, Mr. Koppe first weighted and averaged the lifetime capacity factors of each of the units in the group, using data from the first full month of commercial operation for each unit through the end of March 1979. *Id.*, at 7. Since TMI-1 and the B&W units have nuclear system designs that are generally very similar, Mr. Koppe noted that the strongest similarity of performance should be evident in these two statistics. (Generic problems that affect the nuclear systems of B&W units will probably also affect TMI-1. Conversely, problems affecting the nuclear systems of units designed by a different vendor, but not affecting the B&W units, will probably also not influence the performance of TMI-1.) Because all PWR units have many design similarities inherent in their reactor systems, Mr. Koppe expected that performance of PWR units would also be similar to that of B&W units and TMI-1. *Id.*, at 8. In fact, the lifetime capacity factor of TMI-1 is considerably higher than the average lifetime capacity factors for other B&W units, for other PWR units, and for all other nuclear units both as a weighted average over the plants' lifetimes and, in Mr. Koppe's second analysis, when comparing TMI-1's first five years of commercial operation with the corresponding averages of other units. This is the case even though the experience for other PWR units and other nuclear units in general includes proportionally more experience during the later, more mature years of operation than does TMI-1 when nuclear units characteristically operate with a higher average capacity factor than young plants (*i.e.*, plants with up to four years of commercial operation). Moreover, the largest differential (72.3% v. 58.7%) in lifetime capacity factors is apparent between the performance of TMI-1 and other B&W units, which Mr. Koppe attributes to TMI-1's ability to avoid many of the problems that caused outages at these other units. Koppe, ff. Tr. 13,335, at 8-10, Table 1, Table 2.

458. Licensee also compared TMI-1's operating performance with other units on a more detailed level by reviewing the systems or components which have caused plant outages or load reductions in the industry, and evaluating whether these problems affected TMI-1. Koppe, ff. Tr. 13,335, at 10-23, Tables 3 and 4. Mr. Koppe concluded that all the systems at TMI-1 have performed as well or better than corresponding systems at similar units. *Id.*, at 23.

⁴⁵ In this comparison, Mr. Koppe included performance statistics as of March 31, 1979 for all large modern nuclear units (all units rated 400 MWe or larger), which consisted of seven B&W units, 37 PWR units, and 56 nuclear units in total, excluding the TMI units. Koppe, ff. Tr. 13,335, at 7-8, Table 1.

459. Therefore the Board queried whether a utility could increase or maintain a high capacity factor intentionally by disregarding necessary work at the plant performed only at shutdown, such as preventive maintenance. Mr. Koppe was of the view that while a plant's management could achieve this result over the short term, it would not be possible over an extended period of time because of technical specification limits. Tr. 13,350, 13,358 (Koppe). Secondly, since refueling outages are responsible for more than one-third of all plant outage time, in Mr. Koppe's view, good refueling outages are probably the way in which good management is most effective in improving capacity factor. Mr. Koppe viewed Licensee's success in this regard as a positive indicator of management competence. Tr. 13,353 (Koppe); Koppe, ff. Tr. 13,335, at 23.

460. The Board is satisfied that the high capacity factor of TMI-1 over its operating lifetime was not the result of a disregard by Licensee of safety in its efforts to resolve equipment problems and minimize the lengths of outages. While a good operating history does not in itself prove that a licensee is able to operate a plant safely, both results require good management practices. See Tr. 13,351-52 (Smith, Koppe). We believe that it is reasonable to impute good management skills to Licensee from its capacity factor operating experience.

K. Licensee's Management Response to the TMI-2 Accident

461. Issue (10) of CLI-80-5 asks:

- (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.

462. The Board received evidence on various subissues in response to this question. In its management SER (Supplement 1 to NUREG-0680, Staff Ex. 4), and in Supplement 2 to NUREG-0680 (Staff Ex. 13), and in NUREG-0760, the Staff's IE Investigation into Information Flow During the Accident at Three Mile Island (Staff Ex. 5), as well as in discussions with the Board, the Staff focused upon two issues related to the TMI-2 accident: the flow of information during the accident, and an ongoing Department of Justice investigation into past procedure practices at TMI. Staff Ex. 4, at 36-37; Staff Ex. 13, at 9-10; Tr. 13,025-72 (Moseley). Licensee provided a chronological description of the actions taken by GPU management in the days and weeks following initiation of the TMI-2

accident. Keaten and Long, ff. Tr. 13,242.⁴⁶ Mr. William S. Lee, President and Chief Operating Officer of Duke Power Company, also testified with regard to his perspective on what Licensee's response to the accident revealed about Licensee's management capability. Mr. Lee's views were based upon his work at TMI after the accident, beginning on April 4, 1979, assisting Mr. Dieckamp in overseeing on-site activities, as well as on his familiarity with Licensee's top management and organizational structure. Lee, ff. Tr. 13,251, at 1-3; Tr. 13,254, 13,273-75 (Lee). Licensee's testimony by Mr. William Wegner provided additional information on this subject, based on Mr. Wegner's involvement in TMI activities since the TMI-2 accident. Wegner, ff. Tr. 13,284, at 1-8, 33-35. The intervenors presented no testimony on this issue.

463. In its consideration of issue (10), the Board did not want to consider a minute-by-minute recap of the TMI-2 accident scenario or other topics which were reviewed in extraordinary detail in the numerous post-accident investigations, or to review the multitude of Licensee responses to the accident, which essentially consist of everything that has happened at TMI since March 28, 1979. However, we were interested in determining whether any particular actions on the part of Licensee reflected positively or negatively on Licensee's management competence, and whether any of the witnesses considered there to be more subtle factors, such as management attitude, which were deficient in Licensee's management during the events following the accident. Included in this latter inquiry was our interest in Licensee's responses to external stimuli, such as the Staff's inspections, as well as Licensee's internal reactions to the TMI-2 accident, such as whether Licensee evaluated and, if so, in what manner, the performance of individuals in the company during the accident. See Tr. 11,597-608 (Arnold).

464. A descriptive account of Licensee's on-site and off-site management response to the first day of the TMI-2 accident and in the days and weeks immediately thereafter was provided by Messrs. Keaten and Long, two members of Licensee's management who were actively involved in post-accident events. Keaten and Long, ff. Tr. 13,242. These witnesses testified to the actions taken by Licensee management during the first day of the accident. *Id.*, at 2-13. They described and commented upon the follow-up to the accident in the weeks after the accident as well, describing the technical support that was made available both on- and off-site, the establishment of communications links, and the expedited purchase and delivery of large amounts of equipment. *Id.*, at 13-27. While acknowledging that the accident led to major changes in the organization and

⁴⁶ Mr. Keaten was cross-examined on this testimony by TMIA at a subsequent hearing session. Tr. 16,524-48.

staffing of Licensee's nuclear-related activities as well as its emergency plan, Messrs. Keaten and Long offered a positive view on the actions taken by Licensee's management in connection with the TMI-2 accident. In the opinion of these witnesses, actions by members of Licensee's management in response to the accident do not reveal management deficiencies that must be corrected before Unit 1 can be operated safely. *Id.*, at 27-28.

465. Mr. William S. Lee, President of Duke Power Company and Chairman of INPO, also testified on the subject of Licensee's management response to the TMI-2 accident, both with respect to the events following the TMI-2 accident and Licensee's actions in connection thereto, and to his general views on Licensee's management structure and capability. See ¶¶ 50, 120-121, 124, 136, *supra*. Concerning the events following the TMI-2 accident, Mr. Lee believes that Licensee's management of the unprecedented technical and organizational tasks with which it was faced, along with the pressures of the event and the demands of the media, was accomplished with great skill and steadfast purpose under difficult and trying conditions. Lee, ff. Tr. 13,251, at 5. It appears to us that Mr. Lee is describing his view of Licensee's response after his April 4, 1979 arrival on the scene, and not Licensee's *immediate* response to the accident as Licensee's PF ¶ 277 would have us find. *Id.*, at 3; Tr. 13,279 (Lee).

466. In the Board's view, even putting aside the issue of proper disclosure of information by Licensee which we address below, the testimony of Messrs. Keaten and Long on Licensee's mechanical and technical responses to the accident, particularly on the first day, is more positive than appears warranted. For example, Staff Ex. 5 (NUREG-0760), describes the uncertainties among Licensee's technical and management personnel as to what was occurring. In the broadest sense of issue (10), of course, this entire proceeding has been addressing the lessons learned from the accident. In that context, deficiencies in responding to the accident, whether or not they were peculiar to Licensee, are and will be addressed in other sections of our decision, such as training, management organization, emergency planning, etc.

467. It appears to us that the broader perspective of Licensee's consultant, Mr. Wegner of BETA, is more accurate. In Mr. Wegner's view, the accident at TMI-2 should be viewed as an event through which industry problems, which were not the result of the errors of a few people or a group of individuals, or unique to TMI-1, were made public. The stage was set for the accident at TMI-2 many years ago, according to Mr. Wegner, based on problems applicable to the entire civilian nuclear power industry. Wegner, ff. Tr. 13,284, at 33-34; Tr. 13,320-22 (Wegner). This is consistent with Mr. Lee's testimony. Tr. 13,269-71, 13,273-74 (Lee); Lee, ff. Tr. 13,251, at 9-11. While not all of these deep seated problems have obvious solutions, nor have they been corrected to the point where Mr.

Wegner is fully satisfied, in his view, GPU has made more progress than other utility companies in implementing changes as a result of the accident and, more importantly, is not now deficient in its corporate or plant management such that Unit 1 cannot be operated safely. He therefore concludes that there are sufficient management and technical capabilities within GPU to permit restart of TMI-1. Wegner, ff. Tr. 13,284, at 34-35.

468. There have been numerous special investigations into the TMI-2 accident conducted from various vantage points. Included in this list is IE's investigation of the accident, NUREG-0600, in which the Staff provides an account of the actions and management decisions undertaken by those members of Licensee's management who were called to the site to provide emergency direction to cope with the operational aspects of the accident. Staff Ex. 4, at 36. NUREG-0600 also addresses the additional support that was provided through Licensee's organization and by other parties to support the on-site operational activities. *Id.* In his cover letter forwarding the escalated enforcement action which resulted from the NUREG-0600 IE investigation findings, the Director of IE stated that "the NRC Staff will consider the effectiveness of actions taken in response to this correspondence in developing its position on readiness for restart before the Atomic Safety and Licensing Board constituted to consider the restart of Unit 1." Staff Ex. 4, Appendix A, at 1. As a result of the IE investigation findings and subsequent enforcement action, Licensee responded in a number of ways including questioning some of the conclusions reached by IE, paying a fine, reaching an agreement with the Staff with respect to acceptable corrective actions, and transmitting additional responses to document corrective actions taken or to be taken for each item of noncompliance identified in the original Notice of Violation. *Id.*, at 1-7. As a result of Licensee's responsiveness, although the implementation of corrective actions was not completed at the time of testimony on February 10, 1981, there are no remaining items raised by IE's investigation of the accident where IE considers Licensee's response to be inadequate, or where there remain differences between the positions of IE and Licensee. Tr. 11,982 (Keimig). The Board considers this fact to be a positive factor in our assessment of Licensee's response to the TMI-2 accident, in particular, and in general, an indication of a responsible management attitude by Licensee towards its nuclear-related activities.

469. An important focus of several extensive investigations and reports thereof, Congressional inquiries, Commission comments, etc., has been deficiencies in the flow of information regarding plant conditions from the Licensee to NRC and state authorities particularly on the first day of the accident, March 28, 1979. The Board is aware of and generally familiar with the contents of the following documents on this subject which are not in evidence in this proceeding:

1. NRC Special Inquiry Group ("SIG" or "Rogovin") Report: Volume I (particularly 14-23, 27-44, 156-60); and Volume II, at 894-913 (January 1980).
2. Reporting of Information Concerning the Accident at Three Mile Island, a report prepared by the majority staff of the Committee on Interior and Insular Affairs of the U. S. House of Representatives ("Udall Report") (March 1981).
3. NUREG-0600 (August 1979) — Looked at selectively to compare summaries of particular occurrences with other reports (e.g., § 4.14 re pressure spike).
4. Memorandum, M. Rogovin and G. T. Frampton, Special Inquiry Group to Chairman Ahearne, re: Questions Submitted by Congressman Udall, and attachment: Evidence On Questions Posed to Chairman Ahearne by Congressman Udall in Letters of January 21 and February 4, 1980 (March 4, 1980).
5. Letter, Chairman Ahearne to Congressman Udall (February 13, 1981), enclosing January 27, 1981 IE Notice of Violation based on NUREG-0760, and individual letters to Congressman Udall from each of the Commissioners regarding their views with regard to NUREG-0760 and whether information was intentionally withheld by Licensee.

470. The only testimony directly in evidence on the information disclosure issue is NUREG-0760 (Staff Ex. 5), and the testimony of its sponsoring Staff witness, Mr. Moseley. Tr. 13,023-78 (Moseley). Throughout the proceeding before and after Mr. Moseley's appearance, we reminded the parties including the Commonwealth, Mrs. Aamodt, and particularly TMIA, that they could present witnesses on the disclosure issue, including the Udall Committee staff report, if they had a sponsoring witness and presented it on a timely basis. E.g., Tr. 12,006-007 (Dornsife, Smith - February 10, 1981); Tr. 16,547-48 (L. Bradford, Smith - March 27, 1981); Tr. 20,776-82 (Aamodt, Smith - April 30, 1981); Tr. 21,011-15 (L. Bradford, Smith - May 1, 1981); Tr. 22,989-93 (Smith), 22,997-99 (L. Bradford, Smith - July 9, 1981). We explained why it was not permissible simply to take official notice, over objections, of other investigations, such as the Udall Report, for the truth of the matters asserted. *Id.* We further explained, however, that the Board is aware of the other investigations and

reports. We carefully considered whether to pursue the disclosure issue further on our own and decided not to do so. *Id.* We will reiterate our reasons in greater detail here.

471. In the course of the following discussion, we will in part reference the documents listed above which are not in evidence. We do so as part of our consideration of why we did not expand the hearing on our own to hear other evidence on the disclosure issue. We cannot, and do not, find any facts solely on the basis of documents not in evidence.

472. The IE NUREG-0760 investigation concluded that information was not intentionally withheld from the NRC or the Commonwealth on the day of the accident, but significant information did not adequately flow (either on the site or off the site), and that Licensee was not "fully forthcoming" in appraising the Commonwealth on the first day of the uncertainty of or potential for degradation of plant conditions. Staff Ex. 5, at 10-11; Staff Ex. 13, at 9; Tr. 13,025-27 (Moseley).

473. The specific conclusions reached in NUREG-0760 (at 10-11) were:

1. There was significant information that did not adequately flow either on the site or to the necessary offsite groups on the day of the accident.
2. On the day of the accident, an effective system did not exist to ensure adequate information flow; i.e., to provide significant information for dissemination and evaluation within the onsite organization or offsite within the Met Ed and GPU organizations as well as the NRC, Commonwealth of Pennsylvania, and other agencies.
3. Those individuals on site failed to understand the extent and significance of the problems confronting them on the day of the accident; this contributed to the inadequate flow of information.
4. Met Ed was not fully forthcoming on March 28, 1979 in that they did not appraise the Commonwealth of Pennsylvania of either the uncertainty concerning the adequacy of core cooling or the potential for degradation of plant conditions.
5. Information was not intentionally withheld from the State on the day of the accident.
6. Information was not intentionally withheld from the NRC on the day of the accident.

7. The NRC did not have an effective system to ensure that information was properly accumulated, evaluated, and disseminated.
8. Reporting requirements, both to NRC and to the State, were not sufficiently specific on March 28, 1979.

474. Without going into details which are fully described in NUREG-0760 and the other reports not in evidence which we have listed above, the disclosure issue includes the following items of information: the Licensee calculated projected dose rates for Goldsboro of 10 R/hr and higher; the elevated temperature indications of the hot-leg and in-core thermocouples; and the containment pressure spike. Also included, particularly for the uncertainty and potential degradation of reactor conditions which they should have disclosed if properly evaluated, are the times and/or nature of operation of the High Pressure Injection (HPI) and let down systems, the reactor coolant pumps, and the Pilot Operated Relief Valve (PORV, also referred to as the EMOV). The above is not an exhaustive list of all matters. Tr. 13,026 (Moseley). Staff Ex. 5 (NUREG-0760). *See also*, for a correlation of the items discussed, *e.g.*, the Udall Report and the Rogovin Report and Memorandum, *supra*.

475. The communication or failure thereof by the Licensee to the Commonwealth includes a meeting with Lt. Governor Scranton at his office at or about 2:30 p.m. on March 28. The senior Licensee representatives were the Vice President for Generation, John Herbein, and TMI Station and TMI-2 Unit Manager Gary Miller. Commonwealth personnel present in addition to the Lt. Governor included Thomas Gerusky, Director of the Pennsylvania Bureau of Radiation Protection. *See, e.g.*, Staff Ex. 5, at 7, 42. While we do not rely on Mr. Gerusky's interview with the IE investigators for the truth of the matter asserted since he was not a witness before us subject to questions, we note that Mr. Gerusky was later unhappy, based on his perception of the meeting, that Messrs. Herbein and Miller conveyed the view that the accident was over and everything was under control. Staff Ex. 5 (NUREG-0760), at 42, Appendix B, at 113-1; *see also* Udall Report, at 110-116, which includes excerpts from Mr. Gerusky's interview by IE.

476. As appears throughout all of the reports, Mr. William Dornsife, a nuclear engineer with the Pennsylvania Bureau of Radiation Protection, was one of the prime state contacts to whom Licensee passed information on the first day. He was not at the meeting in the Lt. Governor's office. If further investigation is pursued, which we did not deem worthwhile to do, further inquiry could be better focused on the extent to which Mr. Dornsife (as compared to Mr. Gerusky) knew or better appreciated infor-

mation by the time of the meeting and whether Mr. Dornsife would have interpreted comments by Messrs. Herbein and Miller at the meeting differently. We note, however, that Mr. Dornsife, like Mr. Gerusky, believed the plant was stable although not in the desired mode (Staff Ex. 5, at 41), and that he too did not know of any uncertainty as to whether the core had possibly been uncovered for a significant period of time early on the morning of March 28. Compare Staff Ex. 5, Appendix B, at 104-3 (Dornsife) with *Id.*, at 105-3 and 105-4 (Gerusky).

477. Conclusion 4 of NUREG-0760 that the Licensee was not fully forthcoming on the day of the accident in failing to inform the Commonwealth of the uncertainty of or potential for degradation of plant conditions appears to us to be inconsistent with conclusion 5 that information was not intentionally withheld from the Commonwealth on the day of the accident. One possible explanation of this is apparently that the IE investigators believe that the predominant factors in the information flow problems were their conclusions 1, 2 and 3, *supra*. See also Tr. 13,027 (Moseley). IE may be equating "intent" with a malicious motive rather than a conscious decision to hold back information. See Tr. 13,056 (Moseley), and compare use of "willful withholding" in the Rogovin Report, quoted *infra*. In our view, to be "not fully forthcoming" is also to intentionally (in the sense of consciously) withhold information. See also, letter from Commissioner Gilinsky to Congressman Udall, February 13, 1981. Therefore, interpreted in best light to Licensee, NUREG-0760 concludes that Licensee's officials did not understand the accident and while its officials consciously held back information and uncertainties about the significance of that information for the condition of the reactor, they may have done so because they did not appreciate the severity of the situation. See also Tr. 13,035-36 (Moseley). As Commissioner Hendrie stated in his letter to Congressman Udall of February 20, 1981, this is cold comfort indeed.

478. The problems of communication organization and mechanics in an emergency, and appreciation of plant parameters, are the subjects of the bulk of this hearing in the context of training, management, design changes, and emergency planning. A policy to emphasize early release of preliminary information, which has become a keystone of the new NRC rules and guidance on emergency planning, can solve the problem of a misguided past desire not to alarm the public by preliminary release of information. Not so easily dealt with would be a conscious desire to mislead on the part of a licensee. We could identify no evidence in any of the investigations that any such possible actions by individuals employed by Licensee at the time of the TMI-2 accident was part of a management decision to do so, *e.g.*, a conspiracy or company approach. The concern therefore devolves to individuals.

479. [This finding was modified by the Board on September 2, 1981.] The focus on individuals who failed to disclose information of both NUREG-0760 and the Udall Report, as well as the Rogovin Report and Memorandum and the letters from the NRC Commissioners to Congressman Udall, was on Gary Miller and John Herbein. Mr. Miller had the role of Emergency Director and was in command in the Unit 2 control room. He is currently the Manager of the Startup and Test Department in the Technical Functions Division of GPU Nuclear Corporation. Wilson, ff. Tr. 11,722, at 11 and Fig. 1. In this position he is not a member of the TMI-1 operating staff. Counsel for Licensee acknowledges that Mr. Miller "... plays an important part in planning and directing the TMI-1 startup program and the testing of all significant plant modifications." Letter, Counsel for Licensee to the Board, August 28, 1981. However, it appears to us that Mr. Miller is now in more of a support role rather than a role involving direct decision-making of line operating authority over the operation of TMI-1. It also appears that his most significant connection to the operation of TMI-1 would be during a limited time during startup when all of Licensee's important officials and technical talent will collectively focus their attention on activities concerning the safe operation of TMI-1. We note further that no party has alleged, either in questions at the hearing or in proposed findings, that Mr. Miller has been demonstrated to be unfit for his present position by his conduct in the information flow activities at the time of the TMI-2 accident. There were no questions asked of Mr. Wilson about Mr. Miller's position. Tr. 11,720-56. Indeed, TMIA, the party most vigorously pressing the information flow issue with respect to Licensee's management integrity, declined to question Mr. Wilson on his testimony. Tr. 11,754-55 (L. Bradford, Smith). The issue of Mr. Miller's role in information flow activities at the time of the accident was not pursued on the record of this proceeding. Although an issue involving integrity is always relevant to anyone's fitness for a job, we believe the issue of Mr. Miller's role in the flow of information *qua* Mr. Miller's capability is less important than if he had retained important line operating or direct decision-making authority over the operation of TMI-1.

480. Mr. John Herbein was Vice President for Generation at the time of the accident. He was the senior Licensee manager in proximity to the site from the time of his arrival at approximately 11:30 a.m. on March 28, 1979. Mr. Herbein is no longer in a direct operational position, but he now holds an important support position described elsewhere in this decision as GPU Nuclear Corporation Vice President for Nuclear Assurance. In addition, he is the third designated Emergency Support Director. Tr. 14,784-85 (Rogan). In the perhaps unlikely, but nevertheless possible, event that the first two people are not available, Mr. Herbein would be an important official in any future emergency at TMI-1. On the day of the

accident, he set up a command post at the Observation Center which is off-site but on the river shore adjacent to the island. Keaten and Long, ff. Tr. 13,242, at 6. It appears throughout the investigation reports that Mr. Herbein received his information at the Observation Center primarily and perhaps almost exclusively from Mr. Miller. Therefore a determination of what Mr. Herbein knew and comprehended about what he knew, and when, to a great extent depends upon a determination of what, and when, Mr. Miller knew and comprehended and whether, when and what information he reported to Mr. Herbein.

481. Compounding the problem of ascertaining more precisely and definitively whether Mr. Herbein's role requires future action with respect to restart of Unit 1 is that even where the depositions are reasonably consistent, the different investigating groups, and even the individual Commissioners, reached different conclusions on the issue of intentional withholding of information. For example, according to the Rogovin Report, Mr. Herbein believes he was given general information that high thermocouple readings were obtained, but were discounted. Rogovin Report, at 90. If believed and understood in the context of other information, the readings should have indicated serious core cooling problems, and possibly uncovering. Staff Ex. 5 (NUREG-0760), at 18-20. However, the extent to which even Mr. Miller and other on-site Licensee personnel appreciated the information is uncertain and emphasized differently by the reports. *Compare Id.*; Rogovin Report, at 898-902; Udall Report, at 22-38.

482. The extensive depositions taken by the earlier Rogovin Special Inquiry Group, supplemented by and viewed together with the extensive depositions taken by the IE inquiry group as reported in NUREG-0760, are not consistent with respect to what was known and when it was known by Mr. Miller, *e.g.*, knowledge and appreciation of the pressure spike discussed below in connection with Mr. Dieckamp's telegram. The IE investigators concluded that inconsistencies between statements by different individuals, and between statements at different times by the same individual, were not the result of lying. Tr. 13,028-29 (Moseley). We accept that there are other plausible explanations for the inconsistencies as noted by IE (*Id.*), but we see no basis in NUREG-0760 to conclude that no individual lied to the interviewers.

483. The conclusion of the Rogovin Report, which preceded NUREG-0760, and the Rogovin authors' explanation of that conclusion are worth noting, again not for the truth of them, but to illustrate the full semantics and nuances of the varying interpretations. The Rogovin Report, at pages 159-160 concludes:

In sum, we concluded that the evidence failed to establish that Met Ed management or other personnel willfully withheld infor-

mation from the NRC. There is no question that plant information conveyed from the control room to offsite organizations throughout the day was incomplete, in some instances delayed, and often colored by individual interpretations of plant status. Indeed, information conveyed by Met Ed, NRC, and B&W employees in the control room to their own managements and offsite organizations was in many cases incomplete and even inaccurate.

However, based on the evidence, we could not conclude that the causes of this breakdown in information flow went beyond confusion, poor communications, and a failure by those in the control room, including NRC and B&W employees, to comprehend or interpret the available information, a failing shared to some extent by offsite organizations as well.

A number of factors other than deliberate attempts to downgrade the seriousness of the situation could have accounted for the failure of the control room crew to communicate critical information. These include the inability to recognize and comprehend the full significance of the information, and certain psychological factors: the difficulty of accepting a completely unexpected situation, the fear of believing that the situation was as bad as the instruments suggested, and a strong desire to focus on getting the reactor stable again rather than dwelling on the severity of the accident.

The failure to recognize and act on significant data in our view demonstrates a lack of technical competency by site employees to diagnose and cope with an accident. Moreover, the inability of the utility's management to comprehend the severity of the accident and communicate it to the NRC and the public was a serious failure of the company's management. But neither lack of such a capability nor the psychological factors mentioned above amount, in our view, to an intentional withholding of information.

Moreover, NRC and B&W employees in the control room also did not recognize or communicate critical information. And their offsite organizations did no better, and perhaps worse, than the utility's offsite engineers at GPU in New Jersey in demanding reporting of important information and in recognizing the significance of the information that they did receive. The fact that NRC and B&W did no better than Met Ed/GPU in reporting

critical information up the management chain and acting upon it tends to support our conclusion that there is no evidence to show willful withholding of information by Met Ed from NRC.

484. In their Memorandum to Chairman Ahearne of March 4, 1980, the chief authors of the Rogovin Report (at 3-5) explained that:

The reasoning which led to this conclusion, as set forth in some detail in Volume II and explained in the Commission briefing on January 24, 1980, at page 59 of the transcript, is as follows. We found no *direct* evidence of willful withholding of critical information: no witness testified that he consciously withheld information he regarded as important or that he thought anyone else did, or that he overheard any discussions about withholding information or gained a firsthand impression that such conduct was occurring. It was this type of evidence to which we referred in the last sentence quoted above.

Obviously, such testimony is often not easy to elicit from those directly involved. However, in this case there were a large number of people present in the Unit 2 control room on March 28 from a variety of organizations (including the NRC). None of those deposed or interviewed could provide any direct evidence of a cover-up.

There *is* evidence from which one could infer that information was intentionally withheld from the NRC. Such an inference could be drawn from the very fact that some critical information was not in fact reported; from a judgment that the explanations given as to why information was not believed or why it was discounted, albeit plausible, are not convincing; and from the existence, in a few instances, of conflicting testimony about who knew what at what time, which could be read as an attempt by witnesses to deny falsely that they were aware of critical information that they knew should be reported.

The problem with the drawing of such an inference is four-fold. First, it is merely an inference; there is no direct evidence to support it.

Second, although there is some sworn testimony that could support such an inference, in order to draw the inference it is necessary to disbelieve the sworn testimony of a number of individuals. As our Report and the attached paper make clear, in the case of the in-core thermocouples it is necessary to disbelieve

the testimony of at least five people — Porter, Miller, Ross, Rogers and Logan — that the high readings were not believed to be accurate when reported to Miller and were therefore discounted.

. . .

This is not to say that none of these individuals may not have given false testimony under oath, or recalled events incorrectly. However, in the absence of direct testimony tending to show that they have testified falsely, such a conclusion would necessarily be based on surmise rather than on evidence.

Third, there are plausible explanations other than intentional concealment that have been advanced for the discounting of the information in consistent sworn testimony by control room personnel, and there are plausible alternative explanations for the failure to report this information other than willful withholding, including confusion, fear, and a desire to focus on getting the plant stable. These are discussed in our Report. In hindsight, the explanations given for disbelieving some of the information may not be very convincing to some, but from that one cannot necessarily conclude that the testimony is false.

Finally, we know that critical information was also not reported by NRC and B&W personnel to their own managements during the day, or by Met Ed control room personnel to off-site Met Ed and GPU officials. No one has suggested that such conduct involved intentional concealment. Indeed, as our Report points out, top NRC officials including the acting Chairman had information on March 28 indicative of core uncovering, yet this information was not communicated to Congress the next day in a formal briefing. As we noted in our Report, these facts tend to lend some weight to the notion that confusion and lack of competence by Met Ed employees, rather than a conspiracy to withhold information, was involved. [Emphasis in original.]

485. We have also looked at draft and final conclusions of the Udall Committee staff report, as noted in our letter of April 30, 1981 to Congressman Udall. See Tr. 20,776-82. Again, we discuss a report which is not directly in evidence in the context of our awareness of the information and views expressed in it, not for the truth of the matter asserted in it. The original draft conclusion, appearing on page 247 of the draft Udall Report, was:

The record shows that on March 28, 1979 TMI management did not provide State and Federal officials information that was understood by them and necessary to assess accurately the condition of the reactor and the likelihood of a major radiological release. The preponderance of evidence indicates that such information was intentionally withheld by TMI management from State and Federal officials. The preponderance of evidence indicates, in addition, that the TMI managers presented to State and Federal officials misleading statements that conveyed the impression that the accident was substantially less severe and the situation more under control than was in fact the case.

486. The conclusion of the final printed Udall Report (at p. 121) was modified to read:

The record indicates that in reporting to State and Federal officials on March 28, 1979, TMI managers did not communicate information in their possession that they understood to be related to the severity of the situation. The lack of such information prevented State and Federal officials from accurately assessing the condition of the plant. In addition, the record indicates that TMI managers presented State and Federal officials misleading statements (i.e. statements that were inaccurate and incomplete) that conveyed the impression the accident was substantially less severe and the situation more under control than what the managers themselves believed and what was in fact the case.

487. The NRC Staff witness who headed the IE NUREG-0760 investigation team testified that in his view a comparison of the final and draft conclusions of the Udall Report shows significant changes and a "softening" of the conclusion. Tr. 13,038-39 (Moseley). We are less certain. The conclusion that information was intentionally withheld was deleted. However, the last sentence of the conclusion was modified in the other direction. In restating the draft conclusion that TMI managers made misleading statements to government officials which conveyed a more optimistic impression than was in fact the case, the final version of the conclusion added that the misleading statements were inaccurate and incomplete and that the TMI managers themselves believed the situation to be different than what they conveyed. Perhaps the change is analogous to our difficulty in reconciling "not intentionally withheld" with "not fully forthcoming" in NUREG-0760, and the different nuances between the two Udall Report versions is a difference in the motives ascribed to the TMI managers by the Udall Report. However, we do not know. As we stated in our letter of April 30, 1981 to Congressman Udall, we infer from the final

language that notwithstanding the deletion, his staff's report still concludes that information was withheld intentionally and further that information was presented inaccurately by TMI management on the day of the accident.

488. The NUREG-0760 extensive investigatory data base, including depositions of many individuals, utilized and expanded upon the earlier Rogovin investigation. It appeared to us and to the NRC Staff that the Udall Report, although emphasizing different aspects, relied upon the IE and Rogovin data base rather than any additional sources. Tr. 13,043-44, 13,065 (Moseley).

489. Comparisons of the conclusions of the investigations are not easy. We have voiced some speculation above which could at least partially reconcile apparent inconsistencies within the same report and between reports, but it is just that — speculation. It appears to us that the different conclusions are to a large degree due to differences in views by the investigators of how fully the TMI managers, primarily Messrs. Herbein and Miller viewed together, comprehended the information known to them. This is more difficult than determining what information was known (as distinguished from comprehended) to Mr. Miller, although this too is not clear. In addition, it is much more difficult to separately determine what Mr. Herbein himself comprehended. The reports of the investigations do not focus sufficiently for our purposes on what information he had knowledge of.

490. Had parties elected to litigate the issue of Mr. Herbein's role in the disclosure of information, they would have been permitted to do so. We have above cited the inaction of the parties in not presenting witnesses competent to sponsor the Udall Report into evidence.⁴⁷ However, based on our reading of the Udall Report and on our analysis above, such testimony by itself was not likely to provide a solid basis for determining whether Mr. Herbein as an individual either consciously (intentionally) failed to disclose significant information or conveyed information he knew to be inaccurate about the condition of the reactor. We think it even more significant that parties did not question Mr. Herbein about this matter. In addition, the Commonwealth was an active participant in the hearing. It has not pursued this matter. Had it wished to do so, it would have been

⁴⁷ On the last day of the hearing, TMIA asserted that the principal author of the Udall staff report would come to the hearing if the Board so requested. Tr. 22,997-98. It is not clear if TMIA meant he would have testimony to offer on behalf of a TMIA sponsored direct case, or just that he would come to answer questions if the Board wished to ask him any. This was obviously much too late for TMIA to request even more time to present a witness. The Board, for the reasons indicated months before, and reiterated several times on the record as cited above, ¶ 470, *supra*, determined not to request witnesses to pursue the matter on its own.

logical and easy for the Commonwealth to present its own people, notably Mr. Gerusky and/or Mr. Dornsife, as witnesses on an important part of the issue — what was disclosed to them and when by Mr. Herbein. It is clear that the Commonwealth, as well as the Staff, have elected not to challenge Mr. Herbein's fitness for his present position. This is important because the principal role of Mr. Herbein effected by a future emergency situation is that of third in line to be Emergency Support Director for TMI-1. An expressed lack of confidence by the Commonwealth, and to some extent by the NRC Staff, in an individual to fill that job would have been viewed very seriously by us because of the significant close working relationship between Licensee and the Commonwealth's officials required by the emergency plans.

491. Could we have pursued the matter of Mr. Herbein's role in the flow of information further on our own? Yes. However, it is very difficult for the Board to act as investigators when no party is pursuing the issue. It was and is our view that given the background set forth above of the other investigations reaching differing conclusions, we were unlikely to better reach a definitive conclusion based on the same data base. In order to focus better on the knowledge and comprehension of and disclosures by Mr. Herbein, further extensive investigation, including the testimony of about ten individuals in our preliminary estimate, would be required to add to the data base. This would have diverted us both on and off the record from matters in the case which are more important to the determination of whether Unit 1 can be operated safely and would have extended the length of the hearing very significantly, without any great confidence by us that we could even then reach a conclusion. In addition, the most adverse outcome of such an inquiry of our own from the standpoint of the Licensee would be the removal of Mr. Herbein from some or all of his proposed duties.⁴⁸

492. We recognize that we are charged with the initial determination of whether, and if so under what conditions to permit restart. However, we are also influenced by the fact that the Commission itself, in the context of its oversight of the Staff's enforcement actions, elected not to recommend further censure of individuals because of improper disclosure of information. After reviewing the various investigations in order to determine whether to proceed further on our own, we developed an enhanced appreciation for the frustration expressed by Commissioner Bradford in his

⁴⁸ Consistent with our assurances to the other parties that we would accept a full litigation of management's response to the accident, we also assured Licensee that, in the event of such a litigation, we would take all the time necessary to assure a full objective record. Our concern was that Licensee not lose the best people available to it solely because of the perception by others of their accident role. Tr. 11,608-09 (Smith).

letter of February 24, 1981 to Congressman Udall, in stating:

Did they withhold their full range of concerns over what had happened early in the day? I believe so. Deliberately? I think perhaps. Am I confident that my beliefs could be proven? No. That they are correct? Only moderately. Is there reasonable doubt about them based on the investigations as they stand? Certainly. Have I personally interviewed any of the witnesses? No. Could I responsibly recommend further prosecution or censure of individuals on the basis of my conclusions? No.

493. For the reasons set forth above, we concluded that the public health and safety would not be adversely affected if we failed to conduct our own independent investigation into Mr. Herbein's role in the disclosure of information to Commonwealth and NRC officials on March 28, 1979.

494. TMIA would have us find Mr. Herbein unfit for his present position as a result of his response to the accident for reasons in addition to information disclosure.⁴⁹ TMIA argues that Mr. Herbein has demonstrated incompetence in permitting Mr. Miller to remain in charge as on-site emergency director upon the occurrence of the accident. TMIA Reply PF ¶¶ 26-29. TMIA's argument is somewhat rambling. It appears that TMIA is alleging that Mr. Miller was not competent and Mr. Herbein should have known this in advance based on: (1) Mr. Miller's statement to investigators well after the accident (Staff Ex. 5, Appendix B, at 51-1) that he was under stress and had not been "schooled" for that unexpected situation; and (2) because, according to page 918 of the Rogovin Report, Mr. Miller's heavy responsibilities prevented him from attending almost all of the Plant Operator Review Committee (PORC) meetings for the year before the accident. We find there is no support in this for the conclusion that Mr. Herbein be found incompetent for not removing Mr. Miller as emergency director.

495. TMIA also cites two disagreements during the first day between Mr. Herbein and Mr. Miller reported by the Rogovin Report (at 834) as support for the proposition that Mr. Herbein is incompetent for not removing Mr. Miller. TMIA Reply PF ¶¶ 28-29. Assuming that the Rogovin Report is accurate on this point since it is not in evidence, it does not support TMIA's proposition. One disagreement reported, Mr. Herbein's

⁴⁹ TMIA to a great extent relies on assertions of fact not in evidence, such as matters in the Rogovin Report. We discuss these assertions *arguendo* for the purpose of addressing TMIA's points. We emphasize that we cannot and do not make factual findings which are solely supported by documents not in evidence.

decision to order that steam discharges to the atmosphere be stopped, is in essence described as a close judgment call by the Rogovin Report — hardly the type of disagreement demonstrating incompetence by a subordinate.

496. The other alleged disagreement between Mr. Miller and Mr. Herbein is the decision of Mr. Herbein to take Mr. Miller (as well as the Superintendent for Technical Support) from the plant with him at about 2:00 p.m. to brief the Lt. Governor, resulting in their absence from the plant until about 4:30 p.m. Keaten and Long, ff. Tr. 13,242, at 7; Rogovin Report, at 836. We note that the Rogovin Report is internally inconsistent since at page 40 it states it was Mr. Miller's decision to accompany Mr. Herbein. In any event, it was certainly Mr. Herbein's final decision since he was in charge. We are struck by the illogic of TMIA's argument that Mr. Herbein showed poor judgment in allowing Mr. Miller to remain in charge because Mr. Miller wanted to stay, when most of the investigators and TMIA agree with the view which TMIA ascribes to Mr. Miller — that he should not have left the plant.

497. Looking at the matter more directly, we do not find the poor judgment of Mr. Herbein in acquiescing to the request of his superiors that he brief the Lt. Governor in response to the latter's request, compounded by the poor judgment shown by Mr. Herbein in either directing or allowing Mr. Miller to accompany him, to be a basis for finding Mr. Herbein incompetent to continue in his responsibilities.⁵⁰ We conclude the same with respect to TMIA's disagreement (PF ¶ 87) with Mr. Herbein's

⁵⁰ Although not overcoming the poor judgment shown by the departure of Messrs. Herbein and Miller, we note they were not incommunicado. They had beepers as well as an open telephone line to the plant while at the Lt. Governor's office, and other high-level personnel were left in charge. Keaten and Long, ff. Tr. 13,242, at 7. This is consistent with the Rogovin Report, at 837. TMIA also argues that part of the 2-1/2 hour time is unaccounted for (TMIA PF ¶ 90 and Reply PF ¶ 32), apparently relying upon but not citing the Udall Report, at 109, which assigns one hour to round trip travel time and about 30-45 minutes for the meeting according to NUREG-0600, which like the Udall Report is not in evidence. We do not understand what TMIA would have us conclude about this, but if it were important to TMIA, it certainly made no real attempt to clear it up on our record (for example by asking Mr. Herbein). Although TMIA did ask Mr. Keaten, he did not know time break-downs during the 2-1/2 hour 2:00 p.m. - 4:30 p.m. departure from and return to the plant period. Tr. 16,541-42 (Keaten). We note that the Rogovin Report, also not in evidence, states the meeting lasted 90 minutes, at p. 40, which if correct would account for the time. We did not pursue on our own what appeared to us to be a minor discrepancy in the absence of specific allegations of why it was important. There was no pursuit of the matter at the hearing by TMIA or other parties (except for the limited questions to Mr. Keaten).

decision to remain off-site, although close by in the Observation Center, rather than with Mr. Miller in the control room, without exploring on our own whether this decision was poor judgment at the time it was made. We note also that these are two of the many matters for which the correct actions are now specified in advance in emergency plans in defining the roles of key personnel such as the emergency director and emergency support director.

498. As noted in TMIA's Reply PF (¶¶ 34-35), but not in TMIA's initial findings, Mr. Dieckamp sent a mailgram to Congressman Udall with a copy on May 9, 1979 to Commissioner Gilinsky in which he stated:

There is no evidence that anyone interpreted the "Pressure Spike" and the spray initiation in terms of reactor core damage at the time of the spike nor that anyone withheld any information.

Quoted in Staff Ex. 5 (NUREG-0760), at 45, and mailgram appearing in full at *Id.*, Appendix B, at 117-1 to 117-2.

499. The pressure spike referred to was a sudden increase in containment pressure from about 3 to 28 psig, followed by a rapid decrease to 4 psig, at about 1:50 p.m. on March 28, 1979. It was caused by a sudden burning or explosion of hydrogen, which would be symptomatic of core damage. *See, generally*, Staff Ex. 5 (NUREG-0760), at 22-31. As described in NUREG-0760, and in other investigation reports, there are direct statements to the investigators that two TMI shift supervisors present in the control room at the time, Joseph Chwastyk and Brian Mehler, saw the pressure recorders register the sudden increase and decrease, were aware the pressure actuated containment spray pumps had come on, and believed the pressure spike to be real. Mr. Chwastyk stated that at the time he believed the cause to be a hydrogen explosion. *Id.*, at 26-29. There are differences in statements as reported in the investigation reports, including NUREG-0760, as to what other people including Mr. Miller and NRC inspectors reported to be present in the control room believed the "thud" some heard to be, what they were told by other people, whether the spike was believed to be real, etc. The spike was not reported to the Commonwealth or NRC officials on the day of the accident.

500. In the face of the Chwastyk and Mehler statements, the IE investigators reviewed the record to determine whether Mr. Dieckamp's mailgram was a false material statement and concluded:

[F]or a statement to be considered a false statement under Section 186 of the Atomic Energy Act of 1954 as amended, the statement must be made in a license application or it must be a statement of

fact required under Section 182 of the Act. The Dieckamp mailgram was neither of the above. Therefore, it does not constitute a potential material false statement under the Act.

Staff Ex. 5, at 45-46.

501. The Board, of course, could not accept such a simple test for "false material statement" because our inquiry was a broader one touching upon management integrity. Mr. Moseley representing IE as a witness before the Board made it clear that IE did not rest entirely upon such narrow grounds as duty to report under the Atomic Energy Act. Although the statement was literally false because in fact there was "evidence" of the pressure spike, IE concluded that Mr. Dieckamp believed the statement to be true when made. Tr. 13,060-64 (Moseley). We believe that Mr. Moseley's conclusion is reliable enough to set the matter to rest. The IE investigation is equal to or better than any the Board could make. With no party pursuing the matter, and with our limitations as judicial officers, we considered it better to rely upon the conclusions of professional investigators than to try on our own to reproduce an involved and extensive investigation in the hearing room. Moreover we have no information not discussed in the investigation report to bring into question the IE conclusion that Mr. Dieckamp believed his statement to be true.

502. However, in reviewing the record on this matter we cannot identify any place where the question has been put directly to Mr. Dieckamp. If IE questioned him they did not report it, nor did the Rogovin inquiry group, nor for that matter did the majority staff of the Interior and Insular Affairs Committee. The Commissioners did not note it as an open item in their review of the IE investigation. Mr. Dieckamp appeared before us as a witness and seemed willing to answer questions, but no party inquired on the mailgram statement. The Board itself had not then studied the matter sufficiently to make an informed inquiry of him. In retrospect, perhaps he should have been recalled for that purpose. Perhaps also the Licensee should have presented testimony on the matter, but as we stated, at no time during the hearing did any party directly raise the question.

503. We have considered reopening the record to hear from Mr. Dieckamp on the matter, in particular on his present view, but to do so would involve a substantial delay in our decision, and would be a serious distraction from many issues directly involving the public health and safety. IE is the duly appointed investigatory arm of the Commission and we believe it is appropriate to accept its advice that the matter is not worth any additional investigative efforts. Tr. 13,062 (Moseley).

Department of Justice Investigation

504. In Supplement 1 to the Restart Evaluation Report (November 1980), the Staff presented a brief description of a separate investigation being conducted by the Department of Justice (DOJ) in response to concerns raised regarding possible falsification of Reactor Coolant System (RCS) leak rate test data for Unit 2. Staff Ex. 4, at 37. The only information on the matter we possess, beyond the brief description referred to above, is the March 1981 Staff update in Supplement 2, Staff Ex. 13, at 9-10, which states:

That investigation was initially undertaken by NRC and identified a number of apparent problems related to procedure adherence. NRC's investigative effort was suspended pending the conclusion of the DOJ investigation, at their request, to avoid parallel administrative and criminal proceedings. The DOJ investigation is still ongoing, and the NRC does not possess any information as to when it may be completed. NRC personnel involved in the suspended investigation have been requested by DOJ not to discuss the details of the matter. Since completion of the investigation of this matter by the NRC could turn up information which is related to past management practices, the matter was included in Supplement 1 to the Evaluation Report. The NRC will resume its investigation of the concerns when DOJ has completed its investigation of the matter. However, the staff has reviewed the information that it has obtained to date on the matter, and has concluded on the basis of information thus far obtained that there appears to be no direct connection with the Unit 2 accident.

505. Due to our limited information and given the posture of an ongoing DOJ investigation, we have no basis to conclude that restart should not be permitted until the DOJ investigation is complete.

506. In overall summary of CLI-80-5 issue (10), we have noted our lack of knowledge about the Department of Justice investigation. Subject to this matter, and except as may be identified in our detailed findings on particular subjects (such as training and emergency planning) elsewhere in this partial and in subsequent initial decisions, we find no deficiencies in the corporate or plant management, arising from our inquiry into management's response to the accident, that have not been corrected and which must be corrected before there is reasonable assurance that Unit 1 can be operated safely. Included in this assessment, for the reasons set forth above, is our decision not to pursue further on our own Mr. Herbein's role in the flow of information on the day of the accident. A conclusion such as this can incorrectly be understood as expressing independent findings by this Board about Mr. Herbein's role in the flow of information. Therefore

we emphasize once again that we have traveled beyond the evidentiary record in this proceeding in our discussion of CLI-80-5 issue (10) for the sole purpose of determining whether the Board on its own should produce additional evidence when no party was willing to do so. In considering due process to the parties, the public interest in a full and accurate evidentiary record, and the probabilities of making an additional contribution, we have decided to accept the record as it is. No part of the findings of fact or conclusions in this partial initial decision depends upon this special inquiry and we have made a review of this decision to assure that our findings and conclusions depend solely upon the record of the proceeding.

L. Technical Capability and Resources

507. In CLI-80-5 issue (11), the Commission directs the Board to examine:

- (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.

This issue in its broader aspects is not in dispute. Only the Licensee and Staff submitted proposed findings directly on issue (11). Intervenors address the issue in connection with discrete sub-issues such as training, operating room staffing, and maintenance practices.

508. The Technical Functions Division of GPU Nuclear Corporation, with broad centralized responsibility for operational support and technical review of GPU Nuclear's plants, is a significant departure from the organization which existed prior to the TMI-2 accident. Wilson, ff. Tr. 11,722, at 2-3. Prior to the accident, the technical resources within the GPU system were divided principally between Met Ed's Generation Engineering Department and the GPU Service Corporation. The Met Ed group, located in Reading, Pennsylvania with a total of 40 personnel, provided technical support to TMI operations and engineering staff. *Id.*, at 3, Table 1. Occasional technical assistance was provided by the GPU Service Corporation's technical staff, although the primary function of this group of approximately 108 professionals was to support new plant construction, both nuclear and fossil. *Id.*, at 3, Table 2; Tr. 11,730 (Wilson). The recently organized Technical Functions Division of GPU Nuclear Corporation has greater technical capability and resources devoted to nuclear projects than did the combined Met Ed Generation Engineering Department and GPU Service Corporation as of March 1979. Working in

Technical Functions are some of those personnel previously with Met Ed Generation Engineering, GPU Service Corporation, and professionals formerly at Jersey Central Power and Light Corporation. In addition, significant staff augmentation has occurred, and continues through Licensee's pursuit of additional technical personnel. Wilson, ff. Tr. 11,722, at 4. As of February 1981, Technical Functions now includes approximately 255 personnel, and is authorized to expand to approximately 400 in 1981, if qualified personnel can be recruited. Tr. 11,732 (Wilson). Two comparisons of Licensee's present technical resources to those existing in March 1979 illustrate the extent of expanded technical capability which Licensee had developed since the TMI-2 accident: (1) the total number of in-house professionals and the total man-years of experience has been increased by at least a factor of two; and (2) the number of in-house professionals and the total man years of experience dedicated to TMI-1 has increased by greater than factor of four. Wilson, ff. Tr. 11,722, at 4; Tr. 11,732 (Wilson). Thus, Licensee has substantially redirected and increased the technical resources available in-house to support its nuclear activities. Tr. 11,730 (Wilson).

509. Currently, approximately 155 people, or 60% of Technical Functions, is dedicated to TMI-1. The remaining 40% is apportioned between Oyster Creek (35%) and TMI-2, Forked River and Saxton. *Id.*, at 5. This allocation of resources represents only the division of GPU Nuclear's in-house technical capability; that is, if one includes Licensee's contractor resources in assessing the allocation of Licensee's technical resources, a similar number of professionals is assigned to TMI-1, TMI-2, and Oyster Creek.⁵¹ In total, Licensee has approximately 750 to 1,000 professionals working on technical matters at any point in time. Tr. 11,732 (Wilson). While the majority of Technical Functions personnel are located at GPU's Parsippany offices, a number of staff work at each of the nuclear plants, or rotate between these locations. Wilson, ff. Tr. 11,722, at 3.

510. The Vice President of Technical Functions reports to the Office of the President of GPU Nuclear Corporation. He is responsible for the quantity and quality of the staffing of the Division; the proper functioning of the interfaces of Technical Functions with the operating plants and other divisions of GPU Nuclear; the effectiveness of the licensing and technical support provided to GPU's nuclear facilities; the use and direction of outside engineering resources; and, ultimately, the technical perfor-

⁵¹ The use of a larger percentage of in-house resources at TMI-1 than at Oyster Creek is a reflection of the early involvement of the GPU Service Company in TMI-1 in comparison to Oyster Creek. Of GPU's total available technical resources, both in-house and contractor resources, 30 to 40% are devoted to TMI-1; 25 to 28% are devoted to TMI-2; and 32 to 33% are allocated to Oyster Creek. Tr. 11,733-35 (Wilson).

mance of the GPU Nuclear plants. Wilson, ff. Tr. 11,722, at 5; Staff Ex. 4, at 5. GPU Nuclear's educational and experience requirements for the Vice President of Technical Functions exceed the requirements recommended by the Staff (¶ 117, *supra*) and consist of a minimum of 15 years of responsible engineering management experience, the majority of which must be in the nuclear industry, and an engineering degree in one of the principle engineering disciplines with advanced degrees or specialized training desirable. Wilson, ff. Tr. 11,722, at 5. The current Vice President of Technical Functions is Mr. Richard Wilson, whose qualification we discuss under the section on Licensee's Managers. ¶ 144, *supra*.

511. Reporting to Mr. Wilson are the Managers of the six Departments within Technical Functions, namely, Engineering Projects, Systems Engineering, Engineering and Design, Licensing and Regulatory Affairs, Startup and Test, and Engineering Services, each of whom has at least a bachelor's degree in science or engineering and from 9 to 24 years of nuclear experience.⁵² Staff Ex. 4, at 5; Wilson, ff. Tr. 11,722, at 6-12. Figure 1. There is also a small administrative staff. The educational and professional qualifications of the Technical Functions staff includes 178 individuals with B.S. degrees of which 62 have M.S. degrees and 6 are Ph.D.'s *Id.*, at Table 3. There are 2,315 accumulated years of engineering experience in Technical Functions, of which 1,294 years have been in the field of nuclear technology. *Id.* There are also 57 individuals with nuclear operations experience. *Id.*

512. The Engineering Project Management Department provides a central project or task management capability for the Technical Functions Division. This Department coordinates the detailed tasks within the various Technical Functions departments, interfaces directly with the plants and other supporting Divisions of GPU Nuclear Corporation, directs and coordinates the work of outside technical organizations, and assumes the overall technical schedule and monetary responsibility for plant modifications. Wilson, ff. Tr. 11,722, at 6. Each plant modification project is assigned to a project or responsible engineer within the Department, who has responsibility for technical follow through until modifications are turned over to the facility's Operations staff, *Id.* At TMI-1, a senior Engineering Project Management Department staff member is presently assigned on a full-time basis to coordinate Technical Functions personnel at the site. *Id.*, at 7.

513. The Systems Engineering Department of Technical Functions provides a number of important technical capabilities for GPU's nuclear facilities. Systems Engineering directs the activities of the Shift Technical

⁵² As of February 1, 1981, one Department Manager had just left the organization, and Licensee was actively seeking a replacement. Tr. 11,723-24 (Wilson).

Advisors (STAs), who work on shift with the unit operating staff. The Department includes a sub-group that operates and programs the plant process computers. *Id.*; 11,738 (Wilson). The Plant Analysis sub-group of Systems Engineering, in addition to directing the activities of the STAs, also has two or three professionals who review industry experience as well as GPU's plant experience as reported by LERs and other kinds of communications, such as the computerized NOTEPAD system which connects Licensee to other B&W owners and provides a means by which important plant behavior information can be transmitted quickly between licensees. Wilson, ff. Tr. 11,722, at 7-8; Tr. 11,739, 11,746-51 (Wilson). See also our discussion of this function under CLI-80-5 issue (7), safety reviews and operational advice. Plant Analysis personnel also analyze the ongoing performance of the plant by, for example, running heat balances on TMI-1 and assessing the performance of equipment within the plant. Tr. 11,739 (Wilson).

514. The Safety and Analysis sub-group within the Systems Engineering Department performs safety and transient analysis work for Licensee. The Safety and Analysis sub-group includes approximately ten personnel who utilize computer codes and models of both TMI and the Oyster Creek station to carry out fairly sophisticated transient analyses.⁵³ Tr. 11,739-40 (Wilson).

515. The Engineering and Design Department of Technical Functions Division provides a centralized technical capability for engineering work needed on plant systems and components. Wilson, ff. Tr. 11,722, at 8-9. This function is similar to that provided by an architect/engineering organization, although on a reduced scale. *Id.*, at 9. This Department performs the engineering for plant modifications, interfaces with and reviews engineering performed by outside organizations, prepares drawing and specifications, investigates failures of plant systems and components and provides readily accessible technical capability to support general operations or plant outages. *Id.*

516. The Department of Licensing and Regulatory Affairs monitors and ensures continuing compliance with licensing and regulatory requirements. *Id.*, at 9.

⁵³ Licensee does not rely upon this group to perform the analyses required by regulation; instead, Licensee uses outside consultants for that purpose who have codes and topical reports which have been accepted by the NRC. Tr. 11,740-46, 11,751-52 (Wilson). Licensee does, however, use its own transient analyses as a cross-check on other work being done, and may challenge conclusions reached by outside experts on the basis of doubts which Licensee's technical personnel feel have not been fully resolved. *Id.*

517. The Startup and Test Department of Technical Functions Division provides operational experience to support nuclear engineering activities, and plans, directs and maintains responsibility for startup and testing of all significant plant modifications, using plant Operations personnel. *Id.*, at 11.

518. The Engineering Service Department is responsible for the technical document control system for Technical Functions Division, providing a central master file of plant technical data. It also develops, coordinates, and controls all internal engineering scheduling for other departments and provides engineering cost estimating support. *Id.*, at 11-12.

519. Mr. Wilson explained the circumstances under which GPU seeks additional technical support from its nuclear steam supply system designer (B&W), its architect/engineer (Gilbert Associates), or other technical consulting firms. Wilson, ff. Tr. 11,722, at 12-14. In summary, Licensee uses outside technical consultants if it determines that it needs special expertise which does not exist within GPU, the participation by an outside expert is necessary because the consultant has a unique capability or its views are considered important, when an independent viewpoint is desired, when the problem requiring resolution is generic in nature and Licensee can therefore share the cost with other utilities or the work is otherwise most cost-effective when done by an outside technical organization, and when technical resources are required to augment in-house staff during high demand periods. *Id.*, at 12-14.

520. Licensee has assured us of the availability of resources to both respond to TMI-2 recovery efforts and provide technical assistance to TMI-1, as well as Oyster Creek. With respect to the potential for TMI-2 needs (both manpower and in other costly resources) to divert Licensee from attention its technical staff ought to be paying to TMI-1, Licensee has taken steps to see that this will not occur. First of all, the TMI units are separated organizationally. Arnold, ff. Tr. 11,434, at 23. Thus, the TMI-1 and TMI-2 staffs can carry out their respective operations and recovery efforts independently from each other.⁵⁴ *Id.* Secondly, within the Technical Functions Division, which provides engineering support to both units, a dedicated technical group devoted to TMI-2 activities has been set aside within the Engineering Projects Department of Technical Functions Division, comprised of 30 individuals (7 GPU Nuclear employees and 21 individuals from consultant organizations). Wilson, ff. Tr. 11,722, at 14. In addition, Licensee has contracted with Bechtel Power Corporation to provide a large full-time technical staff to plan, evaluate, engineer, and otherwise support TMI-2 recovery. *Id.*; Arnold, ff. Tr. 11,454, at 23-24. In the future, the majority of technical resources required for TMI-2 beyond

⁵⁴ Licensee has assigned some 245 personnel exclusively to the Vice President of TMI-2. Arnold, ff. Tr. 11,434, at 23.

those provided for in the GPU Nuclear Corporation organization will be obtained from Bechtel, thereby assuring that those GPU Nuclear's resources needed to support TMI-1 are always available, and are not compromised by activities at TMI-2. Wilson, ff. Tr. 11,722, at 14-15.

521. After reviewing Licensee's technical capability to simultaneously operate TMI-1 and clean up TMI-2, the Staff was satisfied with the technical resources available to support TMI-1. Staff Ex. 4, at 5-8, 13-14; Keimig, ff. Tr. 11,946, at 9, 13-16. Because the Staff considered Licensee's in-house technical resources to be more than adequate without recourse to outside resources, it did not consider the outside resources available to Licensee. Tr. 11,963-65 (Crocker, Allenspach). Furthermore, the Staff concluded that cleanup activities at TMI-2 will not have an adverse impact upon the safety of TMI-1. Staff Ex. 4, at 38; TR. 11,981 (Crocker).

522. Licensee has strengthened its technical capabilities since the TMI-2 accident, not only by increasing the number of professionals available within the organization to provide support to GPU's nuclear plants, but also by centralizing and therefore concentrating its technical activities in one division of GPU Nuclear Corporation, by diversifying its technical capabilities, and by becoming more involved in the complex technical analyses which its technical consultants perform, such as transient analyses. Based on our review of Licensee's technical organization and resources, we find that Licensee possesses sufficient in-house technical capability to operate TMI-1 safely. This finding includes our consideration of resource demands associated with the cleanup efforts ongoing at TMI-2 and Licensee's allocation of resources to meet those demands without weakening its technical support of TMI-1. Although we do not consider Licensee's in-house technical resources to be inadequate, we nevertheless have considered Licensee's arrangements with its vendor and architect-engineer, among others, to supply additional technical expertise as necessary, to support its nuclear activities. These arrangements further support our finding that technical capability and resources to support TMI-1 are sufficient.

M. Conditions and Commitments

523. The Licensee has made a very great number of commitments relative to this proceeding relied upon by the Staff in its several Safety Evaluation Reports and by the Board in its findings; so many in fact that

the Board directed the Staff to report whether the Staff would not enforce in this proceeding any of the reported commitments. Tr. 21,289-90.⁵⁵

524. The Licensee's commitments discussed in this section are important, but no more so than many others that we have relied upon without special note. We discuss them here because for various reasons they are made conditions to any restart, because they were brought into sharp focus by the litigants, and because they cut across many discrete management issues (*e.g.*, training, operator licensing, shift manning, management qualifications) and can better be discussed together.

Commonwealth/Licensee Settlement Agreement

525. The Commonwealth of Pennsylvania in its initial proposed findings on management issues (May 15, 1981) had criticisms and requests for relief on a broad array of issues: Licensee's operator reexaminations, NRC evaluation of operator performance, simulator training, senior management training, ATOG (Anticipated Transients Operator Guidelines) training, shift staffing, and radwaste staffing. *Id. passim*.

526. Counsel for Licensee expressed surprise and requested an extension of time to consult with the Commonwealth before filing reply findings on the subjects addressed by the Commonwealth. The Commission's general policies favor negotiation and settlement. 10 CFR 2.203. This has been reemphasized most recently in CLI-81-8. 46 *Fed. Reg.* 28533, at 28534, May 27, 1981. Therefore the Board granted Licensee's request. Tr. 21,844-54 (Smith); *see also* Board Memorandum and Order of June 9, 1981.

527. The outcome of discussions between Licensee and the Commonwealth of Pennsylvania initially was reported to the Board and parties by copy of a letter dated June 22, 1981 from Licensee's counsel to counsel for the Commonwealth confirming Licensee's understandings (now Licensee Ex. 56). In general, the letter reported that based on exchanges of information, the clearing up of misunderstandings, and additional commitments made by Licensee, Licensee understood that the Commonwealth would withdraw many of its management findings (excepting those on financial qualifications and operational resources) and that Licensee would

⁵⁵We inquired whether there were:

gratuitous commitments which might lead not just the Staff but which might lead the Board, the Commission, the public and the Intervenors to believe that a situation prevails when in fact it does not. That is our concern. Tr. 21,290 (Smith). The Staff in its report (Board Ex. 10) lists two items affecting this Partial Initial Decision: its lack of requirements for minimum operator shift rotation, and the fact that Licensee has committed to implement NUREG-0737 items in accordance with the schedule for operating reactors. Where NUREG-0737 items fall within the scope of this proceeding as issues, we have addressed them.

not object to the inclusion of any or all of its commitments, detailed in the same letter, as license conditions for restart of TMI-1. *Id.*

528. Licensee's Ex. 56 letter report was thereafter affirmed by both Licensee's and the Commonwealth's reply findings. The Commonwealth withdrew in its reply findings many of its initially proposed management findings and recommended as conditions of restart Licensee's commitments related to training. Licensee agreed not to oppose the additional commitments as license conditions. *Id.*

529. Subsequently by a letter dated July 7, 1981, received into evidence as Licensee Ex. 59, the Licensee reported additional commitments relating to operator shift staffing and operator training in anticipation of attrition. The letter indicated that the Commonwealth's respective concerns had been thereby satisfied. Licensee and the Commonwealth affirm the understanding reflected in Licensee Ex. 59 in their special reply findings dated July 23, 1981.

530. The Board provided an opportunity for the parties and the Board to ask clarifying questions about the commitments in Licensee Ex. 56 on June 30 (ff. Tr. 22,166) and July 9, 1981 on Licensee Ex. 59 (ff. Tr. 23,003). Mrs. Aamodt, one of the affected parties refused to appear at the July 9 session, preferring to object and to comment in her reply findings. Tr. 22,795-96, 22,827-28.

531. Mrs. Aamodt objects to the commitments on several procedural grounds (as well as factual grounds discussed below). First she states that the Board should not have extended the time to file proposed findings and to permit discussions on the subject matter of the Commonwealth/Licensee settlement agreements. Aamodt July 20 PF, at 1-3. Nor should we have reopened the record to admit Licensee Ex. 56 and 59 because they were late. *Id.*, at 3-7. Although couched in terms of delaying the hearings (*Id.*, at 1-7), we do not believe that Mrs. Aamodt's real concern is delay; she has throughout the proceeding complained of its rapid pace and the demands upon the parties. Moreover, the Board granted her even more time which she requested to formulate and express her objections to the commitments. *E.g.*, Tr. 22,173.

532. In any event, there has not been any delay occasioned by the settlement negotiations in reaching a decision on these issues. As a result of the agreements, the Commonwealth withdrew its management proposed findings ¶¶ 35 through 154, comprised of 35 pages of very technical and complex discussions. *See* Licensee Ex. 56 and 59, and Commonwealth July 23 Reply Findings. Our task of adjudicating these bilateral issues has been simplified. We have however carefully examined the Commonwealth's withdrawn proposed findings in evaluating the adequacy of the commitments in the public interest and we have continued to use them as a reliable guide to the evidentiary record.

533. Mrs. Aamodt also argues that the parties adverse to her have improperly used Licensee Ex. 56 and 59 in their reply findings because, as she states, the Board had limited the use of the exhibits. Aamodt July 20 PF ¶ 18. Mrs. Aamodt's general discussion of the point indicates that she does not understand the purpose and the effect of the commitment exhibits. Aamodt July 20 PF, at 7-8. They are on the face of them statements by Licensee's legal counsel who does not testify as to any of the facts in the case. He can and he does, however, bind his client in this litigation. Mrs. Aamodt does not dispute the authenticity of Licensee Ex. 56 and 59. Therefore her complaint that no [factual] witness was presented for cross-examination on the exhibits misses the point. The exhibits are litigative commitments, binding on the Licensee. The commitments could have been made by pleading just as effectively. However, counsel did in fact appear and answer questions on the meaning of the commitments (ff. Tr. 22,166; ff. Tr. 23,303) and as we noted, Mrs. Aamodt declined to appear on one of the two occasions provided. Tr. 22,795-96; Tr. 22,827-28.

534. The Board's ruling that Licensee's counsel should not be cross-examined as a witness upon the factual adequacy of the commitments merely reflects the status of Ex. 56 as a litigative commitment, not facts, and the role of counsellor Blake, as Licensee's counsel, not Licensee's witness. *E.g.*, Tr. 22,167; Aamodt July 20 PF ¶ 12.⁵⁶

535. In sum the commitment letters, although produced in the form of exhibits were not factual evidence; they could have been produced as pleadings, in proposed findings for example. The adequacy of the commitments were to be argued from the very large evidentiary record on the respective issues. No party or the Board identified any need to reopen the factual evidentiary record as a result of the commitments.

536. Mrs. Aamodt argues further that she has been prejudiced because the Commonwealth withdrew its respective proposed findings. July PF, at 8, 9. She answers her own argument however by the observation that the Commonwealth's findings are generally consistent with her own. *Id.*, ¶ 24. Moreover, Mrs. Aamodt was given the opportunity to address the effects of the commitments. She in fact extensively used that opportunity to do so in her July 20 reply findings. *Id.*

537. Finally, we do not understand the underlying reasons for Mrs. Aamodt's broad attack upon the procedural rulings receiving the commitments (as contrasted to her arguments that the commitments are inadequate). Surely she does not object to the Licensee doing the things committed to. Nor do we believe she objects to learning of the proposed conditions in time to address their adequacy. Perhaps she has taken a

⁵⁶ As a practical matter Mrs. Aamodt did ask and counsel answered factual questions on Licensee Ex. 56, Ff. Tr. 22,182.

“gotcha!” position — it’s too late to make commitments; Licensee must be judged as if the commitments have not been made; *ergo* Licensee loses on the related issues. Whatever her point is, she has failed to state it and we can afford her no procedural relief. Our previous rulings accepting Licensee Ex. 56 and 59 stand.

Operator Training Commitments — Licensee Exhibit 56

538. Commitment 1.a requires Licensee to examine on the special “Category T” (TMI-2 accident procedures) the four remaining out of 36 individuals certified for NRC operator examinations. All must achieve 90% before NRC licensing. NRC will evaluate whether the Licensee-administered “Category T” examinations were acceptable and will require reexamination for those whose examinations were not acceptable.

539. As we understand Mrs. Aamodt’s objection to this commitment (July 20 PF ¶¶ 29-38), she believes that the “Category T” examination does not comply with Commission order item II.1(e) which, in pertinent part, requires the retraining of ROs and SROs “... including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident.” 10 NRC at 144. We don’t believe that Mrs. Aamodt understands the commitment. Mrs. Aamodt equates “Category T” with the words from the order “... including ... the TMI-2 accident”, then argues that training on natural circulation and small break loss of coolant accidents are omitted. July 20 PF ¶ 30. However the language of the commitment itself provides that “Licensee commits to examine in Commission Order Item 1.e (i.e. Category T examination)...”. Therefore the Board construes the “Category T” examination to include the natural circulation, small break LOCA and all special TMI-2 accident lessons learned training, implicitly included in Order item 1(e). This in fact was the major objective of the Licensee’s Operator Accelerated Retraining Program (OARP), which the Board has discussed at length above in our section on Training. ¶ 196, *et seq.* Licensee Ex. 27, at 67; Staff Ex. 1 (NUREG-0680, the SER), at C1-16, C6-6, 7. The “Category T” became a convenient short title for the special TMI-2 lessons-learned training and examination. *See* chart ff. Tr. 20,577.

540. Mrs. Aamodt makes another objection to Commitment 1 which is an example of the objections which pervade her general position on the commitments. For example, she complains that the commitment does not “... address the special NRC licensing requirement that the highest level of management had to certify the competence of each operator and to clarify the basis of the certification.” July 20 PF ¶ 31. Of course it doesn’t. It was not intended to. The commitments do not embrace the entire subject matter to which they relate. They do not displace the hundreds of pages of

exhibits and testimony concerning the other requirements and commitments which the Board has considered in its lengthy findings above on Licensee's training and NRC operator licensing and control room staffing.

541. Commitment 1.b requires Licensee to provide at least three additional days of training on the TMI-2 accident to all its licensed operators prior to restart. Mrs. Aamodt objects to the commitment because the additional training would not be needed if the testing had provided assurance of competence. July 20 PF ¶ 38. She states that it is not a serious commitment. *Id.* This commitment was included in the agreement with the Commonwealth presumably based on the carefully considered judgment that additional training was desirable. Contrary to her proposed finding, we find the commitment a serious one, but not her objections to it. Here again, we cannot understand her position. Does she actually oppose the extra training?

542. Commitment 2.a requires operators who have not previously held NRC licenses to take an NRC examination at the B&W simulator. Mrs. Aamodt refers to the commitment as frivolous and deceptive. July 20 PF ¶¶ 39-41. The Board, however, believes that it provides a valuable extra margin of examining.

543. Subsequent to filing all of her proposed initial and reply findings, Mrs. Aamodt filed a motion dated August 4, 1981, in which she urges the Board to require all TMI-1 ROs and SROs to be examined by the NRC on a simulator regardless of whether they have been previously licensed. Mrs. Aamodt has been aware since as early as April 30, 1981 that the NRC Staff does not plan to perform simulator testing for previously licensed operators at TMI-1. Tr. 20,755-56 (Aamodt, Crocker). Although there has been a very large litigation as to whether and how much previously licensed operators should be *trained* on simulators, there has been virtually no litigation on whether they should be *tested* by the NRC on simulators. Mrs. Aamodt had an opportunity to address any perceived inadequacy with respect to simulator testing in her initial proposed findings on the management issues. Her only initial proposed finding relating to simulator testing for previously licensed operators is her accurate statement: "The NRC oral licensing examination will not be conducted at a simulator. Tr. 20,755 (Crocker)." *Id.*, ¶ 35. Apparently Mrs. Aamodt has confused so-called oral operator tests (10 CFR 55.23) with a third category of testing, *i.e.*, on simulators.

544. No other party had a previous opportunity to address Mrs. Aamodt's late-developed position. She does not cite evidentiary support for her position. However, Mrs. Aamodt asserts in her motion that Commission regulations and hearing order item II.1(e) require simulator testing for previously licensed TMI-1 operators. If this were the case, the Board

would be constrained to consider imposing such a condition after an opportunity for the other parties to address the sufficiency and adequacy of the proposed condition.

545. Commission regulations do not now require simulator testing in addition to the written examinations and oral testing required by 10 CFR 55.20-23. A proposed rule derived from NUREG-0737, item I.A.3.1, applicable to applications for operating licenses would require simulator testing for operator license applicants. 46 *Fed. Reg.* 26,491, 26,494, May 13, 1981. But as we observed above, the Commission has not issued a similar proposed rule for operating plants.

546. Commission Order item II.1(e) could be read to require simulator testing by *Licensee* of all TMI-1 operators, previously licensed or not.⁵⁷ But we believe that the better reading of the order is that simulator *training* by Licensee is required. In any event, examinations by the *NRC* are to be conducted in the manner set forth in 10 CFR 55.20-23, which as we have observed, does not yet require simulator testing.

547. Nor is it clear that the Staff's new NUREG-0737 simulator testing program is intended to apply to the anomolous situation present in this proceeding, *i.e.*, the reexamination of previously licensed operators. The Staff itself does not seek such testing in this proceeding.

548. A contention which would have required simulator testing of Licensee's previously licensed operators would have been accepted by the Board and fully aired in the evidentiary hearing. No such issue was presented and we decline to reopen the record now in response to Mrs. Aamodt's very late unsupported motion. The commitment requiring candidates not previously licensed to undergo simulator testing is more than Mrs. Aamodt requested in her initial findings and cannot be adverse to her interests.

549. Commitment 3.a requires Licensee to make available prior to restart a CRT part-task simulator which displays temperature and pressure. Mrs. Aamodt objects saying the simulator should have been acquired earlier. July 20 PF ¶ 42. This is hardly an argument for not requiring that it be acquired now.

⁵⁷ "Augment the retraining of all Reactor Operators and Senior Reactor Operators assigned to the control room including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident. All operators will also receive training at the B&W simulator on the TMI-2 accident and the licensee will conduct a 100 percent reexamination of all operators in these areas. NRC will administer complete examinations to all licensed personnel in accordance with 10 CFR 55.20-23."

10 NRC at 144.

550. The better inference to be drawn from Mrs. Aamodt's apparent objections to the individual commitments for extra training and examinations is that they are too little and too late. July 20 PF ¶¶ 38-42.⁵⁸ If this is her point, it should have been made directly with support from the evidentiary record. Her sparse references tend to be rather enigmatic, and in view of the very large relevant evidentiary record, they are insufficiently helpful.

551. Commitment 3.b provides for the acquisition of a TMI-1 exact replica simulator anticipated to be installed in 1985.⁵⁹ Commitment 3.c requires Licensee to contract for a basic principles trainer for TMI-1 anticipated to be installed in 1982. Here Mrs. Aamodt correctly mounts her argument on the basis that the dates are too late and that restart should not be permitted until they are installed. However, Mrs. Aamodt has lost on the merits of that issue. ¶¶ 252-257, *supra*. The only purpose of the commitments as amended is to make definite milestones to assure reasonable progress in meeting the 1982 and 1985 dates.

552. Commitment 4.a requires formal training on site-specific design features for senior management prior to restart for those with less than two years service with Licensee. Mrs. Aamodt faults this training generally as being inadequate. She would like more subjects, such as decision analysis training. July 20 PF ¶¶ 45-48. While we were pleased to note that senior officials new to GPU, such as Executive Vice President Clark and TMI-1 Vice President Hukill, would undergo formal training, we shared Mrs. Aamodt's concern that the training program is not well defined. We would have conditioned the training upon the Staff's expert approval because the record does not and could not easily establish the criteria for such training. It is pointless, however, to refer the approval of training to the Staff because the Staff's SER did not require such training in the first instance. As to Mrs. Aamodt's demands that the training program be expanded, she herself has not pointed to any improvement in management to be realized by her suggestions. Unneeded training for senior management would necessarily displace their attention in other areas, so we decline absent justification to add to the training burdens.

⁵⁸ We also infer from the Introduction (at vii) to Mrs. Aamodt's Reply Findings of June 30, 1981 that her criticisms of the commitments are intended to be a general assessment of Licensee's management, including the argument that Licensee has failed after more than two years since the accident to "offer definitive proof of their capability by providing an adequate number of highly-competent operators." The point, of course, is very germane in view of Licensee's difficulty in qualifying its projected number of SRO-licensed shift supervisors, but it also may be mooted by the staffing conditions we impose below.

⁵⁹ Commitment 3.b was orally amended by Licensee's counsel at Tr. 22,203-04. The amendment is incorporated into the respective condition

553. Nevertheless, it was helpful for Licensee's counsel to explain that the course spanned 36 lecture hours with quizzes. Tr. 22,212-15 (Blake). We accept counsel's representation and expect the commitment to be complied with accordingly. As to the content and quality of the course, we are satisfied from our observation of the participants that the best use will be made of this enforced training time.⁶⁰

554. Commitment 5.a requires Licensee to train its operators on ATOG (Anticipated Transients Operators Guidelines) before ATOG is implemented. Mrs. Aamodt's objections miss the point of the commitment which was explained to her at the discussion session. It is intended to assure ATOG training before ATOG is implemented rather than before restart to assure ATOG would not be implemented without training. Tr. 22,217-18 (Adler). The commitment does not, as Mrs. Aamodt suggests, require operators to be trained to implement ATOG on some training other than ATOG training. July 20 PF ¶ 49. Mrs. Aamodt's complaints about the adequacy of ATOG training are beyond the reach of the commitment and are discussed in our section on Training, ¶¶ 188, 270, *supra*.

555. Paragraphs 6 and 7 of Licensee Ex. 56 are not commitments, but statements of fact which are not appropriate or required as conditions. Paragraph 7 relates to the staffing of the Radwaste engineer post at TMI-1, which we discuss under CLI-80-5 issue (5), *supra*.

Shift Manning - Licensee Exhibit 59

556. Prior to the accident at TMI-2 the Staff required one Senior Reactor Operator (SRO) and two Reactor Operators (ROs) on each control room shift in commercial reactors. The standards for Near Term Operating Licenses (NTOL) (NUREG-0694) increased this requirement to two SROs and two ROs for plants not yet licensed to operate. The Staff's position as stated in NUREG-0737 does not require two SROs for operating reactors until July 1982. *Id.*, at 3-12, 3-13. In its Supplement 1 to NUREG-0680 (the management SER), the Staff treated Licensee as an NTOL on this issue and would have required Licensee to man its control room at TMI-1 with two SROs and two ROs. Staff Ex. 4, at 11; Staff Ex. 14, at 22.

557. When the Commission issued CLI-81-3 grouping TMI-1 with operating reactors, unless the Board finds to the contrary, the Staff reported that there is nothing unique to TMI-1 to require a second SRO in

⁶⁰ In fact we understand that Mr. Arnold, GPU Nuclear President, who is not covered by the commitment will be one of the trainees. Tr. 22,212 (Blake).

the control room at restart. Thus, the Staff would not require two SROs in the TMI-1 control room until this requirement is scheduled for other operating reactors, now set for July 1982. Staff Ex. 14, at 22, 23.

558. The Board raised a question concerning the effect on Licensee's on-site emergency planning as a result of the Staff change of position, *i.e.*, was the Licensee's emergency plan still adequate with one rather than two SROs on shift as previously planned. Tr. 20,763-64 (Little). Also in their proposed findings, both Mrs. Aamodt and the Commonwealth of Pennsylvania argued that the Staff had failed to evaluate the effect of the revised SRO requirement on the Licensee's site-specific emergency response plan. Commonwealth PF ¶¶ 127-130 (now withdrawn); Aamodt PF ¶ 51. It was in response to the Commonwealth's concerns and, we presume, the Board's inquiry that the Licensee committed to the control room staffing requirements set out in Licensee's Ex. 59.

559. When he prepared his original testimony for this proceeding, Staff's witness, Mr. Chesnut assumed that there would be two licensed SROs on shift because that was what was being planned for at the time. He did not rely on the second SRO as being a mandatory element of the Licensee's emergency organization and did not view the second SRO on shift as necessary for emergency response purposes. Mr. Chesnut's conclusions regarding the Licensee's staffing of its emergency organization were not dependent on a second SRO being assigned on each shift. Staff Ex. 17, at 3.

560. The Licensee's emergency plan provides for four people on each shift who have an operational background. These four people are the Shift Supervisor, Shift Foreman, and two ROs. Tr. 22,290 (Chesnut). Under the condition imposed by the Board, the Shift Supervisor will always be a licensed SRO. *See also* Staff Ex. 4, at 39; Staff Ex. 17, at 4. In addition, the Licensee has committed to, at the time of restart, having the Shift Foreman be either licensed as an SRO or licensed as an RO and trained as an SRO. Licensee Ex. 59, at 2.

561. After the Staff decided that the Licensee need not assign a second SRO on shift until July 1, 1982, Mr. Chesnut again reviewed the emergency responsibilities assigned to the Shift Foreman to ascertain whether the Shift Foreman's emergency duties indicated a need for SRO qualification. Although SRO qualifications for the Shift Foreman would enhance the qualification level available in the control room, the emergency functions assigned to the Shift Foreman in assisting the Shift Supervisor do not require an SRO license. Staff Ex. 17, at 3.

562. If the Shift Supervisor became incapacitated or otherwise unavailable, the Shift Foreman would perform the duties of the Shift Supervisor which, during an emergency when no other SRO is on-site, would include those of the Emergency Director. The TMI-1 emergency plan and

emergency plan implementing procedures, however, call for the Shift Foreman to be trained to perform the duties of an Emergency Director. *Id.*, at 4.

563. In addition, the Shift Foreman may be required to act as Operations Coordinator for a limited period of time if the Shift Supervisor is not available. An Operations Coordinator who is not a licensed SRO will not be permitted to direct plant operations under the Licensee's emergency plan. However, numerous support engineers (at least one of whom would maintain SRO qualification), as well as an Emergency Director and Operations Coordinator, would be augmenting the emergency organization within 30 minutes to one hour of an emergency. These augmenting personnel would relieve the Shift Foreman of his emergency duties upon arrival on-site. Thus, a non SRO-licensed Shift Foreman might only be called upon to perform the duties of the Emergency Director or Operations Coordinator for the brief period prior to the arrival of the on-site emergency organization. *Id.*, at 4-5.

564. It is unlikely, however, that the Shift Foreman would ever have to become the Emergency Director. Tr. 22,254 (Chesnut). Under Licensee's commitment agreement with the Commonwealth, at all times when TMI-1 is operating at power levels above 20% rated power and there is only one licensed SRO on shift, the SRO-licensed individual on shift will remain within the control room (including the Shift Supervisor's office) or within the plant at a location from which the control room is accessible in less than five minutes. Furthermore, at all times when TMI-1 is operating at power levels above 20% rated power and the SRO-licensed individual on shift is not in the control room (including the Shift Supervisor's office), the Licensee will ensure that the control room (including the Shift Supervisor's office) is manned by a minimum of two ROs, a third individual with an RO license and SRO-trained, and the Shift Technical Advisor (STA). Licensee Ex. 59, at 3.

565. During the Board's examination on the one SRO requirement, Mr. Chesnut reiterated his belief that two SROs would provide an additional margin of safety in the response to an emergency but that such a requirement is not a mandatory or necessary element for adequate emergency response. Tr. 22,288-89 (Chesnut). Mr. Chesnut also observed that Licensee's Emergency Plan calls for twenty people on shift at all times. By comparison, the NRC Staff recommends a minimum shift staffing of ten. Tr. 22,290 (Chesnut). This excess of personnel allows this Licensee to immediately remove from the person designated as Emergency Director (*i.e.*, the shift supervisor) some functions that other licensees place on the Emergency Director. These include radiological concerns, including dose projections and in-plant controls, as well as initial notifications. Thus,

under Licensee's Emergency Plan the Emergency Director can better concentrate on operational matters; this is not necessarily the case at other plants. Tr. 22,291, 22,316 (Chesnut).

566. With Licensee's commitments reflected in Licensee Ex. 59, Licensee will have four licensed operators on shift when the plant is operating and the licensed SRO will be in, or within five minutes of reaching, the control room. From an emergency planning standpoint, the Board therefore does not regard as necessary that the restart of TMI-1 be conditioned with a requirement that Licensee have two SRO-licensed individuals on shift at all times; there is nothing we can identify in emergency planning which would lead the Board to find that Licensee should not be grouped with operating reactors pursuant to CLI-81-3.

567. TMI-1, if permitted to operate, would do so during decontamination and restoration activities at TMI-2. In this regard TMI-1 differs from other operating licensees. The Staff considered this difference and found that the activities at TMI-2 would not affect the safe operation of Unit 1 and would not require two SROs on that account. Staff Ex. 14, at 23. We agree.

568. Unlike any other operating plant that we are aware of, TMI-1 will have been in cold shutdown for almost three years if permitted to operate in January 1982 for example. We considered this fact in determining whether there is any basis to treat TMI-1 as a pending NTOL plant rather than as an operating plant. Mrs. Aamodt points to this situation and cites the Staff's own witness, Dr. Denwood Ross, in support of her argument that TMI-1 should be treated as an NTOL. July 20 PF 62. Dr. Ross, testifying before the Commission issued CLI-81-3, did in fact state that the Staff considered the fact that TMI-1 had then been shut down for two years in its original decision to treat the unit as an NTOL in operator shift manning. Tr. 15,656-57 (Ross). This consideration was discussed however as a part of a larger consideration involving shift manning changes during an operating cycle rather than during the fuel outage cycle preferred by Dr. Ross. Tr. 16,656-61 (Ross). Moreover, Dr. Ross in assigning TMI-1 to the NTOL category was considering the advantages of having four licensed operators in the control room as required for NTOLs rather than three operators as now required for operating plants. Tr. 15,662 (Ross). Under the commitment agreement the Licensee will have four licensed operators. Licensee Ex. 59, at 2. However, it appears to the Board that the Staff's two positions on the SRO staffing of TMI-1 arose mainly from policy factors, not engineering judgment. As the Staff correctly points out, it reexamined its views on the issue because of the Commission directive in CLI-81-3. Staff Ex. 14, at 22, 23.

569. Although not addressed in the context of the long shutdown, the Staff recognizes an additional safety factor in the fact that among the shift supervisors and shift foremen at TMI-1, there are many previous SRO licensees and there are many previous RO licensees among the control room operators. *Id.*, at 23. This factor, together with the special control room staffing commitments requires the Board to find that the Licensee should be considered as an operating licensee with respect to the SRO/RO components of its control room staff.

570. There is yet another factor in the control room staffing issue which the Commission, but not the Board, may consider. In its report on the restart of TMI-1 the Advisory Committee on Reactor Safeguards reported to the Commission:⁶¹

The Licensee has proposed a start-up test program for TMI-1 similar to that being conducted at the near-term operating license plants. The Committee agrees that such a program is desirable, particularly in view of the length of time that TMI-1 has been out of service and the number of modifications made. Such a program should also provide useful additional operator training and experience. The review of this program by the NRC Staff is not yet complete. Those issues remaining should be resolved to the NRC Staff's satisfaction.

571. As can be seen, the ACRS arrived at a different conclusion than did this Board as to the effect of the long shutdown of TMI-1. On the other hand the ACRS refers to a start-up test program which was not known to us at the close of the evidentiary record. If the Licensee does in fact have a start-up test program as comprehensive as one for new plants, which would, as the ACRS noted, provide additional operator training, this would satisfy the issue of whether to treat TMI-1 differently than operating reactors because of the prolonged shutdown. We have not reopened the evidentiary record in this proceeding to inquire whether there are such training opportunities because it would unnecessarily delay our decision. This we believe can be left to Staff certification to the Commission. Absent such certification however, we recommend that the Commission affirm the existence of such a program if it intends to rely upon it, because we believe it would have been brought forward in this proceeding if it existed and were it ripe for consideration. For our part, we rely upon the staffing commitments, the extra personnel, and the experience of the

⁶¹ Letter dated July 14, 1981, J. Carson Mark, ACRS Chairman to NRC Chairman Palladino.

TMI-1 crew in concluding that TMI-1 can be operated safely under the commitments pending the implementation of the NUREG-0737 staffing requirement in July 1982.

572. Mrs. Aamodt urges a finding that TMI-1 should be treated as an NTOL because TMI-1 staffing, training, procedures and design are basically the same as those which existed at TMI-2 before the accident. July 20 PF ¶ 61. In other words, Mrs. Aamodt would have us find that TMI-1 differs from other operating reactors because of the accident itself. We rule now, as we ruled during the hearing (Tr. 20,748), that CLI-81-3 removes this as a reason *per se* from the Board's consideration, absent some demonstration of a connection between a particular situation and the accident.

573. Mrs. Aamodt faults the adequacy of Commitment 1.a on control room staffing in that, as modified by the Board, the commitment could provide for a foreman, licensed as an RO, who has trained as an SRO, but who has failed the SRO examination, to be in charge of the control room. July 20 PF ¶¶ 68-70. We don't know if the commitment anticipates that the SRO-trained individual (certified by management as eligible for the examination, Tr. 23,004) may be one who has failed the SRO examination. It did not occur to us or any party to inquire at the explanatory session (ff. Tr. 23,303), and Mrs. Aamodt declined to participate in that session. Assuming Mrs. Aamodt's premise, however, we still believe the commitments to be adequate. We assume that the hypothetical RO-licensed foreman who has failed the SRO examination is still qualified to function as an RO. Mrs. Aamodt on the other hand seems to urge a finding that the failing SRO candidate is either improperly trained (presumably as an RO) or is psychologically impaired. July 20 PF ¶ 70. The proposed finding is without record support and we reject it.

574. Mrs. Aamodt opposes commitments 1.b and 1.c because they provide for a five-shift method of meeting the control room staffing commitment 1.a instead of the Licensee's preferred six-shift method. The record has not established that a six-shift approach is required. The NRC has no standards for the number of shifts, only that the plant be adequately staffed. Tr. 20,773 (Crocker). If Licensee is required to drop from a six-shift to a five-shift staffing scheme, the effect would be to defer for that period the training plans for the sixth shift, which in the short run has no safety significance.

575. Mrs. Aamodt's proposed findings ¶¶ 72 through 79 (July 20 PF) are unpersuasive arguments rather than proposed findings of fact.

576. The Staff proposes a modification to Licensee's Commitment 1.a because the commitment does not specify, in the event that there is only one SRO, whether that person is the Shift Supervisor or the Shift Foreman. Staff July 22 PF ¶¶ 14-16.

577. This would permit a situation where the Shift Foreman could be an SRO, whereas the Shift Supervisor may only be an RO. The use of a non-SRO-licensed Shift Supervisor would be inconsistent with the testimony of TMI-1 Vice President Hukill. Tr. 11,667-69. Moreover, Mr. Hukill also testified that both the Shift Supervisor and the Shift Foreman for each shift oversee the activities of the control room operators, but that the Shift Foreman reports to the Shift Supervisor. Hukill, *et al.*, ff. Tr. 11,617, at 14, 18. Thus, having an RO-licensed Shift Supervisor and an SRO-licensed Shift Foreman would permit a situation where a non-SRO-licensed Shift Supervisor has responsibility for directing the licensed activities of licensed operators, including an SRO-licensed shift foreman. Such a situation would be in conflict with 10 CFR 50.54(1), which provides that such a person (the shift supervisor), designated to be responsible for directing the licensed activities of licensed operators, be licensed as a *senior operator* pursuant to 10 CFR Part 55.

578. Accordingly, the Board has modified Licensee's license condition 1.a to be consistent with the regulations and the Licensee's own testimony.

579. The commitment agreements between the Licensee and the Commonwealth recite the fact that the Licensee does not object to having its commitments being imposed as Licensee conditions for the restart of TMI-1. Licensee Ex. 56, at 5; Licensee Ex. 59, at 4. The Commonwealth specifically requests that the Board adopt the commitments as conditions because the Commonwealth has no direct means to enforce the commitments. July 23 PF ¶ 3. While, as we noted above, Licensee has made many other commitments which equal or exceed the importance of the training and staffing commitments, the Board does adopt the commitments (as modified) as conditions for any restart. The Commonwealth has fairly litigated the commitments and probably would have prevailed on most if not all of the issues. It has earned the commitments also as a result of negotiation and it is entitled to have them made into conditions so that it will have a direct and practical enforcement mechanism at its disposal.

580. The Commonwealth also negotiated with the Licensee for the following additional commitment:

Licensee acknowledges NRC's future plans to conduct operator examinations on simulators and the potential value of NRC evaluations in the future of on-shift emergency drills conducted by Licensee. In its reply findings on management, Licensee will propose that the Board take particular note of these future possibilities and that it encourage the Staff to utilize simulator examinations and to formalize its system of evaluating on-site shift emergency drills by operators.

Licensee Ex. 56, at 3.

581. The Licensee has abided by this commitment and has brought the matter to the Board's attention in its Ex. 56 and in its June 29 Reply Findings (n. 4, at 5). This commitment was a portion of Licensee's commitment 2.a which also committed Licensee to have certain operators submit to NRC-administered examinations on the B&W simulator. The Board discussed this commitment with the Staff at the hearing and the Staff agrees to meet its responsibilities in the training commitments.⁶² Tr. 22,184-85 (Smith, Swanson). It is not clear, however, that the NRC Staff has agreed to conduct simulator examinations and to formalize its system of evaluating on-site emergency drills in other proceedings. It is beyond the jurisdiction of this Board to require such testing and evaluation except as it relates to TMI-1. We do, however, take note of the future simulator testing and the formal evaluation plans as requested by the parties, and encourage their use.

582. In the conditions imposed below, we also include the condition relating to Task Action Plan I.C.5, relating to the review of operating experience information as we have discussed above under CLI-80-5 issue (7), §§ 420-428. These conditions are intended to be minimum conditions arising out of this proceeding. They do not, of course, bar the imposition of additional or greater conditions on related matters outside this proceeding.

Conditions

583. If Licensee is permitted to restart TMI Unit 1, it shall be under the following license conditions:

1. Prior to restart, Licensee shall demonstrate to the NRC Staff that Licensee has examined on the subject matter identified in Commission Order item II.1(e) (*i.e.*, Category T examination), the four remaining individuals of the thirty-six whom Licensee has certified for NRC licensed operator examination prior to restart. The Staff will not issue licenses to these individuals until each has passed with a 90% grade a Licensee-administered Category T examination which the Staff shall evaluate and determine to be acceptable for this purpose. All previous Category T examinations shall be evaluated by the Staff prior to restart. Any Category T examination utilized by Licensee and determined by the Staff not to be acceptable will require that another examination, acceptable to the Staff be constructed,

⁶² The Staff also recognizes that the commitments and conditions under Licensee Ex. 59 on control room staffing impose duties upon the Staff. The Staff does not object. Tr. 23,009 (Smith, Tourtellotte).

and be administered to all Licensee operators who had passed the examination found not to be acceptable. The Staff shall include in its certification to the Commission that the Licensee has complied with this condition.

2. Prior to restart, Licensee shall demonstrate to the NRC Staff that all of its licensed operators have received at least three additional days of training covering the TMI-2 accident subject matter, and the Staff shall include in its certification to the Commission that Licensee has complied with this condition.
3. Prior to restart, Licensee shall demonstrate to the NRC Staff that all of its operators who have not previously held NRC licenses have successfully completed at the B&W simulator an NRC-administered examination, in addition to the written examinations and the operating examinations at TMI-1, and the Staff shall include in its certification to the Commission that Licensee has complied with this condition.
4. Prior to restart, Licensee shall demonstrate to the NRC Staff that Licensee has available for use at TMI-1 a cathode ray tube (CRT) part-task simulator which displays temperature and pressure, and the Staff shall include in its certification to the Commission that Licensee has complied with this condition.
5. Prior to April 1, 1982, Licensee shall prepare for bids and distribute specifications for a TMI-1 exact replica simulator. Licensee shall make reasonable and diligent efforts to have the TMI-1 exact replica simulator installed by 1985. Annually, in October of each year, beginning with October 1982, Licensee shall provide to the NRC reports on progress toward fulfillment of this condition.
6. Prior to restart, Licensee shall demonstrate to the NRC Staff that Licensee has contracted for a basic principles trainer for TMI-1 anticipated to be installed in 1982, and the Staff shall include in its certification to the Commission that Licensee has complied with this condition. Following availability of this trainer, Licensee shall provide for each operator as a part of annual requalification training at least one week training per year on this trainer in addition to the week each year at B&W's simulator, at least until Licensee's exact replica simulator is available.

7. Prior to restart, Licensee shall demonstrate to the NRC Staff that members of Licensee's senior management who have joined Licensee since July 1, 1979, and who are designated to act as Emergency Directors or as Emergency Support Directors, have received a formal training course addressing site-specific plant design features, and the Staff shall include in its certification to the Commission that Licensee has complied with this condition.
8. Licensee shall conduct training of all of its operators in ATOG prior to ATOG implementation.
9. At the time of restart, the Staff shall impose and enforce the following license conditions for the operation of TMI-1:
 - (a) At all times when the plant temperature is above 200°F (cold shutdown), Licensee will man all shifts at TMI-1 with a minimum of one NRC-licensed SRO, who will act as Shift Supervisor, a second individual, either NRC-licensed as an SRO or NRC-licensed as an RO and trained as an SRO, who will act as Shift Foreman, and a minimum of two NRC-licensed ROs who will act as Control Room Operators.
 - (b) Licensee shall employ all reasonable efforts to ensure personnel will be scheduled on a six-shift rotation, so long as there is a sufficient number of qualified individuals who normally stand shift watches to man six shifts, each of which meets (a), above (6 SROs and 18 ROs, recognizing that SROs may act as either SROs or ROs).
 - (c) In the event there is an insufficient number of qualified personnel who normally stand shift watches available to meet (b), above, Licensee shall schedule its normally on-shift plant operating personnel on a five-shift schedule, each of which meets (a), above, unless additional relief is granted pursuant to (e), below.
 - (d) In the event there is an insufficient number of qualified operators who normally stand shift watches available to meet (c), above, Licensee may employ on shift qualified and licensed individuals from its organizations who do not normally stand shift watches, in addition to those operators who do normally stand shift watches, to meet (c), above.
 - (e) In the event there is an insufficient number of qualified operators in Licensee's organization to meet (d), above, for any period longer than ten consecutive days, Licensee shall

inform the Commonwealth and the NRC Staff and seek from the Staff their concurrence to man TMI-1 shifts and operate TMI-1 for a limited period of time with available qualified and licensed personnel, specifically bearing in mind the then-current and applicable NRC criteria or guidance on overtime policies.

- (f) At all times when TMI-1 is operating at power levels above 20% rated power and there is only one licensed SRO on shift, the SRO-licensed individual on shift shall remain within the control room (including the shift supervisor's office) or within the plant at a location from which the control room is accessible in less than five minutes. Further, at all times when TMI-1 is operating at power levels above 20% rated power and the SRO-licensed individual on shift is not in the control room (including the shift supervisor's office), Licensee shall ensure that the control room (including the shift supervisor's office) is manned by a minimum of two ROs, acting as Control Room Operators, a third individual with an RO license and SRO-trained, and by the on-shift Shift Technical Advisor (STA).
 - (g) Licensee shall employ all reasonable efforts to maintain at all times sufficient numbers of individuals in training to become licensed operators in order to account for possible future attrition of licensed operators. To this end, Licensee shall employ all reasonable efforts to maintain in training at all times that number of trainees which, when combined with the actual numbers of NRC-licensed SROs and ROs in Licensee's organization, will total at least 30. Licensee shall report to the Commonwealth and the Staff at least annually whenever this condition is not met, and shall describe to the Staff the corrective actions being employed by Licensee to achieve compliance.
10. At the time of restart the Licensee shall provide and shall thereafter maintain a management system to perform the following functions:
- (a) Review operating experience information originating both within and outside the facility;
 - (b) Promptly supply information pertinent to plant safety, including proposed procedural changes and plant modifications, to operators and other appropriate plant personnel; and

- (c) Assure that such information is incorporated into training and requalification programs.

III. CONCLUSIONS OF LAW

584. In accordance with Commission Orders CLI-79-8, CLI-80-5, and CLI-81-3, and based on the preponderance of the reliable, probative, and substantial evidence of record in this proceeding, the foregoing findings of fact related to Licensee's management competence, and in consideration of the above license conditions, the Board concludes:

- a. That the "short-term actions" recommended by the Director of Nuclear Reactor Regulation set out in CLI-79-8 related to management competence are necessary and sufficient to provide reasonable assurance that Licensee has the management competence to operate TMI-1 without endangering the health and safety of the public, and should be required before resumption of operation should be permitted; and
- b. That the "long-term items" recommended by the Director of Nuclear Reactor Regulation set out in CLI-79-8 related to management competence are necessary and sufficient to provide reasonable assurance that the Licensee has the management competence to operate TMI-1 for the long term without endangering the health and safety of the public, and should be required of Licensee as soon as practicable;
- c. That Licensee has augmented the retraining of all Reactor Operators and Senior Reactor Operators assigned to the control room including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident. All operators also have received training at the B&W simulator on the TMI-2 accident and Licensee will conduct a 100 percent reexamination of all operators in these areas.⁶³
- d. That Licensee has demonstrated its managerial capability and technical resources to operate Unit 1 while maintaining Unit 2 in a safe configuration and carrying out planned decontamination and/or restoration activities. In reaching this conclusion, we have addressed the Licensee's command and ad-

⁶³ Because of the pendency of the inquiry into the matter of cheating on the NRC operator license examinations, the Board omits for now any conclusion respecting operator testing and licensing.

ministrative structure at the corporate and plant levels, the adequacy of groups providing safety review and operational advice, the management and technical capability and training of operations staff, the adequacy of the operational Quality Assurance program and the facility procedures, the relationship between the financial and technical organizations, and the capability of important support organizations such as Health Physics, Radwaste, and Plant Maintenance. We have specifically addressed issues (1) through (11) and (13) of CLI-80-5; and

- c. That Licensee complies with the Category A (short-term) recommendations related to management competence (Items 2.2.1.a., 2.2.1.b., 2.2.1.c. and 2.2.2.b.) in Table B-1 of NUREG-0578 and has made reasonable progress toward completion of the Category B (long-term) recommendation related to management competence (Item 2.2.1.b.) in Table B-1 of NUREG-0578.

IV. EFFECTIVENESS AND APPEALABILITY

585. In its order of August 20, 1981, CLI-81-19, the Commission stated that it intends to begin its immediate effectiveness review shortly after this Board issues this partial initial decision if this decision resolves management issues in a manner favorable to the eventual operation of Unit One. With the exception of the subissue on operator license examinations, over which we retain jurisdiction, our conclusions on management competence issues are favorable to the eventual operation of the unit. The Commission has requested the parties to file comments with it on whether this decision should be made immediately effective and has provided a schedule for such comments. Initial comments should be made so that they will be received by the Commission no later than fifteen days after our decision is rendered (see date below). Reply submissions must be received by the Commission no later than ten days after service of the initial comments.

586. Also in CLI-81-19, the Commission directed that an Atomic Safety and Licensing Appeal Board be established in this proceeding to hear initial appeals. *Id.*, at 3. The Appeal Board in *Houston Power Lighting Company* (Allens Creek Nuclear Generating Station, Units 1 and 2), ALAB-301, 2 NRC 853 (1975), ruled that the licensing board partial initial decision approving the nuclear suitability of the *Allens Creek* site

was appealable even where no activities were authorized in a situation where there would be a long hiatus before further findings because applicant deferred indefinitely the construction of the facility. *Id.*, at 854.

587. In *Duke Power Company* (Perkins Nuclear Station, Units 1, 2, and 3), ALAB-597, 11 NRC 870 (1980), an Appeal Board held that a partial initial decision favorable to the applicant on the issue of alternate construction sites, which as in *Allens Creek*, did not authorize any construction activity, but unlike *Allens Creek* did not contemplate a long hiatus before further findings, was an appealable decision. Applying the rationale of *Perkins*, this partial initial decision is appealable according to the provisions of 10 CFR 2.762. The Appeal Board review is, of course, separate from the Commission's review on the question of immediate effectiveness.

588. Within ten days after service of this initial decision, any party may take an appeal to the Appeal Board by filing exceptions to all or portions of the decision. A brief in support of the exceptions shall be filed within thirty days thereafter or within forty days in the case of the Staff. 10 CFR 2.762. This Board recognizes that, with the simultaneous comment period before the Commission on the issue of immediate effectiveness, and considering the length of this partial initial decision, an extension of time for the filing of exceptions with the Appeal Board might be appropriate. However, this Board is without jurisdiction to modify the appellate procedures or schedules. Any request to modify the time period set out in Section 2.762 should be made to the Appeal Board designated to hear the initial appeals in this proceeding, or if the Appeal Board has not

yet been designated, requests should be made to the Chairman of the Atomic Safety and Licensing Appeal Board Panel.

**THE ATOMIC SAFETY
AND LICENSING BOARD**

**Walter H. Jordan
ADMINISTRATIVE JUDGE**

**Linda W. Little
ADMINISTRATIVE JUDGE**

**Ivan W. Smith
ADMINISTRATIVE JUDGE**

**Rendered:
Bethesda, Maryland
August 27, 1981**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

B. Paul Cotter, Jr., Chairman
Dr. Cadet H. Hand, Jr.
Dr. David L. Hetrick

In the Matter of

Docket Nos. 50-500-CP
50-501-CP
(Termination of
Proceedings)

THE TOLEDO EDISON COMPANY, et al.
(Davis-Besse Nuclear Power Station,
Units 2 and 3)

August 28, 1981

The Licensing Board grants applicant's request to withdraw its application for construction permits for Units 2 and 3 of the Davis-Besse facility and orders that applicant take certain steps to redress the site pursuant to 10 CFR 2.107(a); vacates its partial initial decisions, LBP-75-75, 2 NRC 993 (1975) and LBP-78-29, 8 NRC 284 (1978), which authorized issuance of two limited work authorizations for those units, and terminates the construction permit proceedings for those units.

ORDER

Upon consideration of the response by both NRC Staff and counsel for Toledo Edison Company, et al. ("the Applicant") to this Board's order of December 31, 1980 in the captioned proceeding and the entire record in this matter, and pursuant to the authority contained in 10 CFR Part 2, it is this 28th day of August, 1981.

ORDERED

1. That the request of the Applicant that its application for construction permits for the Davis-Besse Nuclear Power Station, Units 2 and 3, be withdrawn is granted. The applicant shall take the following actions to redress the site, which are prescribed as conditions pursuant to 10 CFR §2.107(a) of the withdrawal of the applications for construction permits:

- a. The temporary construction office facilities (separate and connected trailers) shall be removed from the site. The temporary above ground electric service shall also be removed. (The area between N9,500 and N10,000 around E9,500 on drawing 6670TP-P-C002 of the attachment to Applicant's letter of November 26, 1980);
 - b. The existing construction material stockpiled throughout the material storage area and the construction equipment shall be removed from the site when dispositioned;
 - c. The west side of the wave protection dike shall be seeded;
 - d. Throughout the site, wherever earth mounds or trenches occur, they shall be contoured as necessary and covered with topsoil to enhance the wildlife habitat;
 - e. The eight ponds created by construction excavation shall remain as waterfowl and wildlife habitat. The banks of the ponds shall be graded as required;
 - f. The existing topsoil stockpile shall be utilized throughout the site in strategic areas as ground cover for vegetation restoration purposes;
 - g. Landscaping and vegetation restoration shall enhance the site's natural environment. In developing the details of this effort, compatibility with wildlife areas adjacent to the site shall be considered by the Applicant.
 - h. The definitive reconditioning plan shall be based on considerations such that the site shall be improved to a condition that shall encourage wildlife to use the area;
 - i. Approximately 100 grout pipes remaining from the remedial grouting shall be cut off and plugged prior to backfilling the excavation,
 - j. The groundwater treatment plant shall be mothballed in place.
2. That the Licensing Board's partial initial decisions, LBP-75-75, 2 NRC 993 (1975) and LBP-78-29, 8 NRC 284 (1978), authorizing issuance of two limited work authorizations for the Davis-Besse Nuclear Power Station, Units 2 and 3, are vacated.
 3. That the Director of Nuclear Reactor Regulation is authorized to:
 - a. Revoke the outstanding limited work authorizations issued pursuant to 10 CFR §§50.10(e)(1) and 50.10(e)(3);

- b. Cause to be published in the Federal Register in accordance with 10 CFR 2.107(c) a notice of the withdrawal of the applications for construction permits for Davis-Besse Nuclear Power Station, Units 2 and 3.
4. That the Applicant's Motion for Termination of Proceedings is granted and the construction permit proceedings for Davis-Besse Nuclear Power Station, Units 2 and 3, are terminated.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**B. Paul Cotter, Jr., Chairman
ADMINISTRATIVE JUDGE**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

HAROLD R. DENTON, DIRECTOR

In the Matter of

**Docket No. 50-389A
(10 C.F.R. 2.206)**

**FLORIDA POWER & LIGHT COMPANY
(St. Lucie Plant, Unit No. 2)**

August 7, 1981

The Director of Nuclear Reactor Regulation denies a petition under 10 C.F.R. 2.206 which requested institution of enforcement action against the licensee for its asserted failure to abide by an antitrust condition of its license.

RULES OF PRACTICE: PETITIONS UNDER 10 C.F.R. 2.206

The Director will not institute a requested proceeding where the petitioner's basis for relief rests on resolution of an issue that is pending before another agency and that is peculiarly within the competence of that agency to decide.

DIRECTOR'S DECISION UNDER 10 C.F.R. 2.206

By letter dated June 22, 1981 George R. Kucik, Esq. requested, on behalf of Parsons & Whittemore, Inc. and its wholly owned subsidiary Resources Recovery (Dade County) Inc., (hereinafter jointly referred to as petitioners) that enforcement action be instituted against the Florida Power and Light Company (FP&L) for the asserted failure by FP&L to abide by an antitrust condition of the license it holds for its nuclear power plant known as St. Lucie Unit 2. Florida Power & Light Company submitted a response to the petition on July 15, 1981. For the reasons which follow I decline to institute the requested enforcement action.

DISCUSSION

The license condition in question¹ requires, among other things, that FP&L transmit under certain conditions electricity generated by two defined categories of electrical generating entities:

- "qualifying small power production facilities", as that term is defined by a regulation of the Federal Energy Regulatory Commission²; and
- "neighboring entities", a term defined in the license condition itself.

The petitioners here are the designers/constructors of a resource recovery plant said to be capable of producing 77 megawatts of electricity by burning fuel derived from refuse. Claiming status both as a "qualifying small power production facility" and as a "neighboring entity" they assert that they have requested FP&L to provide transmission service and that, in violation of its NRC license condition, FP&L has refused.

Whether the petitioners are a "qualifying small power production facility" is a question involving the interpretation of provisions of the recently enacted Public Utility Regulatory Policies Act of 1978 (PURPA) and the implementing regulations promulgated by the Federal Energy Regulatory Commission at 18 C.F.R., Part 292. Not only are these provisions of law the proper province of the Federal Energy Regulatory Commission but, in fact, the very issue of petitioners' status as "qualifying small power production facility" is currently pending before that agency.³ Moreover, it is my understanding that both the petitioners' claim and FP&L's challenge to that claim in the pending proceeding involve a question of first impression before FERC. In these circumstances, FERC should be afforded the opportunity to interpret PURPA and its own regulations free of any intrusion an advance interpretation on my part might cause.

Assuming for the sake of argument only that petitioners otherwise fit within the definition of "neighboring entity",⁴ the petitioners' claimed status as a "neighboring entity" in this petition is intertwined with the question of whether it is a "qualifying small power production facility". The relationship is as follows. In order to come within the definition of "neighboring entity" the petitioners must satisfy several enumerated criteria including this one:

¹See *Florida Power & Light Company*, CPPR 144, Amendment No. 3, 3.F.(6), Section X, issued May 26, 1981 (46 F.R. 31394).

²18 C.F.R., Part 292, Subpart B.

³FERC Docket No. QF81-19-001, 46 Fed. Reg. 30557.

⁴Because the decision I reach does not require determining whether petitioners do indeed otherwise fit within the definition of "neighboring entity", I make no determination in that regard.

"(3) it is, or upon commencement of operation will be subject to regulation as a public utility with respect to rates or service under applicable state law, or under the Federal Power Act, or it is legally exempted from such regulation by law."

Petitioners assert that the resource recovery plant satisfies this criterion because it "is subject to regulation as a public utility under the Federal Power Act".⁵ The reason petitioners assign for the facility being subject to regulation under the Federal Power Act is that it has a capacity "in excess of 30 megawatts" and, therefore, is not exempt from regulation under a provision of the Federal Energy Regulatory Commission's regulations (18 C.F.R. 292.601) which exempts from the Federal Power Act "qualifying small power production facilities" having capacities of 30 megawatts or less. By employing this reasoning process the petitioners have inferentially asserted that the resource recovery plant is a "qualifying small power production facility" and thus rendered their "neighboring entity" argument dependent upon the resolution of their status as a "qualifying small power production facility". For the reasons discussed at the outset I decline to attempt to prejudge the outcome of the pending FERC proceeding, the very purpose of which is to determine whether or not petitioners' resource recovery plant is a "qualifying small power production facility". Pending resolution of petitioners' status, an adequate basis upon which to institute the requested enforcement proceeding is lacking. Accordingly, I decline to do so and deny the request of the petitioners.⁶

A copy of this decision will be filed with the Secretary of the Commission for its review in accordance with 10 C.F.R. 2.206(c) of the Commission's regulations.

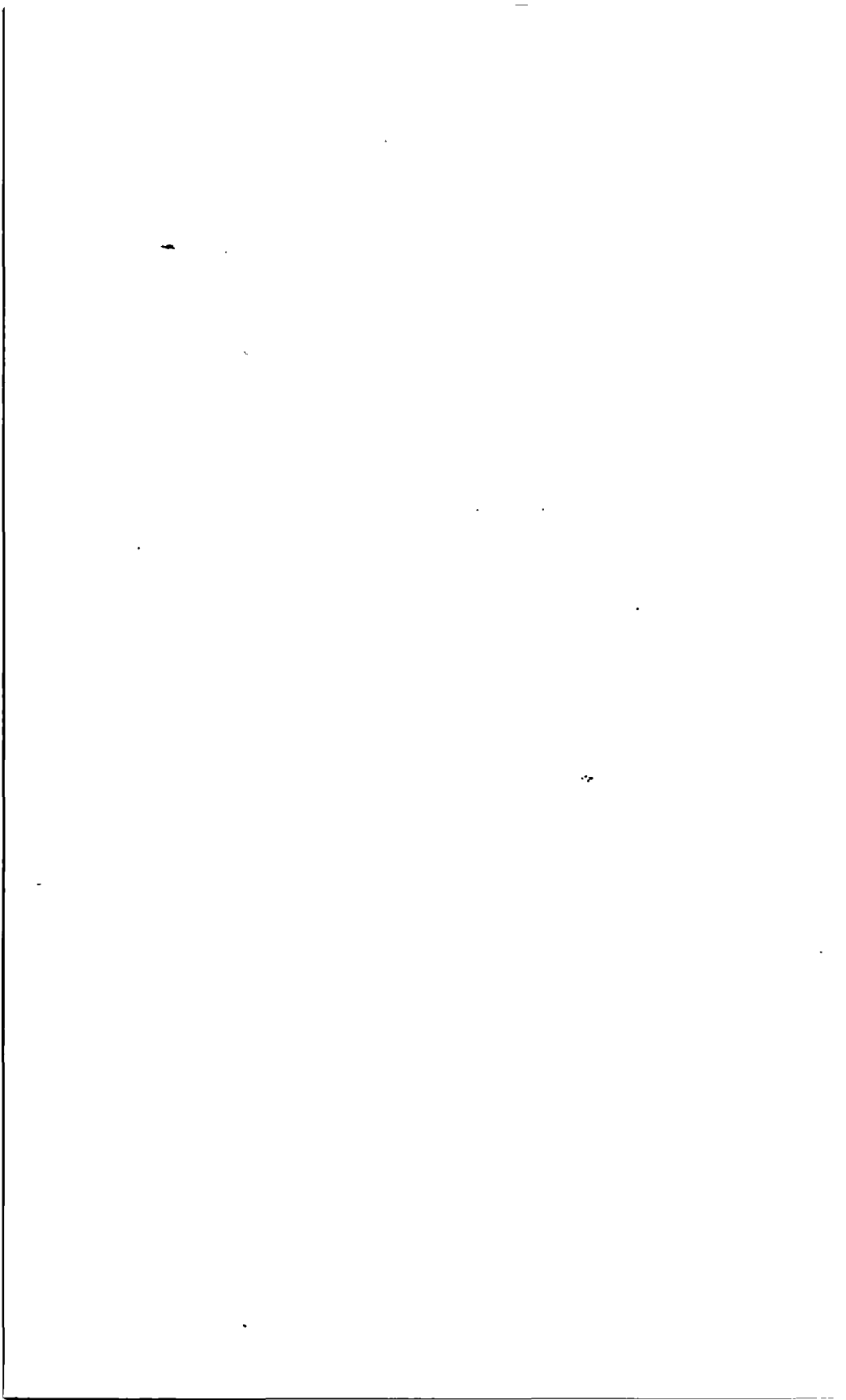
As provided in 10 C.F.R. 2.206(c) of the Commission's regulations, this decision will constitute the final action of the Commission 25 days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 7th day of August, 1981.

⁵ See "Request for Enforcement Action Against Florida Power & Light Company", submitted by George R. Kucik, 6/22/81, at 6.

⁶ If FERC were to decide that the resource recovery plant does qualify as a "qualifying small power production facility" the decision I reach today would, of course, not prevent the petitioners from resubmitting their request for enforcement action. Should the petitioners choose to resubmit their petition after FERC rules, a determination will be made at that time as to whether the requested enforcement action is appropriate.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gilinsky
Peter Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket No. 50-289
(Restart)

METROPOLITAN
EDISON COMPANY, et al.
(Three Mile Island
Nuclear Station, Unit 1)

September 17, 1981

On reconsideration of a question on which a four-member Commission had divided equally before, the result of which was to exclude consideration of psychological stress contentions from this restart proceeding, a full Commission, by majority vote, decides to adhere to the previous result.

ORDER

In its Memorandum and Order of December 5, 1980, the Commission stated that it was evenly divided on the question of whether the Licensing Board considering the Three Mile Island Unit 1 restart proceeding should accept contentions related to psychological stress and community deterioration. The order stated that procedurally, the effect of the tie vote was to exclude such contentions from the restart proceeding. The Commission stated that it would "reconsider and vote on the question when the makeup of the Commission is altered by the appointment and confirmation of a fifth Commissioner." CLI-80-39, 12 NRC 607, 608.

On September 10, 1981, a majority of Commissioners voted to adhere to the result previously reached, *i.e.*, to continue to exclude psychological stress and community deterioration contentions from the restart proceeding.

Separate views of Commissioner Gilinsky are attached.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 17th day of September, 1981

**COMMISSIONER
GILINSKY'S SEPARATE VIEWS**

As the Commonwealth of Pennsylvania had previously recommended that we admit this contention to the hearing, I would have solicited the Commonwealth's present views before acting.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gillinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket Nos. 50-275 OL
50-323 OL
(Security)

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

September 17, 1981

In response to an intervenor's request for clarification on the procedure for seeking review of the Appeal Board's September 9, 1981 physical security decision (ALAB-653 and ALAB-653 RESTRICTED), the Commission: (1) directs that review of the decision be sought by the filing of a petition for review pursuant to 10 CFR 2.786; (2) extends the time for filing such petitions; and (3) instructs the parties to follow the filing and service procedures used in the Appeal Board security proceeding.

**RULES OF PRACTICE: COMMISSION REVIEW OF APPEAL
BOARD DECISIONS**

The Commission's normal practice for review of Atomic Safety and Licensing Appeal Board decisions applies even when an Appeal Board has conducted evidentiary hearings. *Pacific Gas and Electric Power Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903 (June 16, 1981); *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), ALAB-578, 11 NRC 189 (1980); *Northern States Power Co.* (Prairie Island Nuclear Generating Station, Units 1 and 2), ALAB-343, 4 NRC 169 (1976).

ORDER

On September 10, 1981, Governor Edmund G. Brown, Jr. filed a motion requesting that the Commission: (1) clarify whether parties wishing to challenge the Appeal Board's September 9, 1981 physical security decision should file exceptions pursuant to 10 CFR 2.762 or petitions for review pursuant to 10 CFR 2.786; (2) suspend the time for filing requests for review until the Commission acts on the request for clarification of appellate procedures; (3) grant an extension of time for requests for review by Governor Brown and Intervenor San Luis Obispo Mothers for Peace; and (4) provide guidance on filing and service of documents which contain protected information.

With respect to the request for clarification of appellate procedures, the Commission directs that appeals be taken pursuant to 10 CFR 2.786. The Commission's normal practice for reviewing Atomic Safety and Licensing Appeal Board decisions applies even when an Appeal Board has conducted evidentiary hearings. See e.g., *Pacific Gas and Electric Power Company* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903 (June 16, 1981); *Virginia Electric and Power Company* (North Anna Power Station, Units 1 and 2), ALAB-578, 11 NRC 189 (1980); *Northern States Power Company* (Prairie Island Nuclear Generating Station, Units 1 and 2), ALAB-343, 4 NRC 169 (1976).

The Commission has extended the time for filing petitions for review under 2.786. Petitions should be filed within 25 days after the date of issuance of this Order. Replies should be filed within 15 days after service of any petition for review.

Parties are instructed to follow the procedures for filing and service of documents that were used in the Appeal Board proceeding. See the July 17, 1980 letter from Bruce Norton, Counsel for PG&E to the Appeal Board and the July 28, 1980 letter from William J. Olmstead, Counsel for the NRC Staff, to the Appeal Board. However, documents are to be filed with the Commission by service of one copy on Trip Rothschild, Office of the General Counsel, NRC, 1717 H Street, N.W., Washington, D.C. 20555, Room 1065. Mr. Rothschild will arrange for distribution to the Commissioners and service on counsel for the NRC staff and Governor Brown and, where required, on PG&E's Washington office.

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 17th day of September, 1981.

* Commissioner Gilinsky abstained from this action. 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 Bradford was not present when this Order was affirmed, but had previously indicated his approval. Had Commissioner Bradford been present he would have affirmed his prior vote. Accordingly, the formal vote of the Commission was 3-0 in favor of the Order.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gilinsky
Peter Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket Nos. 50-275 O.L.
50-323 O.L.

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

September 21, 1981

Pursuant to its Immediate Effectiveness review under 10 CFR 2.764(f), the Commission, *inter alia*, (1) decides that the Licensing Board's July 17, 1981 Partial Initial Decision, LBP-81-21, 14 NRC 107, authorizing issuance of a fuel-loading and low-power testing license should become effective with respect to Unit 1, subject to documentation by the Director of Nuclear Reactor Regulation on the basis of findings to be made by him regarding certain matters specified by the Appeal Board in ALAB-653, 14 NRC 629; (2) directs that two contentions excluded by the Licensing Board from the low-power proceeding be included in the full-power proceeding (without prejudice to the Appeal Board review (and later Commission review) to the exclusion of these and other contentions in both the low and full-power proceedings); (3) denies the requests of the Governor of California and intervenors for a waiver of the Immediate Effectiveness rule for the Licensing Board's decision and certain other requests relating to the procedure for review of that decision, including stay requests; and (4) asks for the current views of FEMA regarding the adequacy of emergency planning for purposes of low-power testing at Diablo Canyon.

RULES OF PRACTICE: IMMEDIATE EFFECTIVENESS REVIEW

That one party or an interested State may differ sharply with the Licensing Board's resolution of contested issues in an operating license case is not a "special circumstance" that could justify waiver of the immediate effectiveness rule, 10 CFR 2.764, pursuant to 10 CFR 2.758. This is because the immediate effectiveness rule, 10 CFR 2.764, itself deals with operating license cases only if they are contested.

ATOMIC ENERGY ACT: RIGHT TO HEARING

Nothing in Section 274 1. of the Atomic Energy Act grants to an interested State any right to bypass normal appeal and stay review procedures and to bring matters directly before the Commission prior to license issuance.

MEMORANDUM AND ORDER

The Commission has reviewed pursuant to 10 CFR 2.764(f) the July 17, 1981 Atomic Safety and Licensing Board decision authorizing issuance of a fuel loading and low power testing license, LBP-81-21, 14 NRC 107; and relevant aspects of earlier Licensing Board decisions, LBP-78-19, 7 NRC 989 (June 12, 1978), LBP-79-26, 10 NRC 453 (September 27, 1979), and two recent Appeal Board decisions, ALAB-644, 13 NRC 903 (June 16, 1981) (Seismic), and ALAB-653, 14 NRC 629 (September 9, 1981) (Physical Security). Based upon this review and staff briefings regarding uncontested issues relative to Unit 1, the Commission has decided that the Licensing Board's July 17 decision should become effective with respect to Unit 1. The Director, Office of Nuclear Reactor Regulation, is therefore authorized to issue License No. DPR-76 permitting fuel loading and low-power testing at Diablo Canyon Nuclear Power Plant, Unit 1.

Before doing so, the Director is to document the basis for the findings that the Appeal Board has suggested or required him to make regarding:

- a. guard training for the low-power license;
- b. local law enforcement agency agreements; and
- c. response force size for the low-power license.

The Commission does not necessarily agree with the Board's conclusion regarding the definition of the word "several" found in 10 CFR 73.1(a)(1)(i). The Commission will provide guidance on this matter at a later date. However, this has no effect on our finding that fuel loading and low-power testing may be authorized by the NRC staff during the pendency of appeals of the Board's decision.

As part of its effectiveness review the Commission has examined the disputed contentions and subjects and is convinced they hold little significance, from the standpoint of health and safety, for low-power operation. However, without taking any view on whether the Board properly excluded Contentions 10 and 12 in its low-power review, the Commission directs the Licensing Board to include them in the full-power proceeding. The Commission believes that if the contentions have any significance it would be for full-power operation. This action is without prejudice to the Appeal Board review (and later Commission review) of the exclusion of these and other contentions in both the low-power and the full-power proceeding.

The Commission has also considered the requests of Governor Edmund G. Brown, Jr. and Joint Intervenors for a waiver, pursuant to 10 CFR 2.758, of the immediate effectiveness rule in 10 CFR 2.764, the request of Governor Brown that appeals from the Licensing Board's July 17, 1981 partial initial decision be filed directly with the Commission, and the September 15 request of Governor Brown for directed certification. For the reasons stated below, these requests are denied:

- a. The immediate effectiveness rule, 10 CFR 2.764, deals with contested operating license cases. That one party or an interested State may differ sharply with the Licensing Board's resolution of contested issues is not a "special circumstance" that could justify waiver under 10 CFR 2.758.

The rule does not deprive Governor Brown of any statutory rights under section 274 1. of the Atomic Energy Act. He, as well as the other parties, will have had full opportunity, as indicated below, to present argument before the Licensing Board, Appeal Board, and Commission, either initially, on appeal, or in the context of stay motions before the Commission and the Appeal Board. Nothing in section 274 1. grants to an interested State any right to bypass normal appeal and stay review procedures and to bring matters directly before the Commission prior to license issuance.

- b. With regard to the assertion that filing direct appeals with the Commission is necessary to shorten the appellate process and provide the Commission with timely opportunity to rule on the

important issues, the Commission is not persuaded that there is adequate reason to depart from its normal appellate procedures.

The Commission notes that in a Memorandum dated August 27, 1981, the Licensing Board stated that it was without jurisdiction to rule on Governor Brown's July 15, 1981 Motion to Reopen the Record to correct alleged NRC Staff misstatements regarding helicopter assistance in emergency plan notification. Jurisdiction now resides with the Appeal Board and the matter should be submitted directly to that forum if further consideration is desired at this juncture.

By letter of September 11, 1981, Joint Intervenors requested the Commission to undertake consideration of their application for a stay, presently before the Appeal Board, and to rule on that motion at the same time that it completes its effectiveness review under 10 CFR 2.764. For the reasons stated in the Appeal Board's Memorandum and Order of September 14, 1981, this request is denied.

In response to a number of comments, the Commission notes that in performing its effectiveness review, it has gone beyond the record developed before the Licensing and Appeal Boards. We took under consideration, as described below, the following material relevant to the emergency planning issue:

- a. The Report of the Federal Emergency Management Agency (FEMA) concerning the August 19, 1981 emergency planning exercise at Diablo Canyon; and
- b. A Memorandum to the Record from Joan Aron, NRC Office of Policy Evaluation, on the same subject.

This information bears directly upon the adequacy of emergency planning at Diablo Canyon. It is neither necessary nor reasonable that we be required to ignore it in determining whether issuance of the low-power license is in the public interest. In this case, significant negative information could have alerted the Commission to substantial problems not developed in the record (such as subsequent developments and areas not covered in the hearing). The Commission concluded this information did not raise such issues. The Commission considered the information only to this extent and did not consider whether it strengthened the record.

The Commission recognizes debatable elements in the position expressed by the staff in its proposed findings of fact and conclusions of law, that FEMA has not made a finding pursuant to 10 CFR 50.47(a) regarding the adequacy of the Diablo Canyon emergency plan for the purposes of low-power testing. Our preliminary review of the record, particularly the documents referenced in the staff SER, suggests a contrary conclusion. Our preliminary view on this matter is a factor in our decision to authorize

low-power testing. We find no adverse impact of emergency planning on public health and safety for fuel loading and low-power testing of Diablo Canyon, Unit 1.

The Commission is requesting, as of today, the current views of FEMA regarding the adequacy of emergency planning for purposes of low-power testing at Diablo Canyon. The Commission will take these views into account, together with the views of the parties, in its future actions regarding this facility.

On September 17 the Joint Intervenors requested that the Commission set a schedule for the disposition of the stay applications. This motion responded to the Appeal Board's September 14 Memorandum and Order which recited there was no need for expedition since the plant could not attain criticality before mid-October. Applicant has informed the Commission by letter of September 17 that criticality, the important milestone in the activities authorized by the low-power license, will occur no earlier than approximately 62 days after fuel loading commences. Therefore, we believe that there will be a reasonable period of time to act on stay applications before criticality and see no need to adopt a specific schedule for the disposition of stay applications at this time. Should applicant wish to reach criticality before the expiration of the 62 days, it is directed to notify the Commission of its intent at least 14 days before doing so.

The Commission denies Governor Brown's September 17, 1981 motion to defer consideration of the license to load fuel and conduct low-power testing. Governor Brown argues that because the Appeal Board imposed conditions on the issuance of a license in its September 9, 1981 decision (ALAB-653), the existing physical security plan is inadequate. The Commission has rejected Governor Brown's argument because the Board's conditions are binding upon the applicant.

The Commission also denies the September 18, 1981 Motion of Governor Brown which requests the Commission to review the regulatory impact of the security incident of July 15, 1981. The Commission has taken the incident into account in its effectiveness review and finds no need to augment the record to authorize issuance of the low-power license.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 21st day of September, 1981

*The separate views of Chairman Palladino, Commissioner Gilinsky, and Commissioner Ahearne follow.

SEPARATE STATEMENT OF CHAIRMAN PALLADINO

With regard to Commissioner Gilinsky's comments on emergency planning, I believe there is a reasonable legal position that the Commission's emergency planning requirements for low-power operation have been complied with for Diablo Canyon. I would characterize the emergency planning matter as a difficult, disputed legal issue with no clear, single answer. The Commission cannot in its immediate effectiveness review, resolve once and for all this type of issue. For me, the important fact is that all indications point to no undue risk at Diablo Canyon with respect to emergency planning for low-power operation.

COMMISSIONER GILINSKY'S SEPARATE OPINION DIABLO CANYON LOW-POWER LICENSE

On the basis of my own review of the materials which are a part of this case and of my own visit of the Diablo Canyon plants, I concur in the result reached by the Commission. I therefore approve the issuance of a fuel-loading and low-power operating license.

I had been concerned about the insufficient number of qualified reactor operators at Diablo Canyon. That concern has been relieved by the results of the most recent NRC operator examination which assure that there will be an adequate complement of senior operators. In view of the concern over delay in this case, I would note that until these results were received a few days ago the licensee was not ready to operate the plant.

I cannot let this occasion pass without commenting on the shoddiness of the Board's decisions in this case. The Board ignored the Commission's guidance of April 1, 1981, on admitting contentions to the hearing.¹ As a result, the Board excluded a number of contentions which should have been admitted to the low-power hearing. The Commission has looked into those contentions whose exclusion was clearly wrong and concluded that they do not have much safety significance for the low-power testing phase of operation. The Commission has directed the Licensing Board to admit two of these contentions to the full-power hearing. This cured the most flagrant Board errors and ensured that the two contentions will be considered where they may be important. This step does not, however, remedy the lack of fairness in the low-power hearing. The Commission should at least have allowed the parties to comment on the significance of these contentions. There was time enough to do this but the Commission declined to ask for such comment. I should add that it remains unclear whether other contentions, which the Commission has not examined in detail, were properly excluded.

The Board's initial decision on physical security was so flawed that it was vacated in its entirety by the Appeal Board. The Appeal Board, in its own decision, corrected the Licensing Board's major errors but then inexplicably devoted the bulk of its page opinion, which was not released to the public, to a bizarre effort to demonstrate that the Commission does not mean what it says when it uses the English language.

The Board's decision on emergency planning is also seriously flawed. The Board, misled by NRC staff allegations, failed to comply with the procedures prescribed in the regulations for evaluating the adequacy of

¹ In particular, the Board rejected Joint Intervenor contentions 10, 12 and 20 on the grounds that they bore an insufficient connection with any requirements of NUREG-0737. In its Order of April 1, 1981, the Commission stated that "if a party comes forward on a timely basis with significant new TMI-related evidence indicating that an NRC safety regulation would be violated by plant operation, we believe that the record should be reopened notwithstanding that the noncompliance item is not discussed in NUREG-0737 and 0694" (CLI-81-5). The three contentions allege that various General Design Criteria are not satisfied. This, in essence, constitutes a challenge to compliance with the regulations. The contentions should have been admitted pursuant to the above-cited Commission guidance without regard to their relationship to NUREG-0737.

emergency planning.² Instead of systematically comparing the existing measures with the criteria specified in the regulation, the Board contented itself with reviewing a few selected matters and making an overall judgment on the adequacy of the existing measures. As a result, the Commission has had to review the record in detail to obtain a clearer picture of the present state of emergency planning.

More importantly, the Commission's emergency planning regulations provide that no operating license will be issued unless NRC receives a finding from FEMA on the adequacy of off-site emergency preparedness.³ We do not have such a finding. Although there does not appear to be a public health and safety problem in relying on the present emergency plans for the purposes of low-power testing the fact is that the Commission has committed itself to relying on FEMA's expertise in this area. The worst effects of this are mitigated by the Commission's decision to ask FEMA for its views on the adequacy of the emergency plans for low-power operation. FEMA should respond before the plant achieves criticality if this process is to make sense. It would have been better to condition the license on receipt of a letter from FEMA on the acceptability of emergency preparedness. This the Commission declined to do. The parties to this case should, of course, be given an opportunity to comment on FEMA's finding.

² 10 CFR 50.47(c) (1) provides that: "Failure to meet the standards set forth in paragraph (b) of this section may result in the Commission declining to issue an Operating License; however, the applicant will have an opportunity to demonstrate to the satisfaction of the Commission that deficiencies in the plans are not significant for the plant in question, that adequate interim compensating actions have been or will be taken promptly, or that there are other compelling reasons to permit plant operation." Paragraph (b) of 10 CFR 50.47 enumerates 16 standards which the "onsite and offsite emergency plans for nuclear power reactors must meet" (10 CFR 50.47(b)).

³ 10 CFR 50.47(a) which provides that:

"(1) No operating license for a nuclear power reactor will be issued unless a finding is made by NRC that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency."

"(2) The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and capable of being implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and capable of being implemented. In any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on a question of adequacy."

The same Board will preside over the full-power hearing. Discipline, competence, and thoroughness are essential to the integrity of our licensing process. The Commission's regulations are intended to insure due process and procedural fairness to the parties and to insure that initial decisions are of high quality. Cutting corners in a misguided effort to accelerate a hearing can result in a procedural morass and a decision which fails to survive appellate review. For example, if a fraction of the effort devoted to explaining why we do not need a FEMA finding on emergency preparedness had been devoted to obtaining such a finding, we would have resolved this point long ago.

ADDITIONAL VIEWS OF COMMISSIONER AHEARNE

I have additional comments concerning two areas: compliance with the emergency planning regulations and the Licensing Board's rulings on contentions in the reopened proceeding. As a general rule I do not believe comments of this nature are appropriate at this stage. However, these areas have been the subject of vehement disagreement within the Commission and I would prefer to have my views reflected as a public matter.

Compliance with Emergency Planning Regulations

I do not agree that issuance of the low-power decision should be conditioned on obtaining a letter from FEMA addressing emergency planning. Based on a brief review, I believe the correct approach was used and have identified no inadequacies which would justify Commission action at this time.

The Commission first discussed the appropriate requirements for low power testing in connection with Sequoyah 1. Based on that experience a general approach was developed for the next plants:

"An NRC/FEMA resolution of the emergency preparedness requirements for low power testing of the next few facilities (North Anna, Salem, Diablo Canyon) scheduled for decision is enclosed. The FEMA/NRC Steering Committee findings will form the basis for favorable NRR Safety Evaluations for low power testing in the area of emergency preparedness."¹

¹ "Emergency Preparedness Requirements for Near Term Low Power Testing Authorizations," fm W. Dircks, Acting Executive Director for Operations, to Commissioners, dtd 3/25/80 (enclosing "FEMA/NRC Interim Agreement on Criteria for Low Power Testing at New Commercial Nuclear Facilities").

The process continued to develop.² However, we were consistent in assuming that Diablo would be measured against the interim criteria — just as North Anna and Salem were. Consistent with this assumption the staff's approach in Diablo is virtually identical to the Commission's treatment of Salem and North Anna.³

During this same time frame, the Commission was developing its emergency planning rule. A proposed rule was published in December 1979.⁴ The final rule was published in August 1980 and was made effective in November 1980.⁵ Unfortunately, the Commission did not address the appropriate framework for assessing the adequacy of emergency planning for low power licenses.

Although different treatment for low power operation is not explicitly recognized in the regulations, I would have expected the flexibility provided by 10 CFR 50.47(c)(1) would have accommodated the Commission's intent. However, it has been argued there may be some residual problems for the interim approach concerning §50.47(a)(2). Since the focus appears to be on a technicality caused by a failure on the Commission's part to adequately implement its intent rather than a concern about compliance with the intended standards, I do not see a basis for dealing with the issue in this decision.

Licensing Board Rulings on Contentions in the Reopened Proceeding

I believe the Licensing Board's rulings on contentions were consistent with the Commission's guidance.

² "We conclude that an appropriate objective for those facilities beyond North Anna, Salem and Diablo Canyon is to assess against the upgraded NRC/FEMA criteria and making [sic] findings with regard to the significance of any deficiencies for low power testing authorizations."

"Emergency Preparedness Criteria for Low Power Testing," fm FEMA/NRC Steering Committee to H. Denton, Director of the Office of Nuclear Reactor Regulation, NRC and J. McConnell, Assistant Associate Director for Population Preparedness, FEMA dtd 3/6/80.

³ Compare the Safety Evaluation Report, Supplement No. 4 for operation of Salem Nuclear Generating Station, Unit 2, NUREG-0517 Supp. No. 4 at III.B-1 (April 1980) and the Safety Evaluation Report, Supplement No. 10 for operation of North Anna Power Station, Unit 2, NUREG-0053 Supp. No. 10 at III.B-1 (April 1980) with the Safety Evaluation Report, Supplement No. 10 for operation of Diablo Canyon Nuclear Power Station Units 1 and 2, NUREG-0675 Supp. No. 10 at III.B-1 (August 1980).

⁴ Emergency Planning Proposed Rule, 44 FR 75167 (Dec 19, 1979).

⁵ Emergency Planning Final Rule, 45 FR 55402 (Aug 19, 1980).

On June 20, 1980 the Commission issued a policy statement providing guidance concerning treatment of operating license applications in light of TMI.⁶ On December 18, 1980 the Commission issued a revised policy statement.⁷ In both, a key decision was:

“The Commission has decided that current operating license applications should be measured by the NRC staff against the regulations, as augmented by these requirements [NUREG 0654 and NUREG 0737 respectively; footnote omitted]. In general, the remaining items of the Action Plan should be addressed through the normal process for development and adoption of new requirements rather than through immediate imposition on pending applications.”

They both also addressed litigation of TMI issues in OL proceedings. As was explained in the December statement (virtually identical to guidance found in the June statement):

“The Commission believes the TMI-related operating license requirements list as derived from the process described above should be the principal basis for consideration of TMI-related issues in the adjudicatory process. There are good reasons for this. First, this represents a major effort by the staff and Commissioners to address more than one hundred issues and recommendations in a coherent and coordinated fashion. This entire process cannot be reproduced in individual proceedings. Second, the NRC does not have the resources to litigate the entire Action Plan in each proceeding. Third, many of the decisions involved policy more than

⁶ “Further Commission Guidance for Power Reactor Operating Licenses; Statement of Policy,” 45 FR 41738 (June 20, 1980).

⁷ “Further Commission Guidance for Power Reactor Operating Licenses — Revised Statement of Policy,” 45 FR 85236 (December 24, 1980).

factual or legal decisions. Most of these are more appropriately addressed by the Commission itself on a generic basis than by an individual licensing board in a particular case.”

With respect to the contentions issue, the December statement explicitly provided (once again virtually identical to guidance found in the June statement):

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

“Also, present standards governing the reopening of hearing records to consider new evidence on TMI-related issues should be adhered to.”

On April 1, 1981 the Commission provided additional guidance for the Diablo Licensing Board.⁸ The order specifically provided:

“As we stated in the Revised Policy Statement, where the evidentiary record on safety issues has been closed, the record should not be reopened on TMI-related issues relating to either low or full power absent a showing, by the moving party, of ‘significant new evidence not included in the record, that materially affects the decision.’ This is in accordance with longstanding Commission practice.”

The Commission provided guidance. The Board was best suited to apply that guidance to the particular case. It was more familiar with the details of the case and had the advantage of being able to personally observe the participants. Thus it was in a better position to assess the significance of the issues raised. Absent convincing arguments to the contrary, I am inclined to defer to the Board. So far I have not seen such arguments.

The Commission put a significant amount of time, effort, and resources into evaluating the implications of TMI. I believe the Commission *meant* to impose a “heavy burden” on those who wish to revisit the TMI issues. This does not mean I see absolutely no value in litigating these issues. However, I believe we are justified in requiring people to explain in detail why discussing the issues one more time is really worthwhile.

⁸ *Pacific Gas & Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), CLI-81-5, 13 NRC 361 (1981).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gillinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matters of

Docket Nos. 50-247
50-286

**CONSOLIDATED EDISON
COMPANY OF NEW YORK
(Indian Point, Unit 2)**

**POWER AUTHORITY OF
THE STATE OF NEW YORK
(Indian Point, Unit 3)**

September 18, 1981

The Commission clarifies its previous Memorandum and Order, CLI-81-1, 13 NRC 1 (1981) which *inter alia*, directed the holding of a hearing to consider certain long-term safety issues relating to Units 2 and 3 of the Indian Point facility, and appoints an Atomic Safety and Licensing Board to preside over the proceeding.

MEMORANDUM AND ORDER

1. The Commission has examined its January 8, 1981 Memorandum and Order in this proceeding and has decided that certain aspects of that Memorandum and Order require clarification as follows:

- (a) Footnote 4 on pages 6 and 7 is revised to read as follows:

Because of the investigative nature of this proceeding, further guidance is necessary with respect to certain procedural matters. Because the proceeding, although adjudicatory in form, is

not mandated by the Atomic Energy Act, it is not an "on the record" proceeding. Although normal *ex parte* constraints will apply to communications to the Licensing Board, the Commission will not be limited in its ability to obtain information with respect to Indian Point from any source. Because the Commission itself is designating by this Order the issues it wishes to be addressed in the adjudication (see the series of questions on pp. 9-10 *infra* and the reference to the Union of Concerned Scientists' petition below in this note) it is important that contentions raised by parties and sub-issues raised by the Board in this proceeding contribute materially to answering those designated issues. Contentions based on the allegations in the Union of Concerned Scientists' petition to the effect that certain Commission regulations are not met in one or both units will be accepted if they meet the requirements of 10 CFR Part 2 without regard to whether they fall within or outside the questions on pages, 9-10. However the Board will not be bound by the provisions of 10 CFR Part 2 with regard to the admission and formulation of other contentions. In granting this discretion to the Board, the Commission emphasizes that its purpose is to ensure that the Board is empowered only to accept and formulate, after consultation with the parties, those contentions which seem likely to be important to resolving the Commission's questions on pages 9-10, and thereby to assure that the proceeding remains clearly focused on the issues set forth in this Order. The Licensing Board may also, without regard to the provisions of 10 CFR Part 2, establish whatever order of presentation it deems best suited to the proceeding's investigative purposes. In other respects, except as provided elsewhere in this Order, 10 CFR Part 2 will control. If the Board concludes that further departure from Part 2 is necessary for the efficient conduct of the hearing, it should request such authorization from the Commission. In any event, however, the Commission expects that, consistent with the approach outlined above with respect to contentions, the Licensing Board will use its existing authority under Part 2 to assure the relevance and efficiency of discovery and cross-examination, in the interest of a focused proceeding. The Licensing Board shall not reach an initial decision, but as noted in the Order, shall instead formulate recommendations on the questions posed by the Commission. No party will have the "burden of persuasion" as the term is normally used in adjudicatory proceedings; if evidence on a particular matter is in equipoise, the Board's recommendation

may be expected to reflect that fact. The staff will be a party to the proceeding, and the licensees will be admitted as parties upon request filed within 30 days of Federal Register notice of the appointment of a Licensing Board. All others wishing to intervene shall file petitions for intervention within 30 days of Federal Register notice of the appointment of a Licensing Board. The appointment of the Licensing Board will be announced by subsequent order of the Commission.

(b) Question 1 on page 9 is revised to read as follows (including footnote 5) :

1. What risk may be posed by serious accidents at Indian Point 2 and 3, including accidents not considered in the plants' design basis, pending and after any improvements described in (2) and (4) below? Although not requiring the preparation of an Environmental Impact Statement, the Commission intends that the review with respect to this question be conducted consistent with the guidance provided the staff in the Statement of Interim Policy on "Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969;" 44 FR 40101 (June 13, 1980).⁵

⁵In particular, that policy statement indicates that:

Attention shall be given both to the probability of occurrences of releases and to the environmental consequences of such releases;

The reviews "shall include a reasoned consideration of the environmental risks (impacts) attributable to accidents at the particular facility or facilities";

"Approximately equal attention should be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences"; and

Such studies "will take into account significant site and plant-specific features"

Thus, a description of a release scenario must include a discussion of the probability of such a release for the specific Indian Point plants.

(c) Question 2 on page 9-10 is revised to read as follows:

2. What improvements in the level of safety will result from measures required or referenced in the Director's Order to the licensee, dated February 11, 1980? (A contention by a party that one or more specific safety measures, in addition to those identified or referenced by the Director, should be required as a condition of operation would be within the scope of this inquiry if, according to the Licensing Board,

admission of the contention seems likely to be important to resolving whether (a) there exists a significant risk to public health and safety, notwithstanding the Director's measures, and (b) the additional proposed measures would result in a significant reduction in that risk.)

2. The Commission hereby appoints an Atomic Safety and Licensing Board to preside over the proceeding composed of the following members: Louis J. Carter, Chairman; Oscar H. Paris; and Frederick J. Shon.
3. In view of the delay in constituting the presiding Atomic Safety and Licensing Board, the schedule for decision as originally set forth in the January 8, 1981 Memorandum and Order needs to be revised. Accordingly, the Commission would like to receive the Board's recommendations no later than one year from the date of this Order. It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 18th day of September 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gilinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

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

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

September 22, 1981

The Commission requests the Licensing Board to describe the particular factors that constituted the basis for the Board's adoption *sua sponte* of certain of a dismissed intervenor's contentions.

OPERATING LICENSE HEARINGS: SUA SPONTE ISSUES

In operating license proceedings, a licensing board may exercise its *sua sponte* authority to examine matters not put into controversy by the parties only if it "determines that a serious safety, environmental, or common defense and security matter exists." 10 CFR 2.760a.

OPERATING LICENSE HEARINGS: SUA SPONTE ISSUES

In operating license proceedings, a licensing board's determination to raise a matter *sua sponte* pursuant to 10 CFR 2.760a should be set forth in a separate order which makes the requisite findings and briefly states the reasons for raising the issue.

ORDER

In an order issued July 24, 1981, the Licensing Board granted intervenor Texas Association of Community Organizations for Reform Now's (ACORN's) motion for voluntary dismissal from this proceeding. In connection with this action, the Board reaffirmed three Board questions previously propounded and adopted eight of ACORN's contentions in an exercise of its *sua sponte* authority under 10 CFR 2.760a. Consistent with its obligations under the policies of the Commission, the board forwarded a copy of this order to, *inter alia*, the Commission.

As the Licensing Board noted, it may exercise its *sua sponte* authority only if it "determines that a serious safety, environmental, or common defense and security matter exists." 10 CFR 2.760a. This determination should be set forth in a separate order which makes the requisite findings and briefly states the reasons for raising the issue. Memorandum, Chilk to Rosenthal, Cotter and Bickwit, Raising of Issues *Sua Sponte* in Adjudicatory Proceedings, dated June 30, 1981.

In its Order of July 24, 1981, the Licensing Board noted that ACORN's "Contentions 12 through 19 are related to issues which the Staff is still reviewing." Order at 15. Accordingly, the Board retained these contentions under its *sua sponte* authority. While the Board stated that these issues "may have significant health and safety consequences," it gave no reason for this determination other than the matters were still under staff review.

The Board is hereby requested to describe, as to each of the eight ACORN contentions it proposes to retain under its *sua sponte* authority, particular factors beyond the mere pendency of staff review upon which it bases its determination of the existence of "a serious safety, environmental, or common defense and security matter."

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 22nd day of September, 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gllinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket No. 50-10

COMMONWEALTH EDISON COMPANY
(Dresden Nuclear
Power Station, Unit 1)

September 28, 1981

The Commission directs the appointment of an Atomic Safety and Licensing Board to rule on petitions for hearings with regard to licensee's proposal to chemically decontaminate Unit 1 of the Dresden facility, and provides guidance on the conduct of a hearing should the Board decide one is required.

ATOMIC ENERGY ACT: HEARINGS

Section 189a of the Atomic Energy Act, as amended, provides that the Commission shall conduct a hearing at the request of persons whose interest may be affected. Petitioners satisfy the Commission's criteria for intervention if they are found to have standing and come forward with at least one litigable contention.

ATOMIC ENERGY ACT: HEARINGS

Neither prior notice nor a prior hearing is required under Section 189a of the Atomic Energy Act, as amended, for Commission approval of a license amendment in situations where the NRC staff makes a "no significant hazards consideration" finding.

RULES OF PRACTICE: STANDING TO INTERVENE

Each person seeking intervention in a Commission licensing proceeding must separately establish standing. 10 CFR 2.714.

RULES OF PRACTICE: INTERVENTION (DISCRETIONARY)

Intervention in a Commission licensing proceeding may be granted as a matter of discretion according to specific criteria. *Portland General Electric Co. et al.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616, (1976).

RULES OF PRACTICE: RIGHT TO PARTICIPATE

Participation in a Commission licensing proceeding by a person who is not a party is at the discretion of the presiding officer and can only take the form of a limited appearance. 10 CFR 2.715.

RULES OF PRACTICE: CONSOLIDATION

Only parties to a Commission licensing proceeding may be consolidated. Petitioners who are not admitted as parties may not be consolidated for the purposes of participation as a single party. 10 CFR 2.715a.

NEPA: HEARINGS (ON ENVIRONMENTAL IMPACT STATEMENT)

Neither the Atomic Energy Act, the National Environmental Policy Act, nor the Commission's regulations require that there be a hearing on an environmental impact statement. *Vermont Yankee Nuclear Power Corp. v. NRC*, 435 U.S. 519, 548 (1978). Public hearings are held on an EIS only if the Commission finds such hearings are required in the public interest. 10 CFR 2.104.

MEMORANDUM AND ORDER

This matter involves a request for hearings by several persons and groups (Petitioners)¹ with regard to Commonwealth Edison's (CECo) pro-

¹ Petitioners are Citizens for a Better Environment, Prairie Alliance, Illinois Safe Energy Alliance, Kay Drey, Bridget Rorem, and Marilyn Shineflug.

posal to chemically decontaminate Dresden, Unit One. On January 8, 1981, the Commission asked the staff, CECO and the petitioners to brief three questions regarding the scope and format of any hearing on this proposal. Briefs have been received from all participants and are summarized below. For the reasons discussed below, the Commission has decided to establish an Atomic Safety and Licensing Board to determine whether the petitioners have standing, and has provided guidance on the conduct of a hearing should the Licensing Board determine that one is required.

I.

A. Background

On December 19, 1974, CECO submitted a proposal for the chemical decontamination of the interior surfaces of the Dresden 1 Primary Coolant System. The NRC staff completed its review of that proposal on December 9, 1975 and concluded that the program could be conducted with reasonable assurance that the health and safety of the public would not be endangered. Specifically, the staff found:

The chemical decontamination of the Dresden 1 primary coolant system will be performed entirely within a closed decontamination system. The system has been designed so that no chemical or radiological waste will be released to the environment from the decontamination process. All waste generated in the process will be either solidified for offsite burial at a licensed burial ground or reprocessed for reuse onsite. The solid wastes produced are similar in type and quantity to those handled routinely at the site. Therefore, no adverse environmental impacts are anticipated due to the decontamination ...

We have concluded, based on the considerations discussed above, that:

(1) because the chemical cleaning does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the cleaning project does not involve a significant hazard consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of

this amendment will not be inimical to the common defense and security or to the health and safety of the public.

While the staff noted that its review had identified three items as unresolved, the staff authorized initiation of the chemical decontamination program in anticipation that these items would be successfully resolved as specified.²

On November 14, 1979, CECO requested two changes to its Appendix A Technical Specifications in order to support the chemical cleaning of the Dresden 1 primary system. These changes concern (1) deletion of the requirement to maintain primary containment integrity during the chemical cleaning outage when all fuel is removed from the reactor and containment; and (2) exclusion of the radioactive liquid storage tanks which are inside seismically qualified structures from the above grade storage curie limitation. On July 8, 1980, Petitioners requested a hearing on the environmental impact statement related to decontamination of Dresden 1³ and "on the application for amendment to CECO's operating license for Dresden 1, necessary for the said decontamination."

On January 8, 1981, the Commission asked the staff, CECO, and Petitioners to brief three questions regarding the scope and format of any hearing on this proposal.

The participants' responses to the Commission's questions are summarized below.

Question (a):

What, if any, license modifications in addition to the two Technical Specification changes sought by CECO are required for decontamination?

²These items and the manner in which they were to be completed follow:

1. The testing program will be completed and the results submitted for the review and approval of the NRC staff prior to performing the proposed chemical cleaning.
2. A pre-service inspection program for the primary coolant boundary will be formulated and submitted for our review and approval prior to returning the reactor to service.
3. Post-cleaning surveillance program which includes additional surveillance specimens and a specimen withdrawal and examination schedule will be submitted for our review and approval prior to returning the reactor to service.

By early 1980, CECO had completed satisfactorily the three open items.

³On March 19, 1979, Ms. Kay Drey requested that an environmental impact statement be prepared on the decontamination of Dresden 1. On September 20, 1979, the Illinois Safe Energy Alliance requested public hearings on the decontamination of Dresden 1 based on the lack of assurance that the NRC would issue an environmental impact statement. These requests were treated as requests for action under 10 CFR 2.206. By petition dated March 13, 1980, Mr. Robert Goldsmith, on behalf of Citizens for Better Environment, and Prairie

CONTINUED

Staff states that it will seek a license modification which will provide reasonable assurance that arrangements exist for the acceptance of solidified decontamination waste at either the Beatty, Nevada or Hanford, Washington low-level waste burial sites. In addition, staff may seek a license amendment for a program of post-decontamination inspection of metal specimens (coupons) which will be placed in various parts of the primary system prior to decontamination. However, staff does not expect to seek a license modification for the selection and placement of those metal specimens. Staff does not expect to seek any other license modification prior to decontamination. CECo adopted staff's position on this issue. Petitioners did not suggest any license amendments at this time because they do not want to prejudice their ability to file contentions if they are required to submit an additional petition to intervene.

Question (b):

What, if any, license modifications are required for a resumption of operation?

Staff interprets this question to be directed to license modifications required for a resumption of operation on account of the chemical decontamination and not to other license modifications required prior to start up but not related to decontamination. At this time staff expects that no further license modifications will be required because it believes that the post-decontamination monitoring requirements do not satisfy the criteria for imposing technical specifications. CECo agrees with staff's position, but emphasizes that it would be impracticable to address restart issues in a hearing on the chemical decontamination because of the uncertainties

Alliance supported Ms. Drey's petition requesting preparation of an environmental impact statement. On June 26, 1980, the director issued his decision under 10 CFR 2.206. Although the results of the staff review indicated that the chemical decontamination of Dresden 1 would not significantly affect the quality of the human environment, the Director decided that an environmental impact statement should be prepared due to the significant interest and concern expressed by members of the public. The Director thus denied requests for hearings by the Illinois Safe Energy Alliance on the ground that these requests were premised on the failure of the NRC to prepare an environmental impact statement. This environmental impact statement was issued on October 17, 1980. On July 8, 1980, Citizens for a Better Environment, Prairie Alliance, Ms. Kay Drey, Ms. Bridget Rorem, Illinois Safe Energy and Ms. Marilyn Shineflug again requested a hearing on the impact statement as well as on the amendments necessary for decontamination. This request is dealt with in this Memorandum and Order.

introduced by the large number of other pending actions on modifications required for restart but unrelated to decontamination.⁴ Petitioners state that they will probably not raise specific technical specifications or other license modifications for return to commercial operation. However, they may wish to raise issues regarding the environmental implications of the decontamination upon Dresden's capability to return to service and the evaluation of alternatives to the return to service.

Question (c):

If license modifications are required for both decontamination and return to operation, how should the hearing be structured?

Staff believes that a prior hearing is not required because the proposed chemical decontamination does not present a significant hazards consideration. Accordingly, staff believes that any pre-amendment hearing would be at the discretion of the Commission and, thus, could be structured at the discretion of the Commission. If a hearing is granted, staff recommends that the petitioners should be required to participate jointly as a single party. Moreover, because five of the six petitioners have not established their standing on the face of their petition, they should be directed to set forth their interests with particularity to allow a determination of their standing to participate.

As to the scope of any hearing, staff would include those matters directly related to the environmental impact and safety of the proposed decontamination. This would include an inquiry into whether there is reasonable assurance that follow-up requirements can be developed to monitor the effects of the decontamination on the integrity of materials in Dresden, Unit One. However, such inquiry should not require an examination of post-decontamination technical specifications, if any.

CECo believes that the Commission has already decided to conduct a hearing, and suggests that if *Sholly v. NRC* (D.C. Cir. Nos. 80-1691, 80-1783, and 80-1784, filed Nov. 19, 1980) is reversed, the chemical decontamination can be initiated prior to the end of that hearing because staff has made a determination of no significant hazards consideration. As to the scope of the hearing, CECo believes it should address the chemical cleaning and necessarily related issues including waste disposal and post-cleaning follow-up requirements. In addition, they suggest that since an environmental impact statement has been prepared, it should be presented

⁴ These include review of the high pressure coolant injection design, modification of the reactor protection system, installation of a reactor recirculation pump trip, environmental qualification of equipment, implementation of applicable TMI action plan requirements, and modifications arising from the Systematic Evaluation Program.

at the hearing. However, CECo believes there will be no need to discuss alternatives if the Licensing Board initially finds that the proposed decontamination will have no significant impact on the human environment and also finds that the proposal does not give rise to unresolved conflicts concerning alternative uses of available resources. Finally, CECo believes that the decontamination should be heard separately from the restart because the pendency of other modifications would render impracticable the consideration of any restart issues at this time.

Regarding procedural details, CECo agrees that petitioners should be consolidated as a single party. Moreover, because one petitioner has established standing on the face of her petition, CECo believes it would be redundant and unnecessary to require the other petitioners to establish their interest in the proceeding.

Petitioners also recommend that restart be left for a separate proceeding, and would limit this proceeding to license modifications and all environmental issues related to decontamination.

II.

The following discussion provides guidance on the conduct of any hearing which may be required.

Procedural Matters

A. Timing of Hearing

A hearing is required if the petitioners satisfy the Commission's criteria for intervention. Petitions for hearings have been received, and Section 189a. of the Atomic Energy Act of 1954, as amended ("Act"), provides that the Commission shall conduct a hearing at the request of persons whose interest may be affected. If the petitioners are found to have standing and come forward with at least one litigable contention, the only remaining question is whether or not that hearing must be concluded prior to initiation of the proposed decontamination. Staff and CECo believe that a prior hearing is not required because staff has made a finding of no significant hazards consideration. Petitioners contend that staff's finding is immaterial because, in their view, Section 189a. of the Atomic Energy Act of 1954 requires the NRC to provide a prior hearing if it is requested.

The Commission has interpreted Section 189a. of the Atomic Energy Act of 1954, as amended, to provide that neither prior notice nor a prior hearing is required in situations where staff makes a "no significant hazards consideration" finding. In this case, the staff has not yet issued its determination of whether the proposed technical specification changes raise

a significant hazards consideration. However, unless there is a reversal of the staff's previous indication that approval of the chemical decontamination does not involve a significant hazards consideration, an adjudicatory hearing need not be held prior to issuance of these amendments. We understand that the staff has prepared an updated Safety Evaluation Report. By copy of this Order, the Director, Office of Nuclear Reactor Regulation is directed promptly to issue a decision on whether the proposed amendments present "no significant hazards consideration" and to include in that decision all supporting documentation.

The Licensing Board, which will be established pursuant to this Order, need not wait for the Director to issue his decision before initiating a proceeding to determine which petitioners, if any, have standing. If the Board determines that some of the petitioners have satisfied the intervention criteria, it shall initiate a hearing. However, if the Director determines that the proposed licensing modifications present "no significant hazards consideration," then the decontamination may be initiated prior to the conclusion of any hearing.

B. Parties

The only issue here is the treatment of the petitioners. Commission practice requires each party to separately establish standing. 10 CFR 2.714. Intervention may also be granted as a matter of discretion according to specific criteria.⁵ Participation by a person who is not a party is at the discretion of the presiding officer and can only take the form of a limited appearance. 10 CFR 2.715. Moreover, the rules do not provide for the consolidation of petitioners who are not admitted as parties for the purposes of participation as a single party. The rules provide for the consolidation of parties only. 10 CFR 2.715a. Accordingly, the Licensing Board shall determine which petitioners have standing and shall then consolidate those petitioners for treatment as a single party.

Scope of the Hearing

A. Matters Unrelated to Decontamination

If a hearing is initiated, the Commission believes that only decontamination related matters should be considered. As CECo states, many other modifications must be completed before the plant can return to operation. The Commission did not intend to address these other matters in this context.

⁵ *Portland General Electric Co., et al.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, 4 NRC 610, 616 (1976).

B. Scope of the Hearing

The Commission believes that the scope of any hearing should include the proposed license amendments, and any health, safety or environmental issues fairly raised by them. We believe that this scope is consistent with the requirements of the Atomic Energy Act and NRC practice. See *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-516, 12 NRC 419, 426 (1980). As a practical matter, this formulation of the scope may result in the same scope of proceeding as the staff's directly related test, but will avoid arguments over the "directness" of the relation between the proposal and an identified safety issue. Similarly, the proposed formulation avoids arguments over whether a safety issue is "necessarily related" to the proposal.

C. License Modifications

The scope of a hearing must be broad enough to include any issues related to the proposed license modifications. However, because we believe that the hearing should be limited to decontamination related issues, there is no need to now consider license modifications which may be required for a resumption of operation. Regarding the need for license amendments to conduct the decontamination, the participants have identified only the two Technical Specification changes sought by CECo and a license requirement regarding arrangements for waste disposal contemplated by the staff. The scope of any hearing held on this matter will encompass these proposed license changes. In addition, the Commission expects the Licensing Board to follow usual practice regarding consideration of the need for other license modifications.

Request for Hearing on the EIS

In response to the request for a hearing on the EIS, neither the Atomic Energy Act, the National Environmental Policy Act,⁶ nor the Commission's regulations require that there be a hearing on an environmental impact statement. Thus, a Commission decision to hold public hearings on this document would be made pursuant to 10 CFR 2.104, indicating that the Commission had found that such hearings are required in the public interest. The Commission does not so find.

Given that the staff has concluded that the decontamination project will have no significant impact on the human environment, members of the NRC staff held a public meeting on the Draft Environmental Statement in Morris, Illinois on August 14, 1980, and the Final Environmental Statement reflected the comments from that meeting as well as all of the written comments submitted to the NRC, the Commission finds that the public interest does not require a hearing on the Final Environmental Statement.

III.

Pursuant to the Atomic Energy Act of 1954, as amended, and Part 2 of the Commission's rules of practice, the Commission directs the Chairman of the Atomic Safety and Licensing Board Panel to appoint an Atomic Safety and Licensing Board to rule on the Petitions for Public Hearings filed by the Petitioners. If that Board determines a hearing is required, the Board is instructed to conduct an adjudicatory hearing in accordance with 10 CFR Part 2, subpart G and the guidance provided in this Memorandum and Order.

Moreover, pursuant to 10 CFR 2.785(a)(2), the Commission directs the Chairman of the Atomic Safety and Licensing Appeal Panel to appoint an Atomic Safety and Licensing Appeal Board for this proceeding, and authorizes that Board to exercise the authority and perform the functions which would otherwise have been exercised and performed by the Commission in this proceeding, subject to the possibility of later Commission review pursuant to 10 CFR 2.785. The Appeal Board will be designated pursuant to 10 CFR 2.787 and notice as to membership will be published in the *Federal Register*.

⁶ *Vermont Yankee Nuclear Power Corp. v. NRC*, 435 U.S. 519, 548 (1978).

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
this 28th day of September, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman

In the Matter of

**Docket Nos. 50-500
50-501**

**THE TOLEDO
EDISON COMPANY, et al.
(Davis-Besse Nuclear
Power Station, Units 2 and 3)**

September 3, 1981

The Appeal Panel Chairman decides against the need to convene an Appeal Board to examine conditions imposed by the Licensing Board in connection with the withdrawal of a construction permit application and termination of this licensing proceeding, and explains the reasons for his action.

APPEAL BOARD: SCOPE OF REVIEW

Appeal board review will be routinely undertaken of any final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues. *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687, 692 (1979).

MEMORANDUM

On August 28, 1981, the Licensing Board entered an unpublished order in which it granted the applicants' request (1) to withdraw their application for construction permits for Units 2 and 3 of the Davis-Besse nuclear facility; and (2) to terminate this licensing proceeding. See ALAB-622, 12 NRC 667 (1980). Accordingly, two partial initial decisions

previously rendered by that Board¹ (which had paved the way for the issuance of limited work authorizations (LWAs) for Units 2 and 3 under 10 CFR 50.10(e)(1)(3)) were vacated.²

In taking this action, the Licensing Board imposed a number of conditions which required the applicant to take certain affirmative measures designed (1) to restore the site as nearly as possible to its natural (*i.e.*, pre-LWA) state; and (2) to enhance its qualities as a wildlife habitat. *See* 10 CFR 2.107(a). It appears that none of those conditions is controversial; to the contrary, they have the full approval of both the applicants and the NRC staff (the only present parties to the proceeding).

"Appeal board review will be routinely undertaken of *any* final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues". (*Washington Public Power System (WPPSS Nuclear Project No. 2)*, ALAB-571, 10 NRC 687, 692 (1979) (emphasis in original). There thus might be occasions on which an appeal board would have to be convened to consider the matter of the imposition of conditions under 10 CFR 2.107(a) in connection with the withdrawal of a construction permit application and the resultant termination of the adjudicatory proceeding on that application. This, however, is not such an occasion. Apart from the fact that they are acceptable to all concerned, the conditions at bar are unexceptional in nature and, on their face, seem entirely appropriate to the accomplishment of their laudable purpose. That being so, it would be an uneconomic use of Appeal Panel resources to undertake a further formal examination of them.

FOR THE APPEAL PANEL
CHAIRMAN

Barbara A. Tompkins
Secretary to the Appeal Panel

¹ LBP-75-75,2 NRC 993 (1975); LBP-78-29, 8 NRC 284 (1978).

² Those partial initial decisions were struck from the Appeal Panel's docket in ALAB-622, *supra*, 12 NRC at 669. The Licensing Board's August 28 order authorized the Director of the Office of Nuclear Reactor Regulation to revoke the outstanding LWAs which had been issued in the wake of the decisions.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges*

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

In the Matter of

Docket Nos. 50-275 OL
50-323 OL

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

September 9, 1981

Based upon its review of the entire record on the physical security plan issued in this operating license proceeding for the Diablo Canyon facility, the Appeal Board concludes that the applicant's security plan, subject to certain conditions and restrictions, conforms to all applicable provisions of the Atomic Energy Act of 1954, as amended, and the Commission's security regulations. The Board set out its findings of fact and conclusions of law in a sealed separate opinion (ALAB-653 RESTRICTED) because of the sensitive character of the numerous details of the facility security plan which the opinion discusses.

APPEARANCES

Messrs. Bruce Norton and Arthur C. Gehr,
Phoenix, Arizona, and
Malcolm H. Furbush and Philip A. Crane, Jr.,
San Francisco, California,
for the applicant,
Pacific Gas and Electric Company.

* Richard S. Salzman was formerly the Chairman of this Appeal Board and participated in the evidentiary hearing. He resigned from the Appeal Panel as of July 19, 1981, and accordingly took no part in the final consideration and disposition of this matter.

**Messrs. Herbert H. Brown, Lawrence C. Lanpher and
Christopher B. Hanback, Washington, D. C., and
Byron S. Georgiou, Sacramento, California,
for Governor Edmund Brown, Jr.
of the State of California.**

**Messrs. Harry M. Willis and W. Andrew Baldwin,
San Francisco, California,
for the intervenor,
San Luis Obispo Mothers for Peace.**

**Messrs. William J. Olmstead and Charles Barth and
Mrs. Lucinda Low Swartz
for the Nuclear Regulatory Commission staff.**

DECISION

We issued today ALAB-653 RESTRICTED. That decision contains our findings of fact and conclusion of law on the contested security plan issues in the operating license proceeding for Pacific Gas and Electric Company's two-unit Diablo Canyon nuclear facility. Because ALAB-653 RESTRICTED contains numerous details of the facility security plan, it must be treated as protected information and may not be publicly disclosed. Our ultimate conclusion is not so restricted, however, and provides a public record of our action on the security plan issues.

Based on our review of the entire record on the security plan issues, and subject to the conditions and exceptions noted in ALAB-653 RESTRICTED, we conclude that the applicant's security plan conforms to all applicable provisions of the Atomic Energy Act of 1954, as amended, and the Commission's security regulations.* Specifically, the applicant's physical protection system and security organization are adequate to meet the design basis threat of radiological sabotage and provide high assurance that activities involving special nuclear material at Diablo Canyon will not be inimical to the common defense and security and will not constitute an unreasonable risk to the public health and safety.

*See 10 CFR §§ 73.1, 73.40, 73.55.

It is so ORDERED.

FOR THE APPEAL BOARD

**Barbara A. Tompkins
Secretary to the Appeal Board**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARDS

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson
Thomas S. Moore

In the Matters of

**PHILADELPHIA
ELECTRIC COMPANY, *et al.*
(Peach Bottom Atomic
Power Station, Units 2 and 3)**

**Docket No. 50-277
50-278**

**METROPOLITAN
EDISON COMPANY, *et al.*
(Three Mile Island
Nuclear Station, Unit No. 2)**

Docket No. 50-320

**PUBLIC SERVICE
ELECTRIC AND GAS COMPANY
(Hope Creek Generating
Station, Units 1 and 2)**

**Docket Nos. 50-654
50-355**

September 11, 1981

The Appeal Board orders intervenors in this consolidated proceeding, as condition precedent to a further evidentiary hearing on the environmental effects of radon releases associated with the uranium fuel cycle, to make a preliminary showing that a genuine issue of a material fact exists by the documented opinion of one or more qualified authorities to the effect that the incremental fuel cycle-related radon emissions on the amount found by the Appeal Board in ALAB-640, 13 NRC 487, will have a significant environmental effect in terms of human health.

MEMORANDUM AND ORDER

1. In ALAB-640, 13 NRC 487 (May 13, 1981), we determined the amount of radon gas (radon-222) which would be released to the atmosphere as a result of the mining and milling of the uranium needed to fuel each of the nuclear facilities involved in these consolidated proceedings. By a divided vote, however, we went on to withhold decision on whether, as held by the Licensing Board in the *Perkins* proceeding,¹ releases in approximately that amount would have an insignificant environmental (*i.e.*, health) effect and, as such, need not be factored into the cost/benefit balance for the facilities which is mandated by the National Environmental Policy Act.²

In the view of the majority,³ before that question could be reached by us, the intervenors in the present proceedings (who were not parties to the *Perkins* proceeding) had to be given an opportunity to "present and prove their case" that, contrary to the conclusion of the *Perkins* Licensing Board, the fuel cycle-related radon releases would have significant health effects. ALAB-640, 13 NRC at 543-545. The two dissenting members⁴ thought, however, that the intervenors had already been given that opportunity and had not availed themselves of it. *Id.* at 547-549.

Further, as the dissenting members saw it, the disclosures in the *Perkins* record (which has been incorporated in the record of these proceedings) fully supported the result reached by the Licensing Board in that case. In this connection, they pointed to the fact that (1) the fuel cycle-related radon emissions are "negligibly small compared to natural emissions";⁵ (2) the amount of natural radon found in the environment varies widely from one geographic area to another; (3) indoor concentrations of natural radon exceed outdoor concentrations by, on the average, a factor of 30 and themselves fluctuate over a substantial range; and (4) "[t]he incremental addition to the outdoor radon concentration due to a single typical nuclear plant" is less than 1/10,000 of that concentration. Taken together, these

¹ *Duke Power Co. (Perkins Nuclear Station, Units 1, 2, and 3)*, LBP-78-25, 8 NRC 87 (1978), *appeal pending*.

² The radon release rates determined in ALAB-640 did not differ significantly from those upon which the *Perkins* Licensing Board based its conclusion regarding environmental effect.

³ Messrs. Rosenthal, Salzman and Moore. Since the rendition of ALAB-640, Mr. Salzman has resigned from the Appeal Panel and has been replaced as a member of the *Hope Creek* Appeal Board by Mr. Rosenthal. The four Appeal Panel members participating in this order will consider and decide the health effects issue which still remains open.

⁴ Drs. Buck and Johnson.

⁵ "Natural emissions" refers to radon releases to the environment which have as their source such things as ordinary building materials and soil. These emissions produce "natural background radon".

considerations persuaded them that "any assignment of environmental impact to [that] incremental addition could only be characterized as remote and speculative" and, as such, "may properly be ignored in the assessment of the overall environmental impact of a nuclear power plant". *Id.* at 546-547.

2. No party sought Commission review of ALAB-640 and the Commission has now determined not to review that decision on its own initiative. Consequently, finality has attached to our determinations regarding the amount of the radon emissions attributable to the mining and milling of uranium fuel for the facilities at bar. This being so, the time has arrived to provide the intervenors with their opportunity to demonstrate, if they can, that radon emissions in that amount will produce a substantial enough incremental environmental effect both (1) to require consideration in the NEPA cost/benefit balance for each facility; and (2) to tip that balance against plant operation.

As the ALAB-640 majority took pains to note, 13 NRC at 545 fn. 96, a hearing on these questions is not inevitable. Whether one will be necessary wholly depends upon the ability of the intervenors to demonstrate the existence of a genuine issue of material fact respecting any of the issues they previously raised concerning the environmental significance of fuel cycle-related radon emissions. See *id.* at 543 fn. 92.

In the totality of circumstances, there is nothing unreasonable about requiring the intervenors thus to shoulder (as plainly contemplated by the ALAB-640 majority) the burden of going forward on the question of the need for a further hearing on environmental impact. Once again, the subject of health effects was thoroughly explored in the *Perkins* evidentiary hearing in the context of fuel cycle-related radon emissions not dissimilar in amount to those later determined by us in these proceedings. And the Licensing Board's conclusion in that case that the incremental radon contribution of the uranium fuel cycle would not have significant health effects was grounded upon the testimony of highly qualified expert witnesses. See LBP-78-25, *supra*, 8 NRC at 95-100.

One such witness was Dr. Leonard B. Hamilton, a physician who headed the Biomedical and Environmental Assessment Division at the Brookhaven National Laboratory. For over thirty years, Dr. Hamilton had been involved in the appraisal of radiation health risks. Prior to joining Brookhaven in 1964, he had spent 14 years on the staff of the Sloan-Kettering Institute for Cancer Research in New York City and had also served on the faculty of the Cornell University Medical College.⁶ Referring

⁶ For a fuller statement of the impressive qualifications possessed by Dr. Hamilton, see *Duke Power Co.* (*Perkins Nuclear Station, Units 1, 2, and 3*), Docket Nos. 50-488, 50-489, 50-490, fol. Tr. 2256.

to the testimony of other expert witnesses for the applicant and the staff, Dr. Hamilton had this to say: "As can be seen [from that] testimony, the additional Radon-222 from the mining and milling [phases] of the uranium fuel cycle makes an additional negligible contribution to annual natural background radiation *and consequently, a similarly negligible impact on the health effects associated with the fuel cycle*" (emphasis supplied)⁷

Not having been parties to *Perkins*, the intervenors now before us cannot be deemed bound by Dr. Hamilton's conclusions. (This is so even though Dr. Chauncey Kepford, the representative of the *Peach-Bottom - Three Mile Island* intervenors, was permitted to cross-examine him on behalf of the *Perkins* intervenor⁸). But in the absence of a concrete threshold showing that there is a difference in competent expert opinion on the health effects issue, there is wholly insufficient cause to require either the applicants in the instant proceedings or the staff to replot at yet another hearing the ground previously traversed by Dr. Hamilton and the other *Perkins* witnesses.

As a condition precedent to the holding of a further evidentiary hearing addressed to the environmental effects of the radon releases associated with the uranium fuel cycle, the intervenors therefore must make that showing. Although we obviously have to leave the precise ingredients of the showing to them, a word of caution is in order. The burden of demonstrating the existence of a genuine issue of material fact will not be satisfied by anything short of the documented opinion of one or more *qualified* authorities to the effect that the incremental fuel cycle-related radon emissions will have a significant environmental effect in terms of human health. Further, we will expect that any such opinion will explicitly take into account (1) the comparative relationship between the amount of those emissions (as found in ALAB-640) and of natural radon emissions; and (2) the fluctuations in natural emissions (indoor *vis a vis* outdoor as well as from one geographic area to another). More particularly, an explanation should be forthcoming respecting the basis upon which it is concluded by the expert (in disagreement with Dr. Hamilton and other *Perkins* witnesses) that a very small increment to natural background radon, falling well within the fluctuations in natural radon levels, might have significant health effects of its own.

⁷ Hamilton testimony, fol. *Perkins* Tr. 2266, at p. 2. This statement was quoted by the *Perkins* Licensing Board, 8 NRC at 98.

⁸ See *Perkins* Tr. 2269-2300.

The intervenors' preliminary showing is to be filed and served within 60 days of the date of this order. Upon its receipt, we will fix the time for responses from the other parties.

It is so ORDERED.

FOR THE APPEAL BOARD

**Barbara A. Tompkins
Secretary to the Appeal Board**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Dr. E. Leonard Cheatum
Gustave A. Linenberger, Jr.

In the Matter of

Docket No. 50-466-CP

**HOUSTON LIGHTING AND POWER
COMPANY**
**(Allens Creek Nuclear
Generating Station, Unit 1)**

September 1, 1981

Licensing Board grants several motions filed by the Applicant and by the NRC Staff for summary disposition of certain health and safety contentions, denies several other such motions, and grants, in part, a motion of the Staff for the summary disposition of an environmental contention.

RULES OF PRACTICE: SUMMARY DISPOSITION

A contention will not be summarily disposed of where the Licensing Board determines that there still exist controverted issues of material fact.

SECOND ORDER
Ruling Upon Motions for Summary Disposition

In an initial Order of November 13, 1980, we had ruled upon motions for summary disposition of certain environmental contentions. In the instant Order we rule upon a motion for summary disposition of an environmental contention (Cumings 9) filed by the NRC Staff and upon several motions for summary disposition filed by the Applicant, the Staff and by Intervenor TexPirg which address certain health and safety contentions.

Written direct testimonies upon those contentions which are not dismissed herein will be filed at a later date to be set by the Board.

McCorkle Contention 14

The fuel rods to be used are not safe because of clad failures and off gas activity caused by hydriding and the effects of fuel densification which increases power spikes and heat generation rate.

Applicant filed a Motion For Summary Disposition on August 4, 1980. Ms. McCorkle did not file an answer opposing the motion.

In support of its motion, Applicant appended the affidavit of Noel Shirley, a senior licensing engineer employed by the General Electric Company. In substance, Applicant asserts the following material facts as to which it contends there is no genuine issue to be heard:

1. Fuel hydriding is caused by moisture or other hydrogenous materials left inside the Zircaloy fuel rod during manufacture. (Shirley affid., pp. 1-2)
2. In order to prevent hydrogen contamination of the inside of the fuel rod, two major changes have been made in the manufacturing process during or since the early 1970's. These two changes consisted of installing a hot vacuum outgassing system to remove moisture from the fuel just prior to welding the end plug of the rod in place, and of installing a hydrogen getter in the form of zirconium alloy chips inside the fuel rod to preferentially combine with hydrogen present in the rod. (Shirley affid., p. 2)
3. No hydride induced failures have occurred in General Electric BWR fuel manufactured using the hydrogen getter and the outgassing techniques. (Shirley affid., pp. 2-3)
4. Knowledge of the causes of in-reactor fuel failures has led to quality control tests during manufacture which assure that the fuel is of such an initial density that further densification during irradiation does not affect the thermal-mechanical performance of the fuel. Further, conservative limits on the Linear Heat Generation Rate (LHGR) allowed in the reactor fuel assure that the actual LHGR will remain within design limits if maximum theoretically possible densification occurs. (Shirley affid., pp. 3-4)
5. No fuel cladding failures or collapses attributable to densification have ever occurred in BWR fuel. (Shirley affid., p. 5)

The motion is denied. In support of material facts 3 and 5, Applicant's affiant cited several references, the latest of which discussed experience

with BWR fuel through December, 1976. Absent current updating, there remain the outstanding issues of material fact as to whether to date no hydride induced failures have ever occurred in BWR fuel manufactured using the hydrogen getter and the outgassing techniques, and as to whether to date no cladding failures or collapses attributable to densification have ever occurred.

McCorkle Contention 17¹

The containment as designed will allow excessive leakage to bypass the filtration systems. The power company admits that 20 percent of the leakage would not even be filtered.

Applicant filed a Motion For Summary Disposition on August 4, 1980. Ms. McCorkle did not file an answer opposing the motion.

In support of the its motion, Applicant appended the joint affidavit of Guy Martin, Jr., the supervising radiological assessment engineer for ACNGS employed by Ebasco Services Incorporated, and of Walter Malec, the supervising mechanical nuclear engineer for ACNGS employed by Ebasco Services Incorporated. Applicant also appended Exhibits A and B, and a transcript portion of its deposition of Intervenor McCorkle. The statement of material facts as to which Applicant alleges that there is no litigable issue follows:

1. The Allens Creek containment design does not allow 20 percent of the containment leakage to bypass the filtration systems. (Jt. Affid., p. 7)
2. A complete list of all potential leakage paths through containment penetrations was compiled. (Exhibit A) From this list, six penetrations were identified that constitute potential unfiltered leakage paths. (Exhibit B)
3. Using the list of potential unfiltered leakage paths, the current best estimate of the maximum total unfiltered bypass leakage under LOCA accident conditions is 0.0195 percent per day of the containment volume. (Jt. Affid., p. 4) The containment will be designed in any event to limit leakage to 0.5 percent by weight of the containment atmosphere per day at calculated peak pressure. (Jt. Affid., p. 6)

¹ McCorkle Contention 17 consisted of two parts, the first of which is the subject of the instant motion for summary disposition. The second part related to possible self-ignition of charcoal filter adsorber material and was similar to TexPirg Additional Contention 36, as renumbered by the Board. The Order of May 23, 1980 consolidated these contentions.

4. Applicant will perform extensive pre-operational tests in accordance with 10 CFR Part 50, Appendix J, to assure that the containment will maintain its expected level of leak-tightness. (Jt. Affid., pp. 4-6)

Affiants state that the containment design will limit leakage to 0.5% by weight of the containment atmosphere per day at calculated peak pressure. They state "However, a value of 0.0195 percent/day of the containment volume is the present best estimate of the maximum total unfiltered bypass leakage based on preliminary LOCA dose calculations." Assuming that the containment atmosphere is uniformly mixed, we find no basis for a difference between percent by weight and percent by volume, provided that the various available leakage paths do not selectively fractionate the leaking gas mixture. We note that the 0.0195% unfiltered leakage represents approximately 40% of the 0.5% total leakage, or *twice* as much unfiltered leakage as Ms. McCorkle alleges. Thus, it appears that Applicant has established that the situation is worse than that claimed by Intervenor. Further, the above quotation of affiants appears to assert that the 0.0195% unfiltered leakage is an estimate based not on an estimate of hardware performance capability but upon what can be tolerated from a LOCA dose calculation and, presumably, upon the maximum allowable doses permitted by 10 CFR Part 100. In other words, it appears that affiants have backed into a permissible unfiltered leakage rate by starting with what the regulations will allow coupled with how much radioactivity a LOCA will deliver to the containment. This may be an acceptable way to proceed unless physical reality ultimately demonstrates that hardware performance is not good enough to accomplish it, a possibility not addressed in the affidavit. What affiants, as employees of Ebasco, in effect, do is commit Applicant to meet the testing requirements of 10 CFR Part 50, Appendix J, which they detail, and also commit Applicant not to exceed the limits of 10 CFR Part 100. At transcript page 28 of the undated deposition, Intervenor McCorkle states that she would be satisfied if Applicant meets NRC guidelines on leakage. Whether the statements of affiants constitute a bonafide commitment of Applicant is a question we do not address. There is sufficient uncertainty from the information before us about the amount of leakage that can escape unfiltered to cause us to inquire further. Applicant's motion is denied, and we will hear evidence upon McCorkle Contention 17. Applicant and Staff shall include in their evidentiary presentations those measures that they conclude will assure that containment leakage is appropriately controlled.

TexPirg Contention A-6

Petitioner contends that the drywell planned for Allens Creek Unit 1 will not withstand the pressure generated in a LOCA. The water within the weir wall will not clear the first row of vents before the differential pressure exceeds 28 psi. This is due to failure to properly account for the Mannings roughness factor within the weir wall and the vent pipe. By delaying the time to clear the first row of vents by only 0.5 second the drywell will be damaged allowing the escape of high pressure steam into the containment without being condensed. This will lead to the containment vessel pressure exceeding 15 psig so that it will crack allowing the escape of radioactive gases above the limits allowed by 10 CFR 100.

On August 8, 1980, the Staff filed a motion for summary disposition; on October 2, 1980, TexPirg filed a response in opposition to said motion. Staff's motion is accompanied by a portion of the deposition of TexPirg's expert witness, Clarence Johnson, and by the affidavit of a technical member of the Staff, M. B. Fields.

Staff's motion sets forth a concise statement of the material facts as to which it contends there is no genuine issue to be heard. Affiant Fields' professional qualifications appear to establish that he is at least conversant with the problems raised by the contention but they do not help us to assess the analytical depth he may or may not bring to bear. His affidavit, supported by citations and figures from references, purports to (but fails to) refute all aspects of the contention. Mr. Johnson's deposition showed a definite lack of familiarity with the subject.

TexPirg's opposing response, addressing deficiencies in the Staff's analysis, is too sketchily drawn to be assessed. In short, we would need more information than is before us in order to be persuaded by either pleading. Staff's motion for summary disposition is denied and we will hear the evidence upon TexPirg's Contention A-6.

In order to assist the parties in their preparation of testimony, we offer the following comments:

The Mark III containment is characterized as being designed to withstand an internal pressure of 15 psig. The Board wishes to understand the margin of safety (expressed as an incremental pressure in excess of the 15 psig) between design pressure and that pressure at which the yield strength will be reached for the weakest components. If containment leakage is not expected to occur when an overpressure corresponding to yield strength is attained, then it is important to document at what excess pressure beyond yield strength containment leakage will begin to occur and

at what excess pressure significant containment failure will occur.

The Board wishes to understand the basis for confidence in the conclusion that data from the General Electric Company's test in their Pressure Suppression Test Facility are applicable to the ACNGS. Figures A-12 and A-13 attached to Fields' affidavit offer no indication of reliability (uncertainty, accuracy or error band) associated with the experimental results.

Fields' affidavit refers to NEDO-10320, and represents that Figure 4.4 therefrom is attached. The Board's copy of this affidavit provides Figure 4.1 from NEDO-10320 and Figure 4.2 from an unidentified source, there being no Figure 4.4. Please explain, and again address uncertainty, accuracy or error band to be associated therewith.

Intervenor's response raises questions regarding, for example, smooth vent tubes versus rough concrete walls, drywell corner weakness, right-angle turns in fluid flow paths, and the necessity to clear two rather than one set of vents. Without more information than is currently before us, the Board cannot assess the importance of these considerations.

TexPirg Contention 10

Applicant has not adequately demonstrated compliance with 10 CFR Part 50, App. A, criterion 31, with regard to intergranular stress corrosion and cracking. Excessive oxygen levels, superposed loads, and residual stresses may result in ultimate failure of piping, despite altered metal content for the ACNGS design, the NRC investigation of stress corrosion, and cracking problems at similar BWR units was released in December 1975.

On August 4, 1980, Applicant filed a motion for summary disposition of this contention. On October 2, 1980, TexPirg filed a response in opposition to the motion.

Applicant's motion (accompanied by the affidavits of three affiants²) lists the following material facts as to which it alleges there are no litigable issues:

² Dr. Gerald M. Gordon, metallurgical engineer, the General Electric Company; Louis A. Gunther, metallurgical engineer, Ebasco Services Incorporated; Walter F. Malec, mechanical-nuclear engineer, Ebasco Services Incorporated. Professional qualifications of these affiants were provided.

1. Intergranular stress corrosion cracking [IGSCC] has occurred in light water reactors where "sensitized" stainless steels with a carbon content of between 0.05 to 0.08% were exposed to a particular combination of stress and dissolved oxygen in high temperature waters. This phenomenon has occurred in approximately 0.6% of the stainless steel pipe weld heat-affected zones within the RCPB of operating BWRs. (Gordon Affid., p. 3)
2. Two of the four lines where the bulk of the identified instances of IGSCC has occurred, the recirculation bypass line and the control rod drive hydraulic return line, have been eliminated from the ACNGS design. (Gordon Affid., p. 3)
3. The two remaining lines where the bulk of IGSCC has been identified and virtually all other RCPB lines within both General Electric's scope of supply and Ebasco Services Incorporated's design responsibility are comprised of either plain carbon steel, Type 316L stainless steel, or 316 nuclear grade stainless steel. (Gordon Affid., p. 4; Gunther and Malec Affid., p. 2)
4. Feedwater spargers, collet cylinder tubes and recirculation pump housings at ACNGS will be made of low carbon stainless steel and the control rod drive housings will be fabricated from 316L stainless steel. (Gordon Affid., p. 4)
5. This low carbon content stainless steel and plain carbon steel utilized in the ACNGS is the type which does not experience intergranular stress corrosion cracking. The specific material utilized is the result of investigation and an extensive test program. The NRC has reviewed the substitution of IGSCC resistant materials at ACNGS and accepts this design measure as a resolution of the generic IGSCC problem, Generic Task No. A-42. (Gordon Affid. pp. 4-5; Gunther and Malec Affid., p. 2)
6. The NRC Staff has also approved the use of these materials as meeting the requirements of Regulatory Guide 1.44, which assures compliance with 10 CFR 50, Appendix A, criterion 31. (Gordon Affid., pp. 5-6)

Applicant's motion additionally appends a portion of its deposition of TexPirg's expert witness Clarence Johnson. The Board has satisfied itself that the professional qualifications of Applicant's three affiants are appropriate to the testimony offered, and that said testimony addresses the five alleged facts proffered by Applicant. The deposition of TexPirg's witness Johnson, whose metallurgical expertise has not been claimed or established, offers nothing that refutes Applicant's alleged facts.

In its opposing response, TexPirg's counsel argues³ in rebuttal to the Applicant's alleged facts, and in summary makes the following largely unsupported claims:

If the IGSCC problem had been solved, it would no longer be considered by the Staff as an unresolved generic safety issue, but it still is (Category A, Task A-42);

Use of stainless steel alloys having significantly reduced susceptibility to stress corrosion mitigates but does not eliminate the possibility of IGSCC⁴ and is not good enough, even if Reg. Guide 1.44 conditions are met; and

The nuclear steam supply vendor's test program (to demonstrate the acceptable resistance of RCPB component alloys to IGSCC) was of such short duration (4 years) compared with the operational life of a power plant as to make the validity of the results questionable.

In essence, while not contesting that improved alloys will be used in the ACNGS, TexPirg does question whether this constitutes an adequate remedy.

Applicant's motion fails to address the point raised by the contention concerning the impact of excessive oxygen levels and superposed loads (see footnote 4, *supra*) upon improved alloys. Applicant's affiant Gordon cites NUREG-0531⁵ as evidence of Staff's acceptance of the ACNGS proposed improved alloys as a solution to the IGSCC problem. However, we have reviewed a later document, NUREG-0313 Rev. 1, July 1980,⁶ subtitled "Resolution of Generic Technical Activity A-42," in which Staff's revised acceptance position is described, and in which Staff sets forth requirements

³ We note that the form and content of TexPirg's response do not satisfy the requirements of 10 CFR Section 2.749.

⁴ Here TexPirg fails to drive home an element of its contention dealing with excessive oxygen levels and "superposed loads", which phrase we intuit to mean excess stress occasioned by temperature or pressure excursions.

⁵ "Investigation and Evaluation of Stress-Corrosion Cracking in Piping of Light Water Reactor Plants" (February 1979).

⁶ "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

upon applicants regarding acceptable methods to minimize crack susceptibility, material selection, testing and processing guidelines.⁷ Applicant neither addresses these matters nor the matter of whether the Staff has imposed the requirements of NUREG-0313, Rev. 1, upon Applicant. Affiants Gunther and Malec note that the PSAR, Section 5.2.7, describes a leak detection system as a backup for detecting unanticipated leakage from the RCPB. Although these affiants are respectively a metallurgist and a mechanical-nuclear engineer, we have trouble accepting their undocumented conclusion that:

“Since all IGSCC failures produce easily detectable leakage well before the presence of rapidly propagating cracks, this detection system provides the final conservative assurance that the safety of ACNGS will not be threatened.”⁸

Crack propagation is a sufficiently complex phenomenon that this undocumented opinion, albeit expert, does not suffice, especially if there is an opportunity for “superposed loads” to be imposed on alloys that have been exposed to “excessive oxygen levels”, as claimed by the contention.

Despite the deficiency in form and content, TexPirg’s response raises material questions involving the adequacy of the duration of the alloy test program cited by Applicant and the adequacy of Reg. Guide 1.44 in the face of NUREG-0313, Rev. 1.

We conclude that there are genuine issues of material fact remaining to be litigated and thus that Contention 10 shall be addressed during the health and safety phases of the evidentiary hearing. Accordingly, Applicant’s motion is denied. The parties are requested to include in their direct testimony evidence that addresses the questions and deficiencies noted by this Board in the foregoing discussion.

TexPirg Contention 11

Applicant has not adequately assessed the effects of flow-induced vibration on jet pumps, spargers, fuel pins, core instrumentation, and fuel rods. Feedwater spargers failures occurred at five BWR units from 1975 to 1976, all due apparently to flow-induced vibration. Petitioner asks that a license be denied until an adequate assessment is presented by the Applicant.

On August 4, 1980, Applicant filed a motion for summary disposition directed to both this contention and a related contention of Intervenor Doherty (Contention 31). We address Doherty Contention 31 separately. The motion provides a portion of the deposition of TexPirg’s expert witness, Clarence Johnson, who exhibited quite limited familiarity with the subject matter of the contention. The motion includes the affidavit of

⁷See Sections II and III of NUREG-0313, Rev. 1.

⁸Affidavit of Gunther and Malec, p. 2, accompanying Applicant’s Motion.

Martin R. Torres, a mechanical engineer with the General Electric Company with responsibility for flow-induced vibration problems associated with all G.E. plants. On October 2, 1980, counsel for TexPirg filed a response in opposition to the motion.

Applicant's motion presents the following facts as to which it contends there are no genuine litigable issues to be heard:

1. Flow-induced vibration of reactor components including jet pumps, spargers, fuel pins, fuel rods, in-core instrumentation and low range power monitors (LPRM's) has been studied extensively by General Electric. Information from the vibration tests and analyses and from experience at other plants has been used to improve the ACNGS design. (Affid., p. 2) For example, vibration of LPRM tubes at the Duane Arnold and Cooper nuclear plants were traced to bypass flow holes in the design of those plants. Bypass flow holes have been eliminated in the design of ACNGS. (Affid., pp. 6-7) Other design improvements of components will make them less likely to be damaged as a result of flow-induced vibration. (Affid., p. 7)
2. The potential for vibration of ACNGS reactor internals will be further specifically assessed and remedied, if necessary, through the following sets of analyses and tests:
 - (a) A dynamic system analysis. This analysis, described in §3.9.1.3 of GESSAR 238, analyzed flow induced vibration during normal operations, and is used in designing and testing of components, and for establishing pre-operational testing criteria. (Affid., p. 2)
 - (b) Flow tests, forced oscillation tests, and other physical tests of reactor internal components. These tests are used to verify design and are independent of the NRC testing requirements. (Affid., pp. 3-4)
 - (c) Prototype plant pre-operational and operational tests. Extensive vibration testing on the prototype plant (now designated Perry Unit 1) in accordance with Regulatory Guide 1.20 will be made to detect evidence of undesirable effects due to flow-induced vibration. (Affid., p 4)
 - (d) Pre-operational testing at ACNGS. Testing of reactor internals of ACNGS in accordance with the provisions of Regulatory Guide 1.20. (Affid., p. 5)
3. The vibration testing requirement of Regulatory Guide 1.20 for prototype 238 BWR-6 plants is expected to occur prior to operation of ACNGS. If another plant is the prototype plant, ACNGS will show compliance with Regulatory Guide 1.20

through pre-operational, nonprototype confirmatory tests. (Affid., p. 5)

4. In the past, monitoring of reactor performance instrumentation has revealed vibration problems long before they are of concern. (Affid., p. 6)
5. ACNGS will have a loose parts monitoring system to detect any loose parts in the reactor. (Affid., p. 7)
6. In the past, neither a loss of plant safety nor the inability to safely shut down the plant has ever occurred because of flow-induced vibration. (Affid., p. 7)

Without addressing the details, we note in summary that affiant Torres discusses the test programs and design modifications that have been undertaken to mitigate or eliminate vibration problems. Additional tests to be performed upon a prototype predecessor to the ACNGS and upon the ACNGS itself are mentioned along with a commitment that the requirements of Regulatory Guide 1.20 will be met. Finally, apparently speaking from personal knowledge, the affiant states (without support) that flow-induced vibration has never resulted in a loss of plant safety nor an inability to safely shut down a plant. (Torres Affid., p. 7)

In its opposing response, TexPirg makes the following arguments:

- No results from past tests have been given;
- A promise of future tests is not relevant; and
- The historical lack of safety problems due to flow-induced vibrations is unsubstantiated and is not a basis for confidence.

We do not weigh these arguments, for the language of the contention is controlling: irrespective of how comprehensive a program has been pursued to date, until or unless we are assured that these tests and analyses will be made, we cannot conclude that adequate assessments of the matters before us will be made. Accordingly, Applicant's motion for summary disposition is denied. We request that a cognizant Staff witness advise that the aforementioned tests and analyses will be performed.

TexPirg Contention A-38

Petitioner contends the ACNGS control rod drive system is a hazard to public (and its members) safety because General Electric designed control rod systems have had defective float switches which failed to function in their SCRAM discharge volume tanks (SDVT). These switches activate the outflow of these tanks. If they fail to float, the SDVT will not empty. In the event of SCRAM, while the SDVT is filled with water, water from the hydraulic CRD system cannot escape and permit the control rod to be driven into the core as designed, because the rod's progress is slowed. From

1972 to 1974 this failure was noted at *Hatch I, Peach Bottom III, Duane Arnold Energy Center and Fermi 2.*

On August 4, 1980, Applicant submitted a motion for summary disposition of this contention. On October 2, 1980, TexPirg filed a response opposing this motion.

Applicant's motion relied upon the affidavit of J. D. Heidt, a mechanical engineer with the General Electric Company, whose professional background includes experience with electromechanical equipment. Applicant listed the following material facts as to which it asserts there are no genuine issues to be tried:

1. The SCRAM discharge instrument volume (SDIV) is designed to receive the water displaced above a piston connected to the control rod at the time of a SCRAM. The venting of this water to the SDIV allows the rapid insertion of the control rods. If the SDIV is not drained at the time of a SCRAM, the control rods cannot be fully inserted. (Affid., pp. 1-2)
2. Problems were encountered in designs which used a float-type switch to indicate that the SDIV was drained. Incidents occurred where the float-type switch would sink indicating that the SDIV was drained when in fact it was not. The ACNGS design will not incorporate float-type level switches in the SDIV. (Affid., p. 5)
3. The ACNGS design will use a differential pressure level transmitter system which eliminates the possibility that the system will not perform its function because of a defective float. (Affid., p. 5)

Affiant Heidt described the ACNGS control rod drive system, the type of scram float system that had caused problems alluded to in the contention, and the modifications (eliminating the use of float level switches) to the Applicant's system that will eliminate the problems cited by TexPirg. A solid state differential pressure level transmitter system is said to have been chosen by the Applicant to effect this improvement. Its method of operation is briefly described, with the aid of an attached schematic drawing. However, no test information or operating experience is offered. Since the affidavit lacks references and citations, we can only assume that Mr. Heidt speaks from personal expert knowledge of this subsystem.

Applicant's motion also includes a portion of its deposition of TexPirg's expert witness, Clarence Johnson. Mr. Johnson implies that if the cause of float level switch malfunctions were eliminated, TexPirg's concerns would be alleviated, provided there were adequate test and operating experience to establish reliability. (Deposition of Clarence Lee Johnson, pp. 57-59, undated.)

TexPirg's opposing response presents an argumentative rebuttal to Applicant's motion. It asserts that functionally defective float level switches are not the only basis for its contention, an assertion we must dismiss in the face of the explicit wording of the contention. TexPirg further asserts that, since the earlier type of systems using float switches had been approved by G.E. and the Staff and they still failed, there is no basis, as yet, for believing that the improved version will be reliable. While this is a relevant and possibly material observation, it too is beyond the scope of TexPirg's contention.

We conclude that Applicant's list of material facts as to which there is no litigable issue is adequately supported by its affiant. Applicant's motion for summary disposition is granted and TexPirg's Contention A-38 is dismissed. However, the Board requests that the Applicant and Staff address the following questions during the health and safety portion of the evidentiary hearings:

What environmental qualification testing has been or will be conducted on the proposed solid state differential pressure level transmitter system, with what results, and on what schedule?

Will reliability and operational test information be required before final acceptance of this design departure from earlier systems? What will be the nature and scheduling of the testimony?

TexPirg Contention A-40

TexPirg contends that the Applicant monitoring of in containment building events during LOCA or similar events is not adequate to detect immediately the occurrences of hydrogen explosions. That the recent *Three Mile Island* incident shows that current approved containment building monitoring apparatus did not bring such an event to the attention of operators immediately, and that therefore the strong possibility existed that actions which would prevent a second hydrogen explosion were not taken. There is danger that hydrogen explosions will endanger TexPirg members because the containment building during a LOCA is likely to contain radioactive gases which would be released from the building damaged even lightly by the explosion and in excess of 40 CFR 190 or 10 CFR 20.

On August 8, 1980, the NRC Staff submitted a motion for summary disposition; on October 2, 1980, TexPirg filed an opposing response.

Staff's motion included the affidavit of one of its technical members, M. B. Fields, whose professional qualifications are such that he should be familiar with the hydrogen monitoring and recombination equipment proposed for the ACNGS. However, neither his statement of qualifications

nor his affidavit indicate an in-depth understanding of how these systems should perform. Citing the PSAR, affiant highlights the design features of the ACNGS monitoring system and its advantages compared with the TMI-2 system. He establishes that the design philosophy is that of preventing the occurrence of a flammable or of an explosive concentration of hydrogen, rather than providing equipment that can withstand an explosion and subsequently continue to function. Systems redundancy (for detection and recombination), an alarm system and a backup hydrogen purge system are mentioned, with little or no details as to functional characteristics.

TexPirg's response merely consists of argumentation — it is devoid of references, citations, and affidavits. Despite the failings of its response, it asserts that Staff's motion is too lacking in specifics to be convincing. A particular concern of TexPirg is that Applicant's systems must be actuated from the control room after an accident, rather than being automatically actuated. Even absent this response from Intervenor, we are unconvinced by Staff's motion that the ACNGS will have adequate hydrogen monitoring and control systems. Staff's motion for summary disposition is denied. Accordingly, TexPirg's Contention A-40 will be litigated.

In order to offer guidance in the preparation of direct testimony, we set forth the following minimal list of topics to be addressed:

Test results supporting the adequacy of the type and size of thermal recombiners to be used;

Effects of poisoned recombiner surfaces and incomplete convective circulation in reducing recombiner effectiveness;

Sufficient recombiner dynamic analysis to demonstrate that 3% concentration of hydrogen is a conservative alarm set-point;

Relationship - functional and geometrical - between alarm sensor and the eight monitoring samplers;

Ability to periodically test the operability of the monitoring, alarm and recombiner systems; and,

Nature of the backup containment hydrogen purging system that may be required to function at a time when the containment atmosphere is radioactive.

TexPirg Contention A-50

TexPirg contends the ACNGS is a hazard to its members health and safety interests, because its radioactive emissions may confuse electronic guidance systems in airplanes in the general vicinity. A B-52 military

plane crashed within two miles of a nuclear plant near Charlevoix, Michigan in January, 1971 (its cause was never released) and a light plane crashed in fog on August 25, 1972 at the Millstone Power Station. We have previously contended (TexPirg #6, accepted Feb. 1979) that airplane traffic will increase in the ACNGS area, and seek to add testimony on the guidance system "latching" phenomenon and the danger it imposes on public safety.

The following five submissions have been filed:

Applicant's Motion for Summary Disposition of TexPirg Additional Contention 50, August 4, 1980;

TexPirg's Motion for Summary Disposition, August 6, 1980;

NRC Staff Response In Opposition to TexPirg Motion for Summary Disposition of Additional Contention 50 and in Support of Applicant's Motion for Summary Disposition of TexPirg Additional Contention 50, October 2, 1980;⁹

TexPirg's Response to Motions for Summary Disposition, October 2, 1980;¹⁰ and,

Applicant's Response to TexPirg's Motion for Summary Disposition and Applicant's Cross-Motion for Summary Disposition of TexPirg Additional Contention 50 ("Latching"), October 2, 1980.

Applicant's motion lists the following five material facts as to which it alleges there is no genuine issue to be heard:

1. No aircraft is known to have crashed after passing near an operating nuclear power plant as a documented result of exposure to airborne radiation from the plant, which produced ions that purportedly "latched" onto the aircraft's guidance circuits and interfered with their proper functioning.
2. The scientific literature, including NRC publications, contains no support for the existence of the phenomenon of air crashes due to this so-called "latching".

⁹ Noting that 10 CFR 2.749(a) had been amended, our Order of July 28, 1981, notified TexPirg that it should advise by August 4, 1981 whether or not it wished to respond to the Staff's supporting response, and that, if it decided to file said response which should address only those new facts and arguments presented in the Staff's supporting response that had not been presented in Applicant's motion, it must do so by no later than August 12, 1981. The Board heard nothing from TexPirg.

¹⁰ In this response, TexPirg requested that its Motion of August 6, 1980 be considered as part of this response.

3. Natural sources of ionization in the atmosphere are many times greater than the permitted emissions from ACNGS. Aircraft regularly fly in the presence of the resultant natural atmospheric ion concentrations without failure or degradation of the guidance circuitry.
4. The already low emissions from ACNGS will be dispersed by distance and radionuclides will decay with time. The ionizing effect of these emissions at flight altitudes will be negligible. Furthermore, aircraft exposure to these emissions will be quite brief.
5. Aircraft flying near ACNGS will not suffer failure or degradation of guidance system circuits due to the so-called "latching" of ions produced by airborne radiological emissions from ACNGS.

Applicant's motion appends an affidavit of its Manager, Nuclear Department, Dr. J. R. Sumpter. The formal training and professional experience of this affiant do not establish to our satisfaction his expertise in matters such as aircraft electronic guidance systems and the interaction of radiation with solid state electronic circuitry. The affidavit is largely conclusional and does not dispositively support Applicant's five material facts as to which Applicant alleges that there are no litigable issues. In Applicant's response and cross-motion of October 2, 1980, by affidavit, the same affiant presents argumentative and conclusional replies to TexPirg's motion for summary disposition but does not advance Applicant's cause with respect to its list of material facts.

TexPirg's motion is unsupported by any affidavit and consists solely of a list of eight items characterized as material facts, a reading of which raises a question as to whether TexPirg seeks to establish these alleged facts as matters as to which there are litigable issues, or seeks to establish certain facts that would obviate the need for litigation. In its response of October 2, 1980, (which we consider, as requested by TexPirg, in conjunction with its motion), TexPirg seeks to rebut Applicant's list of alleged facts through argumentative, conclusional and very sparingly documented statements. Intervenor has failed to provide us with well supported reasons why its contention should or should not be litigated.

Staff's response, supported by an affidavit, sets forth the following nine material facts as to which there is no litigable issue:

1. A pulse dose rate of 10^5 rads/sec. is required to adversely affect semiconductor devices.
2. A total dose rate of 10^6 rads is required to produce changes in the operation of these components.

3. A maximum plume radiation level during normal plant operation at Big Rock Point nuclear reactor (the reactor referenced by TexPirg) is 9 to 11×10^{-6} r/hour.
4. Aircraft are designed to operate at cosmic radiation levels of 60 to 600×10^{-6} r/hour.
5. Aircraft are designed to operate at radiation levels approximately 3 to 30 times greater than those levels experienced during normal reactor operation.
6. The radiation field of a normally operating reactor is estimated to be about a factor of 10^{13} times less than the dose rates considered to produce electronic equipment malfunction.
7. If it is assumed that the entire end-of-life inventory of gaseous fission products of a reactor is dispersed after an accident, the maximum hypothetical radiation dose rate (pulse) of an aircraft entering the radioactive cloud is 0.69 r/sec. which is a factor of 140,000 below the dose rate required to cause electronic equipment malfunction.
8. The maximum total dose received by an aircraft flying through the radioactive cloud would be approximately 3.1 rads. This is a factor of 3.2×10^5 below the total dose required to produce slight malfunctions in electronic components.
9. Aircraft flying near ACNGS will not suffer failure or degradation of guidance system circuits due to the so-called "latching" of ions produced by airborne radiological emissions from ACNGS.

The Staff's affidavit was executed by three of its technical personnel¹¹ whose professional qualifications satisfy us as to their competency concerning nuclear plant emissions and interactions of radiation with solid state electronic components. Of commensurate importance, their affidavit establishes that the magnitude of all aspects of the ACNGS radioactivity source term, including that arising from a severe reactor accident, is smaller by orders of magnitude than the amount of radiation required to adversely alter the performance of solid state electronic components of the type employed in aircraft guidance systems.

Obviously, as our discussion indicates, *supra*, Applicant's motion, standing alone, would not be dispositive. However, because the Staff's response in support of Applicant's motion for summary disposition demonstrates that there is no genuine issue of disputed material fact, we grant Applicant's motion for summary disposition as supported by the Staff's response, deny TexPirg's motion for summary disposition, and dismiss the Contention.

¹¹C. M. Ferrell, J. B. J. Read and A. A. Sinisgalli.

TexPirg Contention A-31

The PID did not thoroughly review, nor has the Applicant adequately shown, that HL&P is technically qualified to construct ACNGS. The following forms a basis for concluding that the Applicant is not technically qualified to design and construct the proposed facility:

- a. The Applicant has never designed an operating nuclear power plant with a record of safe operation;
- b. In 1978, an internal study by the Applicant stated that HL&P had underestimated the amount of steel required for HL&P's South Texas Project by 122%, concrete by 63%, rebar by 125%, piping by 88%, wire and cables by 100%, terminations by 71%, cable trays by 116%, and conduit by 49%, at the time of application to build the South Texas Project in 1973. The report concluded that this underestimation was partially due to "development from the conceptual stage" which had occurred since the construction license proceedings there. This may indicate technical deficiencies in the Applicant's power plant construction planning;
- c. NRC inspections indicate that the Applicant deviated in at least three instances from the PSAR submitted for its South Texas Project, all of which related to quality assurance, and this raises questions regarding the Applicant's ability to meet commitments in its ACNGS PSAR;
- d. HL&P has reported to the NRC that it failed to meet a commitment that a gantry crane at the South Texas Project meet tornado stress levels due to providing inadequate bid specifications to contractors, and this directly relates to the technical performance of the Applicant in this docket;
- e. In a 1977 NRC inspection report at HL&P's South Texas Project (Rpt. #50-498-08), HL&P was informed six of the ten quality control inspectors stated that they had experienced harassment (including an individual report of a death threat), and despite this notice, at least four other instances of quality control inspector-reported harassment were noted in later NRC inspections; and an August 22, 1978 NRC report states that QC inspectors at South Texas Project agreed "in majority" that they were not receiving adequate technical assistance from Project Quality Assurance Licensee personnel;

- f. On Sept. 15, 1978, the NRC reported an investigation of an incident in which a quality control inspector alleged that HL&P's contractor at the South Texas Project fired him for strict inspection behavior, while the contractor's employee alleged a conversation with the quality control inspector in which the inspector allegedly solicited a bribe and supposedly stated that HL&P would "stay out" of any quality control let-downs; and though intervenor does not know what in fact occurred in this incident, the matter is sufficiently serious to form the basis for the consideration of this contention in this docket;
- g. HL&P is the Project Manager of South Texas Project and is ultimately responsible to the NRC for the 24 items of non-compliance reported in inspections there so far, and for the numerous construction problems such as building the mechanical auxiliary building one foot too narrow and installing under-strength bolts, and that such performance as project manager there raises questions as to the technical qualifications of Applicant.

Because of the factors stated above, Intervenor contends that Applicant should be required to show that technical capabilities have been upgraded such that the problems encountered at its other nuclear project will not occur at ACNGS, with a finding that Applicant is not technically qualified if that is not shown.

On October 8, 1980, TexPirg filed a motion for summary disposition of its Contention A-31 (consolidated with Doggett Contention 3). This motion was opposed by Applicant and Staff in responses filed respectively on October 22, 1980 and November 3, 1980.

TexPirg's motion argues as follows:

1. The Applicant has insufficient nuclear trained scientists in its employment to either do the necessary work or to see that the work done by its contracted consultants is correct. Only 6 Ph D.
2. For over three years the NRC has shown the Applicant deficiencies in its quality control and construction program at the South Texas plant. Still the NRC was forced to fine the applicant \$100,000 (max. allowed under NRC regulations) for not correcting these problems. Either the Applicant did not try to correct the problems or it just did not have the technical qualifications to do so — in neither case should they be allowed to build another nuclear plant until conclusive proof that the

problems have been solved (promises alone have not been enough).

3. This same applicant misestimated the amounts of steel, rebar, concrete, wires, etc. by over 100% in some cases that it would need in its South Texas Plant. When asked to show what NRC regulations were changed to cause such gross errors, the applicant would not or could not specify them. There is no evidence to show that the applicant is not now making the same type errors for Allens Creek. In fact the large continuing intervenor interest in Allens Creek would tend to make such overruns even larger because of their noticing of construction errors, and proposing rule changes that would increase the protection given to the public health and safety.
4. No other utility has such a poor record with the NRC for construction problems, fines, items of noncompliance, etc.

The evidence to support the above facts are already in the record of this proceeding and in the NRC files.”

As is readily apparent, TexPirg's motion consists of barren, conclusional, and unsupported allegations; it falls far short of meeting the requirements for a motion for summary disposition. Nor does Intervenor's final assertion that supporting evidence can be found in the record and files of this proceeding overcome its grievous disregard for the requirements of 10 CFR §2.749. TexPirg's Motion for Summary Disposition of its Contention A-31 is denied, and we will hear testimony on this Contention.

Doherty Contention 5

In the event of blowdown, loss of coolant, reactivity initiated or other accident, the location of the Control Rod Drive Mechanism Hydraulic Unit as planned in ACNGS, as well as the Traversing In-Core Probe makes these two systems vulnerable to suppression pool uplift. There are no Mark-III containment systems in operation today, and no full-scale tests have been done to guard against this possibility. Petitioners contend plant is endangered in the event such accidents destroy these systems when they are needed.

The Applicant filed a Motion for Summary Disposition on August 4, 1980. Mr. Doherty's response in opposition on November 15, 1980, included eight exhibits and was supplemented by a filing on January 19, 1981, which allegedly quoted proprietary information from the G.E. Reed Report. On January 28, 1981, Applicant responded to this supplemental response, and urged that it be rejected. Attachments to Applicant's motion included the following:

1. A Statement of Material Facts as to Which There is no Genuine Issue;
2. Pages 175 through 193 of an undated portion of Applicant's deposition of Mr. Doherty;
3. The affidavit and professional qualifications of P. P. Stancavage, a nuclear and mechanical engineer employed by Applicant's NSSS vendor, containing one attached figure; and
4. The joint affidavit and professional qualifications of Messrs. R. A. Sullivan and R. C. Cheng, civil engineers employed by Applicant's architect-engineer.

In substance, Applicant attempts to establish, via the statements of its affiants based upon the results of numerous vendor tests, that the nature and behavior of the pool-swell phenomenon is such that the intended location, design and method of mounting of control rod drive hydraulic control units (HCU's) will obviate their being damaged, and that there is no safety significance to the loss of the traveling in-core probe (TIP). It appears that vibratory response loads on the HCU's, as of July, 1980 (the date of the affidavits), had yet to be calculated by Applicant's architect-engineer and verified as being acceptable by Applicant's NSSS vendor. (Affiant Stancavage; Affiants Sullivan and Cheng)

Intervenor's initial response is defective in that it does not set forth a concise statement of material facts as to which it is contended that there exists a genuine issue to be litigated. The bases for Intervenor's concerns, however, are explained via the numerous exhibits attached, and provide cause for inquiring further. We find that his supplemental response is argumentative and does not advance his cause.

Absent final results of the vibrational effects on the HCU's, and since Applicant's attached affidavits are conclusional, we conclude that Applicant has not adequately supported its list of issues as to which there are no remaining material facts to be heard. Accordingly, Applicant's motion for summary disposition of Doherty's Contention 5 is denied. We advise the parties that, in hearing testimony on this contention, we will be interested additionally in evidence that establishes whether a reasonably simultaneous actuation of safety relief valves with the pool-swell phenomenon will exaggerate the impacts of that phenomenon.

Doherty Contention 11

Applicant has not provided adequate design characteristics and operating safeguards to protect the integrity of stored spent fuel during unattended operation of the spent fuel pool. In addition, the Final Environmental Statement is inadequate in failing to consider the consequences of a spent

fuel pool design basis accident.¹²

The Staff filed a Motion for Summary Disposition on August 8, 1980. Mr. Doherty filed a response on November 15, 1980.¹³

At mid-page 6 of his response Mr. Doherty abandoned the issue raised in the first sentence of the consolidated contention, stating that he did not wish to pursue the attended versus the unattended operation issue. Apparently Mr. Doherty was convinced by the statement of the Staff's affiant that "continuous attendance at the spent fuel pool is *not* required to monitor and maintain satisfactory pool water level and temperature (1) because of the monitoring and control capability for the spent fuel storage facility provided in the control room and (2) because operator action is not normally required to maintain facility operations". (Wermiel Affid., p. 2) Accordingly, the instant motion is granted in part with respect to the contention set forth in the first sentence of the consolidated contention, and that part of the contention is dismissed.

With respect to the contention set forth in the second sentence of the consolidated contention, the Staff's affiant deposed that the "consequences of the spent fuel pool design basis accident is considered in the Final Supplement to the Final Environmental Statement and in the Staff's Safety Evaluation Report". (Wermiel affid., p. 7) We have reviewed these documents (FSFES at S.7-2 and the SER at 15-7) and indeed they do consider the consequences of a spent fuel handling accident wherein a spent fuel assembly is dropped on a fuel rack. However, as Mr. Doherty points out, neither the SER nor the FSFES describe the consequences of a spent fuel assembly drop onto the spent fuel pool floor. Accordingly, the instant motion is denied in part with respect to the second sentence of the consolidated contention, and we will hear testimony on the consequences of

¹² Our Order of May 23, 1980, in granting Applicant's Motion To Confirm Agreements On Consolidation And To Consolidate Certain Contentions, consolidated Doherty Contention 11 (the first sentence of the consolidated contention) with Framsons' Contention 1 (the second sentence of the consolidated contention). Although our subsequent Order of July 29, 1980 granted the Framsons' motions to withdraw as an intervening party and dismissed their Contention 1, the Staff and thereafter Mr. Doherty proceeded to address Framsons' Contention 1. Since it is within our discretion to retain admitted contentions of a party that has withdrawn, we do so now and consider whether Framsons' Contention 1 should be dismissed pursuant to §2.749.

¹³ In passing, we note that Mr. Doherty argues that the NRC Staff is not truly an adversary of either the Applicant or the Intervenor because the Staff may or may not support the Applicant or the Intervenor on any given issue and because it does not meet the standing requirements of §2.714. Accordingly, he challenges the right of the Staff to file a motion for summary disposition against an intervening party. The argument is a frivolous one. 10 CFR §2.749 expressly provides that "any party may move for summary disposition". Further, he is barred by §2.758(a) from attacking any rule or regulation of the Commission and he had not complied with the requirements of §2.758(b) in order to petition that the application of §2.749 be waived or an exception be made in the instant proceeding.

a spent fuel handling accident wherein a spent fuel assembly is dropped onto the spent fuel pool floor.

Doherty Contention 12

Intervenor contends the Rod Pattern Control System in the Instrument and Controls systems of the proposed ACNGS is not reliable. The operators of *Dresden Unit 3* (a G.E. BWR) reported the system inoperable for 54% of start-ups in 1972. Quad Cities Units 1 and 2 were operable in but 74% of the start-ups, and *Millstone Unit 1* reported this system failed in 172 of 245 start-ups in a 16 month period beginning in 1971. Further, 34.6% of "Reportable Occurrences" in BWR reactors in 1977 were in the Instrumentation and Controls area (NUREG-0483, page 4-7). The Average Power Range Monitor (APRM) used to detect surplus neutron flux in this system is not highly reliable. Power Range Instruments contributed to 36 "Reportable Occurrences" in BWR's in 1977, and 17 in 1976, (Nuclear Safety, volumes 19(1) and 20(1), 1978 and 1979, pp. 84 and 82, respectively). Most recently a rod block monitor was inoperative during start-up of the *Brunswick-2* reactor (Sept. 4, 1978) due to a failed intergrated circuit. Petitioners contend danger to their health and safety interest by a reactivity insertion accident during start-up unless Applicant installs a more reliable system than this one.

Applicant filed a Motion For Summary Disposition on August 4, 1980. On October 3, 1980, Mr. Doherty filed his reply.

In substance, supported by the affidavit of its expert affiant, Applicant asserted that there are no genuine issues of material fact to be heard inasmuch as significant design differences exist between the systems cited by Mr. Doherty and the ACNGS Rod Pattern Control System and thus that past problems which had occurred at older BWRs would not occur at ACNGS. In effect, in his reply, Mr. Doherty withdrew this contention because he "concluded ..., that major changes to rod removal control system of BWRs have been so extensive as to end the basis in the Contention directly applicable to the proposed ACNGS".

Accordingly, the instant motion is granted, and the Contention is dismissed.

Doherty Contention 13

Intervenor contends Applicant's Containment Emergency Sump Pump will not function reliably because during a loss of coolant accident (LOCA) thermal shielding and insulation may be ripped off or otherwise released or separated from in-containment building piping where it would block off the drain of water, preventing it from being recirculated for

cooling by the sump pump, and this would degrade the effectiveness of the Emergency Core Cooling System (ECCS). This would endanger Inter-venor's health and safety. This issue has been part of Task #C-3 in the Office of Nuclear Reactor Regulation as "Insulation Usage Within Containment". Since issues have been raised by Staff on Applicant's ultimate Heat Sink, and ACNGS will be the largest BWR in the nation when completed, failure of ECCS function due to sump pump water blockage is of particular concern.

Applicant filed a Motion For Summary Disposition on August 4, 1980. Mr. Doherty filed a reply on September 22, 1980.

In substance, supported by the affidavit of its expert, Applicant asserted that there is no litigable issue of material fact because it is clear that each of the five ECCS pump suction lines will be provided with a strainer assembly; that the size (from 1/16th to 1/8th inch in diameter) and configuration of the strainer openings guarantee that the maximum particulate size that will pass through the strainer will also pass through the smallest restrictions in the pumps, piping, containment spray nozzles, and core channels which comprise the ECCS flow path; and that the insulation utilized in the drywell will be of the metallic reflective type which is the least likely of available insulation types to result in the blockage of the ECCS strainers. Apparently Mr. Doherty agrees that the possibility of insulation degrading the effectiveness of the ECCS does not present a genuine issue of fact that must be heard. (Doherty Reply at p. 1) Accordingly, the instant motion is granted, and the Contention is dismissed.

However, noting that Applicant ranges beyond the debris source mentioned in the contention (i.e., insulation), Mr. Doherty urges that there remains a triable issue of fact. He observes that while Applicant alleges that, by complying with Regulatory Guide 1.54 as described in the PSAR, Appendix C, it has greatly minimized the possibility that paintings and coatings used inside the containment could separate from pipes and cause ECCS blockage, the fact is that Applicant has set restrictions on its compliance with Regulatory Guide 1.54. Doherty cites Applicant's response to said Regulatory Guide at page C 1.54-1 of the PSAR which states that "Applicant will comply with the regulatory position of this guide only with respect to those significant areas that have a direct potential post-LOCA debris pathway to the Suppression Pool".

During the course of the health and safety phase of the hearing, Applicant is requested by the Board to clarify and specify what it means by this apparent exception to Regulatory Guide 1.54.

Doherty Contention 15

Intervenor contends his health and safety interests are inadequately protected because the industry standard power excursion theory (WIGLE) is inadequate to represent the increase in heat energy due to rapid increase in reactivity in a Design Based Power Excursion Accident (DB-PEA). Experiments reported in IN-1370 Large Core Dynamics, pp. 48-87, where a burst of neutrons was injected in the side of reactor, give results which when compared to WIGLE indicate this industry standard DB-PEA theory might underpredict the energy yield of a power excursion of 50%. This underprediction is not factored into the DB-PEA calculations, which is significant since power excursion theory predicts the energy yield per gram of fuel in a PEA will be about 70% of the design safety limit (280 calories/gram) for fuel rods. (See, Regulatory Guide 1.77, May 1974, PSAR, Montague I & II, pp. 4.3-29, and 15.143-55.) Further, the National Reactor Testing Station (NRTS) recommended in 1970, a special research program to resolve this underprediction (IN-1370, p. 18).

Hence, Intervenor contends that Applicant's one-dimensional time code (described in Supp. No. 2 to the SER on p. 4-11) under generates the true SCRAM reactivity function for this system because the product generated is too small compared to data resulting from the neutron burst experiments reported in IN-1370 (*supra*), as is the data generated by WIGLE. (Note: This Intervenor does not contend Applicant's NSSS vendor uses WIGLE or relies upon it, but rather that Applicant's analytic method generates the SCRAM reactivity function for the DB-PEA theory, *as does* WIGLE.)

Hence, Applicant or Applicant's NSSS provider should be required to provide data from power excursion tests from full-scale reactors as was recommended by the AEC's test laboratory in 1954 (see "International Report," PTR-738, "A Review of the Generalized Reactivity for Water-Cooled and Moderated UO₂ Fueled Power Reactor," G.O. Bright, *et al.*), and the BWR system be redesigned to reduce its reactivity potential.

The Applicant filed a Motion for Summary Disposition of this contention on August 4, 1980. Mr. Doherty filed a response in opposition on November 4, 1980, and subsequently filed a supplemental response on February 16, 1981, without leave of the Board. Applicant's motion was supplemented by the following:

1. Statement of Material Facts as to Which There is no Genuine Issue to be Heard;
2. An undated nineteen page excerpt from Applicant's deposition of Intervenor;

3. An affidavit of John F. Schardt, mechanical engineer and Senior Licensing Engineer for Applicant's NSSS vendor, G.E., dated July 29, 1980; and
4. The professional experience and qualifications of the affiant, undated.

In summary, Applicant's affiant asserts that:

Instead of using the WIGLE code, G.E. uses an analogous one-dimensional space/time code to predict scram reactivity as a function of time, which in turn is used in analyzing the severity of abnormal transients;

The appropriateness of such a code has been verified by tests at a commercial nuclear power station and the results derived from the G.E. code are conservatively understated when used in transient analyses;

The overall conservatism of transient analyses has been demonstrated through comparisons with actual startup data obtained from numerous plants;

The fuel design safety limit of 280 cal/gm refers to a rod drop accident, for which G.E. uses a three dimensional code (shown to be conservative) rather than its analog of the WIGLE code;

The underprediction by the WIGLE code of the response to a positive reactivity insertion in a SPERT project core, at the (formerly) National Reactor Testing Station, in the "assessment" of the affiant, is not a basis for faulting either the WIGLE code or the G.E. code, due to vastly different experimental conditions not representative of typical BWR scram conditions.

Applicant's affiant is a mechanical engineer whose educational background and work experience provide little indication that he possesses expertise in areas such as reactor kinetics, neutronics, and off-normal transient behavior. His affidavit, however, draws conclusions from cited literature and makes certain assessments that seem to require such expertise in order to be supportive of G.E.'s analytical methods and results.

Mr. Doherty's responses do not identify specific material facts as to which there are claimed to be genuine issues to be heard. He refers to numerous exhibits excerpted from cited publications (including the proprietary Reed Report) to support his thesis that the techniques for reactivity calculations and transient analyses used by G.E. are inadequate to treat design basis power excursion accidents in the ACNGS. In particular, Intervenor alleges two shortcomings of the G.E. analyses: an incorrect assessment of both the SCRAM reactivity function and the amount of heat energy generated in the fuel. However, he does not explain how the information extracted from his exhibits is sufficiently applicable to the ACNGS to justify such an allegation.

We are unable to conclude from the foregoing that there are no genuine issues of material fact in dispute. Accordingly, Applicant's motion for summary disposition is denied and testimony regarding Doherty Contention 15 will be heard.

Doherty Contention 24

Applicant has not provided a basis for showing that the reactivity insertion from any dropped control rod will be sufficiently small to prevent the peak energy yield from exceeding 280 calories per gram of fuel.

Applicant filed a Motion for Summary Disposition on August 4, 1980. Intervenor filed a response in opposition on November 4, 1980, and, without leave of the Board, supplemented this response by a filing on February 16, 1981. Applicant's motion was accompanied by the following:

1. A Statement of Material Facts as to Which There is no Genuine Issue to be Heard;
2. An undated, 13 page excerpt from Applicant's deposition of Mr. Doherty;
3. An affidavit of R. C. Stirn, Nuclear Engineer, Manager of Core and Fuel System Design and an employee of Applicant's NSSS vendor, dated June, 1980; and
4. A statement of the educational and professional qualifications of affiant, dated July, 1980.

Applicant asserts in substance that:

A dual channel, safety related rod pattern control system (RPCS) will limit the maximum incremental reactivity worth of any control rod to $0.8\% \Delta k/k$, as derived in NEDO-21231, a G.E. Report dated January, 1977;

A dropped rod will be limited in its fall velocity to less than 5 ft/sec; and

Under the above assumptions, the worst-case rod drop event¹⁴ will result in a peak enthalpy of less than 135 calories per gram of fuel, as derived in NEDO-10527, a G.E. Report dated March, 1972.

Mr. Doherty's responses lack a statement of material facts remaining at issue, nor does he provide a supporting affidavit. He relies instead upon numerous exhibits excerpted from cited publications to support his assertion that a worst-case rod drop event may be more serious than has been represented by Applicant. Intervenor's concerns include the following:

A G.E. Report, APED 5756, dated March 1969, that derives a lower peak fuel enthalpy than NEDO-10,527;

¹⁴We note that no core/moderator temperature is specified for the onset of such an event.

The effects of residual reactivity and destructive pressure pulses that have not been accounted for in the Applicant's analysis; and Lack of a commitment by Applicant to a control rod design that limits incremental rod worth to $0.8\% \Delta k/k$.

As evidenced above, Mr. Stirn's affidavit does not fully address and thus is not dispositive of Intervenor's concerns. Accordingly, there remain genuine issues of material fact in dispute, the motion for summary disposition is denied, and testimony on Doherty Contention 24 will be heard.

Doherty Contention 28^{14a}

Applicant's PSAR is inadequate because it does not consider and calculate the consequence of a control rod ejection accident, and there is no protection for Intervenor's safety interest because applicant's control rod drive system has no protection against an accident where the control rod system breaks loose from the reactor vessel where it joins. Cracks have recently been found in these "partial penetration welds" at the *Big Rock* (BWR) Nuclear Station in Michigan. The pressure from the reactor vessel, plus the force of gravity would combine to cause an inserted control rod to be driven out more rapidly than would occur in a rod drop accident and would lead to a reactivity insertion. Applicant should be required to design its system such that in the event of a break at this junction the public would still be protected against a reactivity insertion. In addition the Applicant should be required to calculate the effects of a control rod ejection on the public safety, because it is a credible accident.

Applicant filed a Motion for Summary Disposition on August 4, 1980, based upon the original wording of the contention. Mr. Doherty responded in opposition on September 4, 1980, noting that the amended wording of the contention (as stated above) is the proper version to be discussed. We agree.

The issue is whether certain off-normal conditions might develop within and with regard to the reactor pressure vessel such that a control rod ejection can occur that would have consequences more serious than the rod drop accident addressed by Doherty Contention 24. Since Applicant's motion does not address the admitted version of Contention 28 and since Intervenor's response identifies causes for concern not assessed by Applicant's affidavit, we conclude that the issue has not been joined. Accordingly, the motion for summary disposition is denied and testimony regarding this contention will be heard.

^{14a} As amended by Mr. Doherty on July 31, 1979 and admitted in the Order of March 10, 1980.

Doherty Contention 31

Intervenor contends coolant flow-induced vibration of the fuel assemblies will lead to degradation of the Local Power Range Monitor's (LPRM's) signal due to wear or other damage, to the extent reactivity monitoring and control in several significant fuel rods will become unreliable, exceeding the $\pm 5.4\%$ error in Radiation Monitoring Systems and leading to administrative derating of the reactor. Intervenor contends Applicant should provide additional LPRMs to give additional information on the BWR core's power characteristics sufficient to prevent either administrative derating or accident hazards such as power excursions. Current plans for 33 LPRMs are not sufficient.

As indicated above, on August 4, 1980, Applicant filed a motion for summary disposition directed to both this contention and TexPirg Contention 11, which was supported by a common affidavit, and by portions of depositions of Messrs. Johnson and Doherty. We again address the same motion as it relates to the Doherty contention. Mr. Doherty, on September 6, 1980, filed an opposing response.

Applicant's list of facts as to which it is alleged there is no litigable issue is the same as presented above with respect to TexPirg 11. Applicant's affiant Torres emphasizes the extensive tests and analyses that have been performed and will be performed, prior to operating the ACNGS, directed toward eliminating or mitigating flow induced vibration (FIV) impacts on reactor internals. Although he lists local power range monitors (LPRMs) as one of those internals that has been tested and will be further tested in the future, affiant gives no test results and provides a discussion of FIV impacts on LPRMs that is not dispositive of the allegations in the contention, i.e., the magnitude of error in an LPRM readout caused by FIV, and the sufficiency of the number of LPRMs planned for the ACNGS core.

Intervenor Doherty's opposing response presents a well-reasoned, documented rebuttal to the Torres affidavit.¹⁵ We do not discuss it here, since we have already determined that the Torres affidavit is deficient. Having not met its burden, Applicant's motion for summary disposition is denied, and Doherty Contention 31, in the form stated above, will be litigated during the health and safety phase of the evidentiary hearings.

Doherty Contention 33

¹⁵ Mr. Doherty proposes in this response a more succinct restatement of his contention. This is not a proper manner in which to amend a contention; the version stated above is retained.

Applicant's reactivity control system relies excessively on the Doppler effect to mitigate the effects of transient-caused overpower of the system. Applicant's reactor manufacturer, General Electric, relies on experimental data that does not support this reliance as will be shown below. Applicant's referenced publication, NEDO-20,964, "Generation of Void and Doppler Reactivity Feedback for Application to BWR Design" (July, 1975), states: "The basic mathematical model in calculating void reactivity and reactivity coefficient for BWRs has been the same since 1961," (p. 15). This mathematical model has been relied upon because it produced data similar to the experimental data produced from experiments using the SPERT-I and SPERT-III reactors. But the experiments from SPERT-I, cited in NEDO-20,964, cannot be applied because that reactor used powdered oxide or uranium which dispersed into the coolant during excursion testing, creating the appearance that Doppler feedback had decreased the reactivity when it was actually the dispersal of the powder through the failed cladding to the coolant which mitigated the transient effects. SPERT-III, referenced in NEDO-20,694, was an "... experimental program limited to nondestructive reactivity accident tests" (IDO-17281, March 1969, p. 79), which did not include investigation into the mechanical behavior of the fuel (pellets of uranium dioxide). The National Reactor Testing Station planned and sought support for investigations with SPERT-III which would not be limited to nondestructive reactivity accident tests in an internal report, PTR-815 (see P. 17-9 and 30), but the tests were not performed.

Intervenor contends that since ACNGS is the most powerful BWR attempted (and has a higher power core density than any licensed BWR) that miscalculation of the Doppler reactivity feedback effect will produce greater consequences to his health and safety interests.

Applicant filed a Motion for Summary Disposition on August 4, 1980. Mr. Doherty responded in opposition on November 4, 1980, and supplemented this response (without leave of the Board) on January 26, 1981. Applicant's motion contained the following attachments:

1. Statement of Material Facts as to Which There is No Genuine Issue to be Heard;
2. An updated, twelve page excerpt from Applicant's deposition of Mr. Doherty;
3. The affidavit of R. C. Stirn, (including one attached figure), Professional Nuclear Engineer, employed by G.E., dated July, 1980; and
4. A statement of qualifications of the affiant, dated July, 1980.

Item 1., above, is reproduced here:

1. "Doppler broadening" is the term used to identify the increased range of energies at which neutrons will be absorbed by a target nucleus at higher reactor temperatures. This "broadening" has the effect of reducing reactivity. (Affid., p. 2)
2. In calculating the reactivity effect caused by Doppler broadening in a BWR-6, General Electric uses a mathematical model based upon the universally accepted fundamental principles and empirical values of Doppler broadening. (Affid., p. 3)
3. The General Electric model was compared primarily to the Hellestrand tests which measured the temperature dependence of resonance neutron absorption in clad uranium dioxide fuel rods. The Hellestrand test results corroborated General Electric's prediction of the effect of Doppler broadening. In addition, the General Electric model was secondarily compared to data derived from the appropriate SPERT tests; however, data from the SPERT tests were not relied upon to support the Doppler reactivity model. (Affid., pp. 3-4)

Applicant's affiant describes the phenomenon of Doppler broadening and its importance in limiting a reactivity excursion accident. (Affid., pp. 1-2) He explains what G.E. did to develop its mathematical model to take account of the phenomenon, and what comparisons were made to verify the adequacy of the results. (Affid., pp. 2-4) Finally, Mr. Stirn explains that a confirmatory comparison was made with the results from appropriate and relevant SPERT tests that further supported the G.E. analysis. (Affid., p. 4 and Exhibit A) The affidavit is reasonably well documented, and is supportive of Applicant's statement of facts as to which there is no issue. We observe that affiant's education and professional experience seem to qualify him to address the matters at issue.

Mr. Doherty's responses are unsupported by affidavits. Instead, his initial response relies upon fifteen exhibits to support his assertion that G.E. has not properly dealt with the Doppler broadening phenomenon. His supplemental response provides selected quotations attributed to G.E.'s proprietary Reed Report to further support his case. Neither response placed in question the validity of Applicant's statement of facts not at issue. Moreover, many of Intervenor's concerns address considerations outside of the scope of his contention, namely, the effects of time response, temperature dependence, burnup dependence, and overlapping neutron absorption resonances. These considerations not only constitute an impermissible broadening of the scope of the contention, but, in advancing them, Intervenor fails to establish how they invalidate the G.E. analysis.

In conclusion, we find that Applicant's motion is dispositive of the issues raised by Doherty Contention 33 and, accordingly, the motion for summary disposition is granted, and the Contention is dismissed.

Doherty Contention 35

Applicant will be unable to provide safe welding of piping at ACNGS without costly repairs to such welding or danger to petitioners health and economic interests in the event of pipe break as a result of such welding not being rewelded when it should have been. There have been cadweld failures at STP which have been reported in NUREG-0030. Welding at *Comanche Peak Nuclear Steam Station, Units 1 & 2* in Somerville County, Texas, has been done frequently by persons being trained to be welders prompting large frequency of rewelding and seven meetings between NRC officials and the utility representatives. This Intervenor says the same situation is likely to occur here due to a shortage of trained employees. Intervenor contends Applicant should be required to present a program for training persons before they weld at the ACNGS site.

The Staff filed a Motion for Summary Disposition on August 8, 1980. Mr. Doherty filed a reply on September 15, 1980.

In support of its motion, the Staff relies upon an affidavit of one of its senior materials engineers who attests that safe welding operations at ACNGS will be assured by (1) the requirements of 10 CFR Part 50, Appendix B which mandate appropriate welder qualifications, (2) the testing requirements of the ASME code and the Applicant, (3) the examination of production welds by the architect-engineer and Applicant to verify that they possess necessary mechanical properties, and (4) the audit of those tests by the Office of Inspection and Enforcement. Mr. Doherty acknowledges that the architect-engineer (Ebasco) will be different from the one employed at the Comanche and STP projects, that he does not know what procedures will be used by Applicant and by Ebasco, and that he has no basis for alleging that the welding to be accomplished by Ebasco will be inadequate. However, Mr. Doherty asserts that, despite Applicant's seeming adherence at STP to the requirements of various standards, codes and regulations, the evidence shows that many welders at STP were unqualified and that there were many defective welds.

The Intervenor has raised an issue of material fact and we will hear evidence upon this matter. The Motion of Summary Disposition is denied.

Doherty Contention 38-B

Contrary to NUREG-0578, the ACNGS reactor cannot be brought to cold shutdown in 24 hours.

The Applicant filed a Motion For Summary Disposition on August 4, 1980, which was supplemented by four attachments:

1. A list of three material facts as to which there is no genuine issue to be heard;
2. A portion (pp. 13-18) of an undated deposition of Mr. Doherty taken by Applicant;
3. An affidavit of an employee of Applicant's NSSS vendor; and,
4. A statement of the qualifications of the affiant, dated July, 1980.

Mr. Doherty responded in opposition to this motion on September 4, 1980.

In substance, Applicant's motion asserts that three listed material facts as to which there is no genuine issue, as supported by the affidavit, establish that the reactor can be brought to cold shutdown within a total period of seven hours. Hence, Applicant claims to be entitled to summary disposition of this contention as a matter of law.

Mr. Doherty's opposing response, supplemented by three exhibits¹⁶, fails to identify any issues of controverted material facts which must be heard. Moreover, the portion of the deposition appended to Applicant's motion (but not referred to therein) raises serious question as to Intervenor's familiarity with the substance of the contention. Despite these deficiencies, however, we focus instead upon Applicant's affidavit, which alleges numerous technical, functional and design facts. Were they supported by references to evidentiary material, they might warrant our consideration vis-a-vis Intervenor's arguments. However, the affidavit is unsupported and conclusional in nature, and the affiant's statement of qualifications does not cause us to consider his statements as expert opinions. We conclude that Applicant has failed to demonstrate that there is no genuine issue of material fact in dispute. Accordingly, the instant motion is denied and evidence regarding the contention will be heard.

Doherty Contention 43

Intervenor contends Applicant's stainless steel components including safety system piping, and nuclear steam supply system piping will be coated and cleaned with compounds that could contribute to corrosion, intergranular cracking or stress corrosion cracking. These compounds contain chlorides, fluorides, lead, zinc, copper, sulfur, or mercury which are leachable or could be released by breakdown caused by radiation. Further, that Applicant's coating and cleaning program should conform to Regulatory Guide 1.54, because cracking of piping has been observed in

¹⁶ Page A-3 of NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations", July, 1979; Page 5-21 of NUREG-0152, "SER related to the preliminary design of the Gessar-238 NSSS" (undated); Page 5-9 of Supplement 2 of the Allens Creek SER, dated March, 1979.

several General Electric Units (i.e., *Duane Arnold Energy Center*, 1978) of similar construction to ACNGS. And, NUREG-0152, General Electric Standard Safety Analysis Report, p. A-5, indicate the General Electric position is to take exception to the provisions of Regulatory Guide 1.54 (Feb. 8, 1977).

Applicant filed a Motion for Summary Disposition on August 4, 1980. Intervenor Doherty filed his reply on September 22, 1980.

In substance, supported by an affidavit jointly executed by two employees from General Electric, Applicant asserts that there is no issue of material fact to be tried because (1) in compliance with Regulatory Guide 1.54, which is concerned primarily with preventing the release of coating materials inside the containment by radiation decomposition, chemical reaction or heat in a post-accident environment, G.E. will not coat the stainless steel piping and components of the several nuclear steam supply subsystems at ACNGS; and (2) as reflected in the PSAR, Applicant has committed itself to comply with Regulatory Guide 1.37, which precludes the use of chemical compounds upon austenitic stainless steel and nickel-base alloys that could contribute to intergranular cracking or stress-corrosion cracking.

In his reply, Mr. Doherty acknowledges Applicant's commitment in the PSAR to follow the stainless steel cleaning requirements in Regulatory Guide 1.37 and withdraws this portion of his contention. Further, in light of Applicant's motion and affidavit, Mr. Doherty withdraws that portion of his contention which alleges that all the nuclear steam supply system components and piping will be coated contrary to Regulatory Guide 1.54. Apparently, and it is by no means clear, the Intervenor contends that portions of the ACNGS emergency core cooling system components and piping will be coated. In support of this residual concern, Mr. Doherty relies upon correspondence between G.E. and the NRC Staff which was initiated by G.E.'s letter of July 13, 1976 that had proposed alternatives to the requirements of Regulatory Guide 1.54.

In light of Mr. Doherty's withdrawals of two portions of his contention, Applicant's motion is granted to that extent, and those two portions are dismissed. However, because of Mr. Doherty's residual concern, which raises a controverted issue of material fact, Applicant and Staff are requested to present evidence upon this single matter.

Doherty Contention 44

Intervenor contends the ACNGS design is unsafe against pipe break accidents at pipe cracks initiated by water hammer. Further, analysis of such an event is required to indicate what must be done to cope with

accidents caused by large deep cracks in the recirculation pipes such as those discovered at the *Duane Arnold Energy Center* in 1978. According to the 1978 NRC Annual Report; 100 incidents involving water hammer have occurred in both PWR's and BWR's. A recent Advisory Committee on Reactor Safeguards (ACRS) report to the Commission (August 16, 1979), indicates there is need for more adequate inservice inspection of piping including feedwater and steam supply piping, residual heat removal system, ECCS, containment spray system, and service water systems in nuclear plants such as ACNGS.

Intervenor contends:

a. Applicant should be required to analyze and determine what additional measures may be taken to mitigate the consequences of water hammer on system piping listed above, and

b. Applicant should be required to analyze and determine what additional measures may be taken to mitigate the consequences of water hammer on system piping listed above which has suffered the various types of cracking observed in NUREG-0531, and NUREG-75/067, and

c. Applicant should be required to analyze and determine what additional measures can reduce the probability of an event where water hammer causes a cracked pipe to break.

Applicant filed a Motion for Summary Disposition on August 4, 1980. Mr. Doherty filed an opposing response on October 19, 1980. Applicant's motion was accompanied by the following items:

1. A Statement of Material Facts as to Which There is no Genuine Issue to be Heard;
2. An undated excerpt taken from Applicant's deposition of Mr. Doherty, consisting of pages 336-347;
3. The joint affidavit (dated July, 1980) of Messrs. L. A. Gunther and W. F. Malec employed by Ebasco Services Incorporated, who are a Welding and Materials Engineer and the Supervising Mechanical Nuclear Engineer, respectively, assigned to the Al-lens Creek project; and,
4. Two exhibits comprising statements of professional qualifications of the affiants (Gunther statement dated May, 1980, Malec statement undated).

In substance, Applicant asserts that by two courses of action it will obviate the concerns of Intervenor. First, virtually all of the piping in the ACNGS - and specifically in the systems identified in the contention as being of concern - will be fabricated of "carbon steel, which has demon-

strated a very high resistance to IGSCC.”¹⁷ (Jt. Affid., p. 7) Affiants describe each of the systems mentioned in the contention and specify the piping alloy material to be used.¹⁸ (Jt. Affid., pp. 2-3) Second, Applicant asserts that by adopting standard industry practice and the guidance of NRC (e.g. NUREG-0582, “Water Hammer in Nuclear Power Plants”), “[t]he ACNGS fluid systems are designed to eliminate water hammer wherever possible.” (Jt. Affid., p. 4)

Mr. Doherty’s response does not list the material facts as to which there are genuine issues to be heard; nor does it contain supporting affidavits. Instead, he attaches fifteen exhibits excerpted from cited documents to support his assertion that IGSCC and water hammer phenomena continue to be of concern with regard to plant safety. Representative of these exhibits is an ACRS letter to the NRC, of August 16, 1979, which expresses concerns about these phenomena and suggests the possible need for additional attention to them. Additionally, via certain of his exhibits, Intervenor points out seemingly contradictory positions regarding industrial codes and NRC guidance as to acceptable carbon content for IGSCC resistant steels.

We are unable, on the basis of the information presented, to conclude that there are no genuine issues of undisputed material facts. Accordingly, we deny the motion for summary disposition of Doherty Contention 44, and testimony on these matters will be heard.

Doherty Contention 45

Intervenor contends that the lateral support of the ACNGS reactor core is not sufficient to withstand lateral seismic forces combined with the lateral blowdown force that arises simultaneously during a LOCA transient.

The above statement of this contention constitutes the version as reworded by this Board and admitted in our Order of March 13, 1980. The Staff filed a Motion for Summary Disposition on August 8, 1980, which addressed the original version that, as noted above, was altered by us when the contention was admitted. Mr. Doherty responded in opposition on September 22, 1980, in which he noted the above discrepancy; he supplemented his response (without leave of the Board) on January 26, 1981. Staff’s motion is accompanied by the following items:

¹⁷ We note that Applicant assumes that IGSCC (intergranular stress corrosion cracking) is the cause of the cracks that concern Mr. Doherty because of his reference to the Duane Arnold facility.

¹⁸ We further note that the contention introduces the identity of each system of concern by the word “including”, as though these may be examples rather than an all-inclusive list.

1. A Statement of Material Facts as to Which There is no Issue to be Heard;
2. Eighteen pages (undated) apparently excerpted from the Applicant's deposition of Mr. Doherty;
3. The undated, unsigned, unsworn "affidavit" of R. O. Meyer, employed by NRC; and
4. A statement of professional qualifications of the affiant, undated.

Staff's motion does not address the contention as reworded and admitted. Staff's statement of material facts not at issue addresses combined seismic and blowdown forces but the affidavit makes only an unsupported and conclusional assertion about the acceptability of the forces on the ACNGS core. The support for this conclusion by Staff's affiant is limited to a defense of the lack of lateral flashing loads in a BWR. Based upon affiant's statement of qualifications, we must question whether he possesses an appropriate background to discuss blowdown and seismic forces authoritatively.

We need not address Intervenor's responses because the issue raised by the contention has not been joined. Accordingly, Staff's motion for summary disposition is denied and testimony will be heard on Doherty Contention 45.

Doherty Contention 46

This Intervenor contends control rods capable of causing a five second period on being withdrawn one notch, if uncoupled from their drives and stuck in the core could, by falling several notches moments later cause a significantly shorter period leading to fuel damage. The core conditions necessary for fuel damaging short periods such as these are three:

1. When there is high xenon concentration in the reactor core (high xenon concentration magnifies the worth of certain central control rods until burned off),
2. Moderator temperatures are high (200°F - 480°F), and
3. The percentage of voids in the coolant was greatly reduced.

The Staff filed a motion for summary disposition on August 8, 1980. Mr. Doherty responded in opposition on October 23, 1980. The Staff's motion was accompanied by the following:

1. A Statement of Material Facts as to Which There is no Issue to be Heard;
2. Nineteen pages (undated) apparently excerpted from Applicant's deposition of Mr. Doherty;

3. The affidavit of W. L. Brooks, a nuclear engineer employed by the NRC, dated August, 1980; and,
 4. A statement of affiant's professional qualifications, undated.
- Item 1, above, is reproduced here:

1. The fuel enthalpy limit is 280 calories per gram at ACNGS.
2. A total rod worth greater than $0.013\Delta k/k$ must result from a control rod drop to result in a fuel enthalpy of 280 calories per gram.
3. The rod pattern control system at ACNGS will be designed to limit the maximum potential dropped rod worth to less than $0.010\Delta k/k$.
4. Analyses show that under a wide variety of core conditions and drop distances, the rod worth increments range from a low of $0.005\Delta k/k$ to a high of $0.0083\Delta k/k$.
5. If further analysis shows that $0.010 k/k$ will be exceeded, the Applicant is required to design the rod pattern control system to limit the maximum of worth to $0.01 k/k$.
6. Drastic patterns such as insertion of rods on the opposite side of the core from the most reactive rod cause an increase in worth of the maximum rod from 0.0083 to only $0.012\Delta k/k$ which is below the total rod worth of $0.013\Delta k/k$ allowable to not exceed the fuel enthalpy limit.
7. The presence of enhanced notch worths due to xenon in the core cause the total worth of the high-worth rods to decrease, thus reducing the consequences of the rod drop accident.
8. The postulated thermal hydraulic condition in the core during heatup where moderator temperatures are near saturated conditions (220°F to 480°F) has been analyzed and shown to reduce the consequences of the design basis rod drop accident.
9. The presence of voids in the core reduces the effect of a particular rod motion (i.e., reduces the rod worth) and makes the Doppler coefficient more negative relative to no voids in the core.
10. Reducing the rod worth and making the Doppler coefficient more negative will reduce the consequences of the design basis rod drop accident.

The Staff agrees with the first sentence of Mr. Doherty's contention. Staff's affiant then reviews and documents the reactivity behavior of the ACNGS following a design basis control rod drop accident¹⁹ and argues that such a scenario represents an upper bound on reactivity insertion and

¹⁹ A design basis rod drop accident is the subject of Doherty 24, regarding which Applicant's motion for summary disposition has been denied, *supra*.

fuel enthalpy consequences. He concludes that each of the three core conditions postulated in the contention results in a less severe impact than that resulting from a design basis control rod drop accident. The bases for each of these conclusions are adequately developed and collectively the discussion supports Staff's list of undisputed material facts. Affiant Brooks seems to have the appropriate professional qualifications to enable him to speak authoritatively on the matters at issue.

Mr. Doherty's response, without benefit of an expert's supporting affidavit, relies upon six exhibits excerpted from cited documents to support three primary concerns:

- It is questionable whether Applicant can effectively restrict the maximum worth of any particular rod in order to prevent fuel enthalpy from exceeding 280 calories per gram;
- Even though the 280 calories per gram limit is not exceeded, there will be fuel damage; and
- The behavior of certain fission product isotopes of iodine and xenon following reactor shutdown may dangerously increase control rod worth.

Intervenor fails to show how or why these concerns can overturn the results reached by Staff's affidavit. We emphasize that here we are looking solely to the question of whether an event such as postulated by this contention can result in an accident having more serious consequences than the design basis control rod drop accident. We conclude that Staff's presentation is dispositive.

Accordingly, we grant Staff's motion for summary disposition of Mr. Doherty's Contention 46 and the Contention is dismissed. (However, we note that Doherty 24 remains to be litigated.) We further note our desire to be informed during the evidentiary hearing as to whether there is an inconsistency between the value of rod worth limitation ($0.01\Delta k/k$) expressed herein by the Staff and that stated by Applicant ($0.008\Delta k/k$) in its motion for summary disposition of Doherty 24.

Cummings Contention 9²⁰

The health effects* of low level radiation emitted during normal operation of the plant, even though meeting the "as low as is reasonably achievable" standards of Appendix I, if included in the NEPA balancing of costs and benefits, would alter this benefit to the extent that costs would outweigh benefits.

²⁰ Consolidated Contention (Cummings 9, Griffith 1, Johnston 1 and Lemmer 5) as reworded by the Board and admitted pursuant to its Order of September 26, 1980.

* Health effects include impacts upon humans, animals and plants.

The Staff filed a motion for summary disposition on November 26, 1980. In support of its motion, Staff appended the affidavit of Dr. Reginald L. Gotchy, Senior Radiobiologist, Radiological Assessment Branch, NRC.²¹ In substance, Staff asserts the following material facts as to which it contends there are no genuine issues to be heard:

1. In order for the NEPA balancing of costs and benefits to be altered by health effects considerations, the NRC models used to calculate potential somatic effects (cancer) and genetic effects would have to seriously underestimate the risks. (Gotchy 1, p. 5)
2. The NRC health effects models have relied heavily on the BEIR I (1972) and BEIR III (1980) reports.²² The BEIR Committee is regarded as one of the most outstanding groups of experts on the medical and biological risks of radiation exposure. (*Id.* pp. 5-6)
3. The BEIR Committee has considered and discredited most of the studies that have criticized the conventional wisdom regarding radiation bioeffects and BEIR III can be considered the latest authoritative guidance or the best scientific evidence available respecting health effects from radiation exposure. (*Id.* pp. 6-12)
4. Comparing the risk values cited by BEIR III, and the risk values used by NRC, the Staff finds the BEIR values to be slightly lower for both cancer deaths and genetic effects. Thus the NRC models tend to overestimate radiation effects. (*Id.* p. 13)
5. 10 CFR Part 50, Appendix I design objective doses to individuals are 5 mrem/year (or less) to the total body, or 15 mrem/year (or less) to any organ, and health risks are proportional to the Appendix I doses. (*Id.* pp. 13-14)
6. Using the NRC health effects models, the *lifetime* cancer mortality risk per year of exposure to Appendix I dose levels is less than one chance in a million as compared to an average *annual* risk of mortality from other causes on the order of 14 changes in 1,000. (*Id.* p.15)
7. People are exposed to normal background radiation varying from 80 to 200 mrem/yr or 1,000% or more in excess of the Appendix I design objective levels. Since most experts believe

²¹The initial Gotchy affidavit is cited hereinafter as Gotchy 1.

²²"The Effects on Population of Exposure to Low Levels of Ionizing Radiation," BEIR Committee, National Academy of Sciences.

background radiation accounts for only a few percent of the lifetime risk of mortality from cancer of about 20%, the overall risk of cancer mortality would not be significantly changed by exposures at the Appendix I levels. (*Id.* pp. 15-16).

8. A reasonable estimate of the cumulative doses to the U.S. population from LWR's operating at Appendix I levels is about 100 person rem. Using current health effects models, there might be as much as one death in the years ahead for each year assuming there are 100 large LWR's operating in the U. S. (*Id.* p. 16)
9. The collective risk of a genetic defect occurring during the next five generations is about twice that of the risk of cancer mortality but would be relatively insignificant compared to the current estimated risk of about 6% per generation from all other causes. (*Id.* pp. 16-17)
10. The *de minimis* nature of Appendix I health risks cannot significantly affect the NEPA cost benefit balance and result in an unfavorable NEPA conclusion regarding construction of the facility. (*Id.* p. 17)
11. Harm to plants and animals from the effects of radiation meeting the standards accepted as adequate for man are deemed to be highly unlikely. (*Id.* p. 5)

On December 18, 1980, Applicant filed an answer supporting Staff's motion and concurring in Staff's statement of material facts. Applicant attached to its answer the affidavit of Dr. Leonard Hamilton,²³ which set forth the bases for Applicant's concurrence, and supported the statement of Staff's affiant, Dr. Gotchy. On December 23, 1980, Counsel for the Intervenors, Stephen A. Doggett, Esq., filed an answer opposing Staff's motion to which was appended an unpublished paper by Dr. Irwin D. J. Bross titled, "A 1981 Reassessment of the Health Hazards of Low-Level Ionizing Radiation", dated October 9, 1980.²⁴ Dr. Bross's accompanying affidavit merely attested that the facts in his unpublished paper were true and correct to the best of his knowledge, information and belief. Intervenors' answer set forth the following statement of material facts as to which they contend there are genuine issues to be heard:

1. The NRC models used to calculate potential somatic effects (cancer) and genetic effects seriously underestimate the risks.
2. Health risks from cancer and genetic effects from normal operations of large LWR's in the U.S. are not insignificant relative to naturally occurring events.

²³Hereinafter cited as Hamilton 1.

²⁴Hereinafter cited as Bross 1.

3. The underestimating of Appendix I health risks significantly affects the NEPA conclusion regarding construction of ACNGS.

While Mr. Doggett's covering letter noted that "Intervenors would show that Staff's motion in no way presents evidence of the issue of risk to plants and animals," this matter was neither set out as a genuine issue of material fact in Intervenors' statement of material facts nor discussed in their submissions. Whereas "genetic effects" are included in Issues 1 and 2 of Intervenors' above list of issues, genetic effects on future generations are not discussed in Bross 1 nor in subsequent submissions of Intervenors.

Intervenors did not respond to Applicant's answer which supported Staff's motion.²⁵ The Board invited comment from Applicant and Staff on the Bross paper (Bross 1) and stated that Mr. Doggett would have an opportunity to respond to both Applicant and Staff's comments. (Tr. 5775-78) Commenting affidavits from Dr. Hamilton on behalf of Applicant (Hamilton 2) and from Dr. Gotchy on behalf of Staff (Gotchy 2) were received, dated March 9, 1981, and March 13, 1981, respectively. Mr. Doggett filed Dr. Bross's affidavits responding to Hamilton 2, and Gotchy 2 on March 31 and April 14, 1981, respectively.²⁶ On April 27, 1981, Applicant filed a motion to strike the Affidavit of Dr. Bross, responding to Hamilton 2. Applicant asserts that the subject affidavit is 1) a scurrilous personal attack upon Applicants' affiant, and 2) it does not respond to the substantive arguments raised by Dr. Hamilton. Intervenors have not responded to this motion. On review of the subject affidavit, we conclude that its characterization by Applicant is will taken, and, absent a reply from Intervenors, we can only assume that they concur. The motion to strike is granted and we make no further reference to this affidavit. (Bross 2)

In considering Intervenors' response to the Staff's motion for summary disposition, we first note that in preparing the paper from which Intervenors have drawn their statement of material facts at issue, Dr. Bross was addressing only generally the subject matter of the contention: he did not address specifically the Staff's statement of uncontroverted material facts in its motion for summary disposition. In essence, Dr. Bross's paper challenges the validity of estimating health risks from low level radiation by linear extrapolation from data on persons exposed to much higher levels. His argument boils down to a focus on the question of "What is the

²⁵ Board Order of January 5, 1981, gave Mr. Doggett until January 30 to file a response to Applicant's supporting answer, said response to address *only* those new facts and arguments presented by Applicant. On February 11, Mr. Doggett informed the Board he did not intend to respond. (Tr. 5528-29)

²⁶ Hereinafter referred to as Bross 2 (responding to Hamilton 2) and Bross 3 (responding to Gotchy 2).

doubling dose for leukemia in men? — If the doubling dose is around 5 rem, then NRC is permitting a dangerous exposure. No other carcinogen is permitted at levels close to a doubling dose for cancer in humans". (Bross 1, p. 3) After alleging to have discredited both the linear and the threshold forms of dose-response curves, and after providing data interpretations as to why his genetic degradation hypothesis is appropriate, Dr. Bross concludes his paper with a discussion of public health implications, wherein he states:

1. "On the basis of present facts the best 1981 estimate for the doubling dose for leukemia (or for blood cancers) would seem to be about 5 rads or rems." (*Id.* p. 22)
2. "In cost-benefit evaluations for the deployment of new radiological technology the 5-rad estimate should be regarded as a *minimum* cost — that the evidence on radiation risks indicates that these risks are more than 30 times greater than official estimates²⁷ made in 1979." (*Id.* p. 23)

As the Board has previously observed, Dr. Bross did not comment upon the effects of radiation on plants and animals, nor upon the genetic effects on future generations. It is significant to note that his discussions of somatic effects include both cancerous and noncancerous impacts. He further concludes that if both categories of impacts are assessed, "the increased risk of cancer and other premature mortality is much greater than 0.2%". (Bross 3, p. 2)

Dr. Gotchy's submissions assert that the implications of the Bross conclusions lead to results not supported by scientifically accepted literature. Gotchy further asserts that one of the studies relied upon by Bross has been discredited. (Gotchy 2, pp. 4-5) Dr. Gotchy concludes that even if the risk of leukemia were low by a factor of 20, the incremental increase in cancer mortality risk would be less than 0.2% (from 30 years of whole body exposure to the Appendix I limit of 5 mrem/yr), which should not be a reasonable basis for challenging the NEPA cost-benefit balance for Allens Creek. (Gotchy 2, p. 5) Noncancerous somatic impacts are not discussed.

Dr. Hamilton's submissions allege that two of the studies relied upon by Dr. Bross do not yield the results claimed by Bross (Hamilton 1, pp. 7-13), and that the statistical methodology of Bross is unsound. (Hamilton 2, pp.

²⁷ The official estimates noted here appear to refer to "Interagency Task Force on the Health Effects of Ionizing Radiation: Report of the Work Group on Science", June, 1979. (Bross 1, Ref. 2)

4-5) Hamilton also cites the BEIR III report as discrediting the conclusions of Bross. (*Id.* pp. 7-8)²⁸ Finally, Dr. Hamilton asserts that the discussion of Dr. Bross regarding the appropriate form of the dose-response curve to be used for low doses is seriously flawed. (Hamilton 2) Like Dr. Gotchy, Dr. Hamilton does not discuss noncancerous somatic effects.

Whereas the foregoing discussion only briefly summarizes the lengthy submissions of Drs. Bross, Gotchy and Hamilton, we have examined the proffered materials in detail, for the sole purpose of determining whether there are genuine issues of material fact remaining in dispute. We conclude that the following controverted issue of material fact raised by Intervenors must be tried:

The increased risk of cancer and of noncancerous effects²⁹ from Appendix I levels of radiation is considerably greater than the 0.2% value reached by the NRC, thus invalidating its favorable cost-benefit balance assessment.³⁰

This disputed issue cannot be decided under summary disposition procedures. Thus, the Board denies in part the Staff's motion for summary disposition and we will hear evidence upon this specific, controverted issue of material fact. However, we grant the instant motion to the extent that we dismiss that part of the consolidated contention which alleged that plants and animals would be harmed at Appendix I levels of radiation because, as observed above, Intervenors did not set forth this matter in their statement of material facts and did not discuss the reasons why this was a genuine issue of disputed material fact which must be heard.

²⁸We note that the BEIR III report predates the Bross submissions.

²⁹We note that the corrected version of the 1980 BEIR III Report, at p. 478, states that noncancerous effects of radiation at low doses "cannot now be excluded" from consideration.

³⁰Since, as noted above, Dr. Bross adverts only to somatic health effects, this issue does not encompass genetic effects as a contested issue.

It is so ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

E. Leonard Cheatum
ADMINISTRATIVE JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Sheldon J. Wolfe
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 1st day of September 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

**CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.**
(Perry Nuclear Power Plant, Units 1 and 2)

September 9, 1981

Denying objections to its special prehearing conference order, the Licensing Board clarifies this order and orders the appointment of lead intervenors to consolidate and coordinate the actions of party intervenors for purposes of the orderly conduct of the proceeding. In addition, the Licensing Board grants the petition of Ashtabula County Commissioners and Ashtabula County Disaster Services Agency for admission as non-party participants under 10 CFR §2.715(c).

**RULES OF PRACTICE: CONTENTIONS; CHANGED
CIRCUMSTANCES**

A change in the need for power, at the operating license stage, must be sufficiently extensive to offset the environmental and economic costs of construction before it may be raised as a viable contention.

**RULES OF PRACTICE: SUMMARY DISPOSITION; BURDEN OF
PROOF; BURDEN OF PERSUASION**

If Applicant bears a burden of proof on an issue and moves for summary disposition, intervenors will have the burden of going forward to demonstrate that factual issues exist which require a hearing. The

applicant retains, however, the ultimate burden of demonstrating that there is no genuine issue of fact with respect to any issue it seeks to exclude from a hearing.

RULES OF PRACTICE: INTERVENTION; LEAD INTERVENORS

Where intervenors have filed consolidated briefs they may be treated as a consolidated party; one intervenor may be appointed lead intervenor for purposes of coordinating responses to discovery, but discovery requests should be served on each party intervenor. It is not necessary that a contention or contentions be identified to any one of the intervening parties, so long as there is at least one contention admitted per intervenor.

RULES OF PRACTICE: NON-PARTY PARTICIPATION

Non-parties, participating under 10 CFR §2.715(c), need not comply with the requirements of 10 CFR §2.714 that intervenors must either file their contentions in a timely fashion or show cause for their late intervention.

MEMORANDUM AND ORDER Concerning The Status of Ashtabula County And Objections to the Special Prehearing Conference Order

Sunflower Alliance, Inc., *et al.* (Sunflower), Cleveland Electric Illuminating Company, *et al.* (Applicant) and the Staff of the Nuclear Regulatory Commission (Staff) have filed objections to our Special Prehearing Conference Order of July 28, 1981. In addition, the Ashtabula County Commissioners and the Ashtabula County Disaster Agency (Ashtabula) have petitioned for admission as parties participant pursuant to 10 CFR §2.715(c). The purpose of this memorandum and order is to analyze and resolve these motions.

I. OBJECTIONS OF SUNFLOWER

A. Need for Power

Sunflower objects to the exclusion of its contentions regarding the need for power and airplane crash probabilities.

In its motion concerning the need for power, Sunflower now states that it can "conclusively prove the complete absence of need for power from the Perry units by Applicant or its co-venturers." However, we consider this to be an enlargement of Sunflower's previous arguments, as reviewed by us in our Special Prehearing Conference Order at pp. 42-44. We find that an attempt to amend the contention at this stage is inappropriate. Furthermore, even at this stage of the proceeding, Sunflower does not provide a basis for its assertion of a total absence of need for power from the Perry Nuclear Power Plant (Perry). Consequently, we shall consider Sunflower's motion to be a request that this contention, as previously framed and argued, shall be admitted.

Sunflower does not object to the Board's application of collateral estoppel to the need for power issue. However, it argues that there are substantially changed circumstances and that collateral estoppel cannot appropriately be applied to this issue. We disagree. For reasons we stated fully in our prior opinion at pp. 37-48, we do not think the reduction in need for power which Sunflower asserts justifies relitigation of the environmental factors which were weighed by the Commission when it issued a construction permit to Perry. At the operating license stage, changes in the need for power must be sufficiently extensive to offset the environmental and economic costs of construction, which has been authorized and has become a sunk cost. Furthermore, we decided that litigation of this issue would be fruitless because proof of the alleged change in the need for power would not demonstrate the need to refuse to license or condition the license of Perry. Consequently, we saw no reason to admit this issue into the proceeding, and Sunflower has not persuaded us to the contrary.

B. Airplane Crashes

Sunflower asserts that FSAR data on load growth at Lost Nation airport were inadequate and that its contention concerning air crashes should be admitted. However, Sunflower has never provided any basis for believing that load growth at an airport 15 miles removed from Perry should have any effect on Perry's design. This point was more fully explained at pp. 72-74 of our decision and we are not convinced that we were wrong.

C. Tandem Licensing

Sunflower has not persuaded us that it is necessary to divide this proceeding into two at this time. However, as the proceeding draws to a close, Sunflower will be provided with the opportunity to argue that it has pending contentions which must be resolved before the Board can recommend that an Operating License be issued for Perry Unit 2, which is still in early stages of construction. At that time, issues which are unique to Unit 2 will not have been adjudicated and Sunflower will have a full and fair opportunity to prevail on this argument.

D. Other Points

We see no reason to change our opinion with respect to the Commission's jurisdiction over this proceeding. Nor do we see any reason to apologize for calling to Sunflower's attention that our April 9 Order called for two filings and that Sunflower submitted only one. (We called for further particularization of contentions. Sunflower filed a statement of additional contentions but did not further particularize previously filed contentions. We also called for "reasons, supported by legal authorities, why issues included in the petitions should be considered relevant", but Sunflower did not make such a filing.)

We wish to reassure Sunflower that we welcome its participation in this proceeding and do not derogate its potential contribution. On the other hand, these will be tough minded proceedings with difficult scientific and legal issues to resolve. When we set filing deadlines and request that specific briefs be filed, our requests are made in the interest of obtaining potentially valuable assistance in deciding issues correctly. However difficult it may be for Sunflower to marshal its volunteers to fulfill these assigned tasks, we urge it to strain to do so. Sunflower's success in informing the Board of its point of view will depend on its industry in complying fully with the Board's orders.

II. OBJECTIONS OF APPLICANT

A. Emergency Planning

Applicant objects to the emergency planning contention accepted by the Board as Issue #1 on two grounds. First, it objects to the inclusion within the contention of the assertions of Tod J. Kenney. Second, it objects to the breadth and alleged vagueness of the contention.

First, we do not consider Mr. Kenney's petition to be untimely. His initial filing of March 23, 1981, noticed his concern about "emergency

plans". Although he failed to particularize his contentions prior to the conference, we note that he is without counsel. We note also that certain issues which he raised seemed to us to be important safety contentions. Consequently, we are loathe to make any ruling which would deprive this proceeding of his potentially valuable contribution. Mr. Kenney should understand that in the succeeding portions of this proceeding there will be no excuses. [See *Public Service Electric & Gas Co., Salem Nuclear Generating Station* 6 AEC 487, 489 (1973).] We are interested in solid legal and factual argumentation, filed within established deadlines. Only by meeting our requirements will Mr. Kenney be able to demonstrate the validity of his views.

As to breadth and vagueness, our reasons for admitting such a broad (but not vague) contention are adequately stated in our prior order. Intervenor added specificity both in their filings and at the prehearing conference. On the other hand, Applicant's point in footnote 8 to its pleading is well taken: the contention should track the latest version of 10 CFR 50 Appendix E. We also agree that the issue should be limited to emergency evacuation plans. As discovery proceeds, we will expect intervenors, Staff and Applicant to further refine these issues and, where possible, to eliminate matters by stipulation. Issue #1 should read:

ISSUE #1: Applicant's emergency evacuation plans do not demonstrate that they provide reasonable assurance that adequate protective measures can and will be taken in the event of an emergency.

We also wish to clarify some procedural points relating to discovery and admissibility for hearing, both for this issue and for others where we have indicated that intervenors still bear some burden prior to the hearing. First, we urge the parties to meet informally in order to make the discovery process workable. Second, we expect the parties to consider in good faith whether to stipulate that certain facts are genuinely in dispute and should be included in the hearing. Third, if issues where intervenors bear a burden of proof are subject to motions for summary disposition, the responding party will have the burden of going forward to demonstrate that factual issues exist which require a hearing. (To this extent, certain contentions may be thought of as "conditionally" admitted.) To pursue such motions, movant would, of course, retain the ultimate burden of demonstrating that there is no genuine issue of fact with respect to any issue it seeks to exclude from a hearing.

B. Quality Assurance

We affirm our finding that Sunflower made certain general assertions concerning quality assurance and thus provided sufficient basis for a

contention at the Conference. Applicant is correct in stating, however, that the admission of this issue was intended to be limited to the quality assurance implications arising from the stop work order issued to it and the steps taken by it to remedy alleged deficiencies leading up to the stop work order. Sunflower did not provide the basis for any other allegations relating to quality assurance. It will not be permitted to launch a generalized attack on the Applicant's entire quality assurance program. Its license to explore is limited to the stop work order, steps taken to remedy that deficiencies that led to that order, and residual deficiencies related thereto.

Should Applicant move for summary judgment on this issue, Sunflower would need to demonstrate the existence of a genuine issue of fact concerning the existence of unsafe conditions as the result of a quality assurance deficiency.

III. STAFF'S REQUEST FOR CLARIFICATION

A. Status of Lake County

We have admitted the lake County Board of Commissioners and the Lake County Disaster Services Agency pursuant to 10 CFR §2.715. Our listing them as parties should not be interpreted to imply any different status.

B. Status of the Sunflower Alliance

Staff is correct that Sunflower Alliance, Inc., *et al.*, have always filed a consolidated brief and we have no reason to believe that they intend to pursue any other practice. We have treated them as a consolidated party and intend to continue to do so.

C. Lead Intervenors

Staff has requested that we identify for each listed party intervenor the contention or contentions found to be valid for that party. However, we do not find any such requirement in the rules. All that is required is that at least one contention be admitted for each intervenor. Clearly, that has occurred and neither Staff nor Applicant challenge the status of any intervenor.

Staff argues, however, that it is necessary to the orderly conduct of the proceeding for us to identify parties with the contentions for which they are responsible. We have done so. We expect that the lead intervenor will lead in all aspects of the case. Other intervenors will be free to participate

as well, providing that their efforts are not cumulative. We will not permit duplicative arguments, evidence, or examination.

Lead intervenors should, as staff suggests, play a role in coordinating the responses to discovery requests by the Staff and Applicant. Discovery requests should be served on each party intervenor; but the lead intervenor should keep track of progress being made on the interrogatories by each of the parties and should be prepared to discuss procedural questions with the parties or the Board.

IV. ANTICIPATED TRANSIENTS WITHOUT SCRAM

Since the federal register notice about anticipated transients without scram (ATWS) has not yet been issued, we have decided to reserve decision concerning the effect of the rulemaking on the admissibility of this issue. Consequently, this issue is suspended from eligibility for discovery. Under these circumstances, Sunflower Alliance may file its brief on ATWS issues prior to September 30, 1981.

V. STATUS OF ASHTABULA COUNTY COMMISSIONERS

The Ashtabula County Commissioners and Ashtabula County Disaster Services Agency (Ashtabula) have petitioned for admission as party participants pursuant to 10 CFR §2.715(c). Applicant requested that Ashtabula show cause for its late intervention.

We find that 10 CFR §2.714, dealing with intervention, does not apply to §2.715(c) petitions. The requirements for timely filing under §2.714 relate to the filing of contentions by intervenors. Necessarily, contentions must be filed in a timely fashion so that the case may commence and progress may begin to be made on resolving disputed issues. Consequently, §2.714 requires intervenors to make timely filing or to show cause for late filing.

On the other hand, we note that §2.715(c) is contained in a general section dealing with "participation by a person not a party." The first subsection deals with limited participation by individuals who are clearly not required to make timely filings under §2.714. Likewise, §(d) deals with participation amicus curiae by persons who are not parties; and no showing of timeliness is required under that subsection. We find no reason to treat subsection (c) differently.

Consequently, Ashtabula shall be admitted as a non-party participant under §2.715(c).

VI. PROGRESS REPORTS

After reviewing the initial attempts of parties to comply with our order concerning discovery plans, we have decided to rescind our directions.

The problem with which the Board is faced is that the Commission expects us to manage the discovery process in the interest of expedition. However, the early stages of discovery generally are attempts to uncover information and it is particularly difficult at this stage, therefore, to complete a plan with any meaningful content.

After reviewing the alternatives for managing discovery, we have concluded that the most meaningful requirement we could institute at this time would be a bimonthly progress report, commencing on October 15, and continuing with one report every two months thereafter. These reports are expected to be brief, generally less than two full double-spaced pages. They should review the parties' discovery activities during the previous two months, including requests and responses. They also should indicate the parties' plans for requests and responses during the following two months. If appropriate, they may contain a brief section evaluating the discovery schedules of the other parties or a brief section outlining a proposal for expediting discovery.

ORDER

For all the foregoing reasons and based upon consideration of the entire record in this matter, it is this 9th Day of September, 1981

ORDERED

- (1) The objections of the parties to our July 28, 1981 Special Prehearing Conference Order are denied except to the extent that they are granted in this order or that the accompanying memorandum clarified points that were raised.
- (2) Issue #1 shall be rephrased as follows: "Applicant's emergency evacuation plans do not provide reasonable assurance that adequate protective measures can and will be taken in the event of an emergency."
- (3) To the extent that the Special Prehearing Conference Order required intervenors to retain certain specified evidentiary burdens, those contentions may be considered "conditionally" admitted, subject to procedures outlined in the accompanying memorandum.
- (4) The issues admitted into the proceeding shall be interpreted in light of the accompanying memorandum.

- (5) The petitioners who joined in the petition originally filed by the Sunflower Alliance, Inc., shall be consolidated as a single party, to be referred to collectively as "Sunflower".
- (6) Lead intervenors shall assume the responsibilities described in Section III,C., of the accompanying memorandum.
- (7) Sunflower may file a brief on the admissibility of the ATWS issue by September 30, 1981.
- (8) Parties shall file progress reports, prepared pursuant to the accompanying Memorandum, on October 15 and at two month intervals thereafter.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**September 9, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James L. Kelley, Chairman
Elizabeth B. Johnson
Cadet H. Hand

In the Matter of

Docket Nos. 50-361-OL
50-362-OL

SOUTHERN CALIFORNIA
EDISON COMPANY, et al.
(San Onofre Nuclear
Generating Station, Units 2 and 3)

September 14, 1981

The Licensing Board refers to the Appeal Board a Licensing Board order raising on the Board's own motion the issue of possible effects on emergency plans of an earthquake of a magnitude greater than the Safe Shutdown Earthquake at the facility. In connection with the issue raised, the Licensing Board directs the parties to address questions of evacuation time in the event of earthquake damage to highways, per effect of structural damage to possible shelters from a radioactive plume or radioactive particulate debris, and radiation dose estimates in the event of delayed evacuation.

EMERGENCY PLANS: EARTHQUAKE EXCEEDING SSE

In a seismically active area a Licensing Board should consider the possible effects of a very large earthquake on emergency plans. This consideration could involve an earthquake exceeding the SSE and causing a release of radiation while damaging evacuation routes.

REGULATIONS: INTERPRETATION (10 CFR § 2.760a)

Very specific or detailed factual findings are not a prerequisite to *sua*

sponte review of an issue that is a serious safety matter. The Board need only give its reasons for raising the issue.

LICENSING BOARD: SUA SPONTE REVIEW

A Licensing Board may raise a safety issue *sua sponte* when sufficient evidence of a serious safety matter has been presented that reasonable minds would inquire further. Very specific findings are not required since they could cause prejudgement problems.

EMERGENCY PLAN: EMERGENCY PLANNING ZONE

The size of the EPZ has been decided generically and is inappropriate for site specific analysis.

LICENSING BOARD: CONSIDERATION OF GENERIC ISSUES

Size of the EPZ is a generic issue, but other aspects of emergency plans, particularly evacuation routes, are site specific.

REGULATIONS: INTERPRETATION (10 CFR § 50.47(a))

A finding of reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency goes beyond a checklist determination whether a plan meets the standards at 10 CFR §50.47(b).

RULES OF PRACTICE: REFERRAL OF RULING TO APPEAL BOARD

Referral of the earthquake issue in this case is based upon its possible significant ramifications for other cases.

RULES OF PRACTICE: REFERRAL OF RULING TO COMMISSION

Referral directly to the Commission by the Licensing Board will not be

granted absent a strong reason for bypassing the Appeal Board.

**TECHNICAL ISSUES DISCUSSED: EMERGENCY PLAN
MULTIPLE DISASTERS**

**ORDER
(Modifying Prior Orders Concerning
Earthquakes and Emergency Planning
and Referring Such Orders to
the Atomic Safety and Licensing Appeal Board)**

Introduction

On July 29 and August 7, 1981, the Board issued orders on its own motion raising certain issues concerning the possible effects on emergency plans of an earthquake of a magnitude greater than the Safe Shutdown Earthquake determined for the San Onofre facility. We hypothesized the occurrence of such an earthquake with resulting structural damage to the facility, to communications and highways designed as evacuation routes, and with resulting radiological releases at a level sufficient to trigger evacuation of the plume exposure pathway EPZ. In these assumed circumstances, we asked -

... what steps could be taken by the applicants and responding jurisdictions to carry out evacuation in a timely manner and/or protect those in the EPZ pending evacuation? What federal resources, including military resources, could be brought in to assist in this situation, and how would federal assistance be accomplished?

While the quoted language is an accurate general statement of our concerns as they were first developed during the seismic part of these hearings, we believe it would be helpful to particularize further the questions we want the parties to address and the degree of proof we expect on some questions, in light of the record as now developed in the emergency planning part of these hearings.

Board Questions

The situation we have hypothesized reflects our concern that substantial numbers of people might be trapped by the damaged highways in the populated areas of the EPZ¹ and unable to evacuate until after some of them received injurious or lethal doses of radiation. In order to explore this possibility, the Board wishes the parties to address the following questions:

1. **Evacuation time.** Approximately how long might earthquake damage to highways and structures (e.g., bridges, overpasses) delay evacuation, assuming that evacuation is precluded by such damage for some period? This question does require some expert assessment of the kind and extent of highway damage to be anticipated.² But we do not expect, for example, structure-by-structure detailed engineering analyses, or ground motion studies related to particular faults; rough estimates from qualified experts will suffice. In addition, this question will require some rough estimate of speed of repairing or construction of alternate route capabilities available from Caltrans, Camp Pendleton, and perhaps other sources. Might completion of evacuation be delayed by as long as 48 hours from the time the need for it was determined?
2. **Shelter from radiation.** The plans generally prescribe taking shelter to avoid exposure to a radioactive plume or to radioactive particulate debris after the plume passes. The Board assumes that

¹ As initially formulated, our questions assumed "a need to evacuate virtually all of the people in the plume exposure pathway EPZ." In view of the tendency of radioactive releases to travel in plumes and the fact that virtually all of the people in the EPZ live near the coast to the north and west of the facility (except for Camp Pendleton) the parties should focus their attention on what the Applicants have termed the North Sector of the "extended EPZ." See Wilbur Smith and Associates Evacuation Time Study, Revision 2, Figure 7a. Because of the special training and equipment available to residents of Camp Pendleton, it appears that they would be much less vulnerable to radiological injury than civilians in the North Sector.

² In our Order of August 7, we made it clear that we were not exclusively interested in situations where evacuation was entirely precluded by damage to highways. We stated that we did not know what magnitude earthquake would be required to render the highways temporarily impassable. Since then, however, the Applicants have virtually conceded that damage to highways from an earthquake at or below the SSE could take away the evacuation option. Tr. 8346. And we have heard testimony from a Caltrans official concerning the 1971 San Fernando earthquake and its devastating effect on the highways in that area. Tr. 8413-8415. That earthquake was a magnitude M_s 6.3, well below the level proposed by the Staff and Applicants in this case as the SSE for the San Onofre facility. Accordingly, our interest is now focused primarily, if not exclusively, on the case where highway damage does temporarily preclude evacuation.

an earthquake of a magnitude sufficient to cause a radioactive release at the facility and highway damage severe enough to temporarily preclude evacuation would also cause serious damage to many residences and other structures. Again, without undertaking structure-by-structure engineering analyses, the parties should attempt to provide expert gross estimates of the extent of structural damage to be anticipated. Would such damage (a) not effect, (b) seriously impair, or (c) totally destroy the usefulness of many or most structures in the EPZ as a shelter from radiation?

3. **Radiation dose estimates.** Assuming that the evidence will show some substantial delay in evacuation and degraded capability to take shelter, the Board asks the parties to provide an envelope of radiation dose estimates that will result, both in terms of magnitude and numbers of persons effected. Assumed radiation releases should be those postulated in the PWR-2 accident in the Reactor Safety Study, WASH-1400 (NUREG-75/014) and referred to in the affidavit of Brian K. Grimes dated August 4, 1981. In addition, the Board asks the parties for their gross estimates of the acute and chronic radiation effects, including fatalities, that may occur as a result of such exposures. The Board is aware of the controversies surrounding some aspects of the health effects of radiation. It would be both unnecessary and inappropriate for this proceeding to attempt to explore in any depth these essentially generic issues. We ask for gross estimates of health effects only because they are necessary for us to arrive at a reasoned (albeit very approximate) assessment of the risks to people posed by the postulated accident. Assuming that the parties may present differing gross estimates of health effects in prepared direct testimony, such a range may be adequate for our limited purposes. Accordingly, we intend to impose very strict limits on cross-examination, if any, to be allowed on this issue.
4. **Methods of evacuation.** Given the possible radiation injuries that may result from long delayed evacuation by motor vehicle, are effective alternatives available? For example, would it be possible for the able-bodied population to walk safely out of the EPZ (less than five miles for most of those involved) after the plume passes, even though the ground may be contaminated? Presumably, those who are unable to walk could be ferried out by helicopter or other

special vehicles. What are the capabilities of nearby federal military forces in assisting in a timely evacuation?³

Other Issues Concerning the Order

In light of the fact that we are today referring this issue to the Atomic Safety and Licensing Appeal Board for its review, it will be helpful if we state our position on three points that are raised in memoranda from the Applicants and the Staff in opposition to the issue and in support of referral.

So-Called "Multiple Disasters". A "multiple disaster" in this context is a phrase coined by the Applicants to describe the coincident happening of two events that are very unlikely even when separately considered — e.g., a major earthquake near a nuclear power plant and a major radiological emergency arising at the same time, but from independent (non-earthquake) causes. In a prehearing order rejecting this concept, we made it crystal clear that such an exceedingly remote contingency "can be safely disregarded for any regulatory purpose."⁴ Our only concern here is with the more credible event of an earthquake exceeding the SSE which causes a major radiological emergency and also delays evacuation.

We find it necessary to refer once more to this matter only because much of the Applicants' Memorandum in Opposition to the Board's issue, while acknowledging our rejection of the concept, is nevertheless cast as an attack on "multiple disaster" planning. See Memorandum at pp.4, 10-15, 19, 27-28. This may be explained in part by the Applicants' argument (Memorandum at p. 27) that because consideration of an earthquake in excess of the SSE is allegedly beyond our authority, the Board is "*forced to assume* that an earthquake and the release would be coincident events" (emphasis added) — i.e., a "multiple disaster". We are not "forced to assume" anything of the sort. Although the question is not free from doubt, we think that the issue we have raised and now refer is within our authority. But if we are wrong and are later reversed, we will simply drop the issue. Nothing will "force" us to explore our concerns in the wholly unrealistic framework of the Applicant' "multiple disaster" scenario.

³ Col. Jack Wallace, representing the U.S. Marine Corps at Camp Pendleton, testified about plans to evacuate the Camp Pendleton sector of the EPZ. Tr. 9315, et seq. He expressed confidence that the Marines, with their overland vehicles, could also evacuate the rest of the EPZ, if necessary. However, the present emergency plans do not address such a contingency in any detail. Apparently, no in depth consideration has been given to this approach, apart from the general readiness of military forces to render aid in an emergency.

⁴ Memorandum and Order of April 17, 1981, pp. 3-7. A copy of the relevant portion of this order is attached.

Factual Basis for the Board's Issue. Both the Applicant and the Staff question the sufficiency of the factual basis for the Board's issue. Without reference to the seismic record developed in this case, the Applicants find a "total absence of facts suggesting the existence of a serious ... safety issue." Memorandum, pp. 35-36. The Staff does refer to the seismic record, but contends that it is "totally devoid of any factual basis" for the Board's issue. Memorandum, pp. 11-12.

These contentions raise a question about how far a Board must go in the way of analyzing evidence and making detailed findings as a predicate to raising an issue on its own motion. In our Order of July 29, we gave our reasons for raising this issue and concluded with a finding that the issue is a serious safety matter within the meaning of 10 CFR 2.760a. We think that this complies with the Commission's recent directive to the Board on this subject⁵ and that no more is required by 10 CFR 2.760a.

We referred to the Commission's *Vermont Yankee*⁶ decision for the general proposition that successively more conservative accident assumptions may be postulated for different regulatory purposes. The Staff seeks support in that case for a different proposition — that a Licensing Board must establish some unspecified level of factual basis (assertedly absent here), before it can "extend consideration of severe earthquakes in the context of emergency planning." In the first place, *Vermont Yankee* did not involve or speak to the basis a Board must have to raise an issue. Secondly, the case does not support the Staff even inferentially because, as we read it, it deals only with the findings that are a necessary prerequisite to imposition of a regulatory requirement, not to the factual basis, if any, that must precede consideration of whether such a requirement should be imposed.

There are other reasons for holding that very specific or detailed findings are not a prerequisite under 10 CFR 2.760a to Board consideration of the question we have posed. Issues raised on a Board's own motion are necessarily raised at a preliminary stage, hopefully prior to hearing and at least well before initial decision. To force a Board to premature detailed findings on what may be contested issues in order to raise a related issue suggests some serious prejudgment problems, problems we have been at pains to avoid in this case. Beyond that, the whole concept of prior findings — beyond the generalized safety finding required by 10 CFR 2.760a — fundamentally inconsistent with the purpose of *sua*

⁵ Memorandum from the Secretary of the Commission to the Chairman of the Licensing Board Panel dated June 30, 1981, concerning *sua sponte* issues.

⁶ *Vermont Yankee Nuclear Power Corp.*, CLI-74-40, 8 AEC 809 (1974).

sponte Board issues, namely, to find out whether a possible problem affecting the public health and safety requires remedial action.

The foregoing reasons explain why we have not, to date, explicitly predicated our Orders of July 29 and August 7 on analysis and findings based upon the evidentiary record in this case. In fact, however, these orders are supported by evidence adduced during the seismic portion of the hearings conducted between June 22 and August 4, 1981. The Intervenor *Carstens, et al.* put on a substantial case. The general thrust of their position was that the Safe Shutdown Earthquake previously determined and now proposed by the Applicants and the Staff is not sufficiently conservative — i.e., than an earthquake of greater magnitude or one producing more destructive shaking at the site could occur. As illustrative of this evidence, we refer to the testimony of Dr. James Brune (following Tr. 4122), Dr. J. Enrique Luco (Tr. 4976-5036), and Dr. Clarence Allen (Tr. 4725-4733).

Both the Applicants and the Staff also put on substantial cases on these issues and we will be deciding them later in the fall. Our reference to the Intervenor's evidence here should not be read to imply any judgment on these issues at this point. We refer to this evidence to show that we did consider it in raising the issue in question and to refute suggestions that we were acting in a vacuum. We add only that, considered with reference to the issue we have raised, we think this evidence is "sufficient to require reasonable minds to inquire further." *Consumers Power Co. (Midland Plant)*, 7 AEC 19, 32, note 27 (1974), *aff'd sub nom. Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council* 435 U.S. 519, 554 (1978).

Site Specific Accident Analyses. The Staff argues that —

an adequate planning basis is assured by conformance with the Commission's regulations and site specific analyses are not required for the extremely large releases already generically considered in establishing the regulations.

We agree with this argument as it applies to one provision of the emergency planning regulations — establishing a plume exposure pathway EPZ of "about 10 miles," subject to minor adjustments for local conditions. §10 CFR 50.47(c)(2). In this case, we rejected as an impermissible attack on the rule a proposed contention that postulated a need for an EPZ of about twice that size. Tr. 3497-3499.

But many aspects of emergency plans, particularly evacuation routes, are by their very nature site specific. We doubt whether the Commission could prescribe, by rule, a generic emergency plan suitable for all reactor sites, as the Staff's argument seems to suggest. In any event, the Commis-

sion did not try to do that, either in 10 CFR 50.47(b) or in Appendix E to Part 50. Except for the specific 10 mile EPZ, the rule speaks in general terms, such as "adequate" emergency facilities, equipment, methods, systems. §50.47(8), (9). A Board can only judge "adequacy" with reference to levels of risk, some aspects of which vary from site to site. In addition, Licensing Boards are required to make an overall general finding of "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." §50.47(a). Such a finding goes beyond a check-list determination whether a plan meets the standards of 10 CFR 50.47(b). And when, as here, a particular facility is built in a seismically active area, we read the rule as requiring us to consider the possible effects on emergency plans of a very large earthquake.

The Applicants' and the Staff have advanced some other legal arguments against the Board's order which we have considered and with which we disagree. Separate discussion of all these arguments is unnecessary to an understanding of our position and would unduly prolong this order.

Referral of the Board's Rulings

The Applicants have requested us to refer⁷ our orders of July 29 and August 7 to the Commission. The Staff supports that request. We are granting that request, subject to the qualifications noted below.

First, both the Applicants and the Staff mischaracterize the issue, as the Board views it. The Applicants' characterization states that we are acting "without factual basis" and requiring consideration of "multiple disasters." Request for Certification, p.2. As discussed above, neither of these claims has any merit. The Staff's proposed formulation of the issue also seems to contemplate a "multiple disaster" scenario, because it speaks of a "severe natural phenomena" occurring "during" a radiological emergency, implying a lack of causal relationship between the phenomenon and the emergency. Staff Response to Applicants' Request, p. 1.

⁷ Both parties use the term "certify" rather than "refer." The rules appear to contemplate "certification" under 10 CFR 2.718(i) where a board does not first decide the disputed question, and "referral" under 10 CFR 2.730(f) where the board first rules and then requests interlocutory review. Since we have ruled in this case, we are in a referral posture. Except for the fact that the rules and cases speak in these different terms, the distinction appears to be unimportant.

The issue we are referring for review is the issue as we have stated it in our Orders of July 29 and August 7, as further specified in this Order. The basic legal question is whether, in the site-specific circumstances of this case, we are within our authority in postulating an earthquake exceeding the SSE for the San Onofre facility in order to test the adequacy of the Applicants' emergency plans.⁸ The arguments of the parties address this basic question and related issues in detail.

Rulings may be referred where necessary "to prevent detriment to the public interest or unusual delay or expense." 10 CFR 2.730(f). See *Public Service Co. of Indiana* (Marble Hill), 5 NRC 1190, 1192 (1977), and cases cited. In addition, the Commission has recently encouraged referrals "if a significant legal or policy question is presented." Statement of Policy on Conduct of Licensing Proceedings, 46 *Fed Reg.* 28533, 28535.

A hearing on the referred issue need not cause delay, unusual or otherwise, in deciding this case. The Applicants have filed a motion for a fuel loading and low-power license. Such a license would be predicated on a partial initial decision on the seismic issues and a showing of comparative lower risks, for emergency planning purposes, from low-power operations. This means that given the present posture of the case and assuming the Applicants prevail, they could receive a low-power license toward the end of November. On that schedule, they probably would not be ready for full power operations before February, 1982, and perhaps later. In the meantime, we expect to finish the emergency planning hearings, minus the referred issue, in early October, and to be ready to decide those issues in January. This means that if the Appeal Board can decide the legal challenges to the Board's referred ruling by about the end of October, this issue can be heard in a week or so and factored into our decision on all remaining issues without any additional delay.⁹

Nor do we see unusual expense resulting to the Applicants from going to hearing on the Board's issue. They contend that the issue will require them to develop a new emergency plan. But it is premature to speculate about what the Board may require, if anything, in the way of additional

⁸ Arguably our basic question about the adequacy of the Applicants' emergency plans might have been raised in a different way, namely by postulating an earthquake of a magnitude slightly below the SSE which causes a major facility accident and highway damage precluding rapid evacuation. Although there is no issue in this case about the actual integrity of the facility, a Board might hypothesize such a failure for the sole purpose of testing emergency planning capabilities. Although we have not chosen to frame the issue in this way, either approach presumably would raise the planning issues that concern us.

⁹ We sought the views of the parties on whether we should go ahead and hear this issue while the referral was pending, or await the result of the referral. No party took any firm position on the question. Tr. 9387-9392. Given the possibility of reversal and the present demands on our time, the Board intends to await the result of the referral, at least if it will be forthcoming by the end of October.

planning; all we are seeking at this point is information on the dimensions of the risk.

We believe that the Board's issue may have significant ramifications for some other cases. That and the fact that it interprets a newly-adopted, broad regulatory scheme for emergency planning suggests the advisability of early appellate review. We have considerable doubt, however, whether our issue has the sweeping ramifications envisioned by the Staff. Staff Response, pp. 9-10. Since seismic standards are set at some level for all reactors, even in areas not regarded as seismically active, the Staff argues that there are "no distinguishing characteristics which would prevent the application of the Board's approach to all Part 50 facilities." We think this is an unrealistic appraisal of the situation. The San Onofre facility has been constructed in a seismically active area; earthquakes are a serious safety concern. In areas of very low seismicity (much of the United States) presumably no comparable concerns would arise.

The Staff also suggests that regulatory consideration of earthquakes can be equated with other natural phenomena, such as "blizzards, fog, tornados or hurricanes." With the possible exception of fog, it appears that these phenomena could temporarily close an evacuation route. But we question whether they could, at the same time, cause a serious radiological accident at a nuclear power plant. Large earthquakes appear to be unique in their sudden destructive force and therefore to require special regulatory consideration.

In conclusion, both the Applicants and the Staff seek referral from us direct to the Commission, by-passing the Appeal Board. At least prior to the Commission's recent Statement of Policy on Conduct of Licensing Proceedings, it has always been the practice to refer and certify issues from Licensing Boards to the Appeal Board, not to the Commission.¹⁰ In the Policy Statement, however, the Commission did speak of referring or certifying to the Appeal Board "or the Commission."

We are uncertain whether this statement represents a deliberate departure from prior practice and, if so, what standards we should follow in deciding where to refer a ruling. Moreover, we are reluctant to by-pass our immediate reviewing body in the absence of a strong reason for doing so. Accordingly, we are denying this aspect of the Applicants' request and referring our ruling to the Appeal Board. However, since this is an issue raised on the Board's own motion, we are, as instructed, serving a copy of

¹⁰ Although the rules, 10 CFR 2.718 and 730 refer to the "Commission," the Commission's functions under those rules are delegated to the Appeal Board by 10 CFR 2.785(b)(1).

this Order on the General Counsel and the Commissioners. The Commission can, of course, take up this matter at any time on its own motion.¹¹

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

**James L. Kelley, Chairman
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland
this 14th day of August 1981.**

Attachments:

- 1. List of Documents**
- 2. Portion of Licensing Board Order dtd 4/17/81**

¹¹ Strictly speaking, there is no "record" underlying these rulings. Attached hereto, however, is a list of documents in this case which bear directly on the questions presented and which may be helpful to the Appeal Board.

**List of Documents
Relating to the
Licensing Board's Referred Issue**

Title	Date
Board's Memorandum and Order (Ruling on Motion for Protective Order)	April 17, 1981
Applicants' Memorandum of Law Opposing any Exercise of ASLB Authority ...	June 22, 1981
NRC Staff Views ... in the Area of Emergency Planning	June 22, 1981
Intervenor GUARD's Comments Concerning Emergency Planning	June 23, 1981
Intervenor Carstens' Comments Concerning Emergency Planning	June 22, 1981
Board Order (Raising on the Board's Motion an Issue Concerning Earthquakes and Emergency Planning)	July 29, 1981
NRC Staff Comments on Board's Order of July 29, 1981	August 4, 1981
Board's Order (Modifying an Issue Concerning Earthquakes and Emergency Planning)	August 7, 1981
Applicants' Request for Certification to the Commission and Accompanying Memoranda in Support	August 17, 1981
NRC Staff's Response to Applicants' Request for Certification	August 31, 1981

**Portion of
Licensing Board Order
dated April 17, 1981**

[page 3]

that approach when a case can be allowed to proceed in a leisurely fashion, it is certainly outweighed by the resultant delay where, as here, construction is almost complete and efforts are being made to conclude discovery so that the case can go to hearing.

To alleviate this delay problem, objecting parties are directed from now on to notify the Board Chairman's office by telephone if they intend to file an answer to a motion to compel. If no such message is timely received, the Board will proceed to rule on motions to compel as soon as practicable following their receipt. Beyond that, the Board is considering other measures it might adopt to expedite the remaining discovery in this proceeding, including the elimination of answers to motions to compel. Such measures will be discussed at the upcoming prehearing conference.

In the present circumstances, however, the Board has considered the Applicants' motion for protective order and reconsidered each of the pertinent rulings in our April 8 Order. For the reasons that follow, The Board declines to change its April 8 rulings, except in the few minor respects noted below.

Earthquakes and Emergency Planning. The Order of April 8 expressed the Board's tentative conclusion that the effects of earthquakes should be factored into emergency plans under 10 CFR 50.47 and Appendix E. We accordingly directed the Applicants to answer FOE's interrogatories about earthquake effects.

The Applicants' motion is largely devoted to presentation of their position that they have:

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"... no legal obligation under applicable NRC regulations to fashion plans to consider or mitigate the consequences of a major earthquake on the capability of Applicants and offsite assistance

agencies to respond to a radiological emergency at SONGS 2 and 3." Motion, p. 5

We stated in the April 8 Order and we repeat here, for emphasis, that our present rulings on legal issues "are for purposes of discovery only, and are without prejudice to their subsequent reconsideration." At the upcoming prehearing conference we intend to call for briefs from the parties on several legal questions, including this one, that need to be addressed and decided before the hearing. In these circumstances, therefore, we will not speak to each of the points advanced in the Applicants' lengthy legal argument. Suffice it to say that they have not yet changed the Board's tentative view that possible earthquake effects are at least relevant to emergency planning, and may require that additional precautions be taken. It may be helpful, however, to discuss briefly two considerations that are influencing the Board's present thinking on this difficult legal question.

First, throughout their argument, the Applicants cast the earthquake-emergency planning issue in terms of whether they must engage in "multiple disaster" planning. As they acknowledge, neither that phrase nor any analogous term is used in NRC regulations. Motion, p. 2, note 1. The Applicants' definition of a "multiple disaster", as we understand it, can be roughly paraphrased as the simultaneous occurrence of a major earthquake (or other rarely

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occurring disaster² and a radiological emergency at the reactor arising from other causes. They characterize a "multiple disaster," so defined, as "relatively improbable". *Id.* We would go much further. Without in any sense questioning the need for guarding against the event, and whatever the mathematical odds may be, one can say that the likelihood of a major radiological emergency with serious offsite effects at a particular nuclear power plant is "relatively improbable." Similarly, even in a seismically active area, one can say that the chances of a major earthquake's occurring in the forty-year life of a nuclear plant and disrupting key elements of its emergency plan is "relatively improbable." That both of these "relatively improbable" events would occur *at or about the same time*—the Applicants' "multiple disaster"—seems virtually inconceivable.

² We confine this discussion to earthquakes for the sake of simplicity and because earthquakes appear to have the greatest potential for major damage to a reactor.

Such a remote contingency can be safely disregarded for any regulatory purpose.³

The Board's present concerns about earthquake effects arise not from "multiple disaster" scenarios, but from the possibility that a major earthquake might cause a radiological emergency at the site

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and also extensive damage to offsite transportation, communications and the like. One might respond that such concerns suggest an impermissible attack on the rules because they postulate an earthquake exceeding the "Safe Shutdown Earthquake" the facilities have been designed to (and, by hypothesis, will) withstand. In this connection, the Applicants express their opposition "to use of any 'earthquake' which exceeds the 'Safe Shutdown Earthquake' established for SONGS 2 and 3 for any regulatory purpose related to this proceeding." Motion, p. 3, note 2.

Which brings us to the second matter we wish the parties to consider. It is true as a general proposition that the Commission's rules are not subject to attack in adjudicatory proceedings. 10 CFR 2.758. Once an Applicant shows, for example, that its facility has been designed to withstand the applicable Safe Shutdown Earthquake, an effort to postulate a more severe earthquake for design purposes would be foreclosed as an impermissible attack on the rules. But it does not necessarily follow that the accident assumptions contained in or underlying one safety rule are also applicable to other safety rules. As the former Atomic Energy Commission stated in *Vermont Yankee Nuclear Power Corp.*, 8 AEC 809, 812 (1971):

"Thus, the accident postulated in the ECCS criteria need not necessarily be regarded as the accident to be postulated for containment design purposes. Rather, as shown in our discussion of defense-in-depth ... the use of successively increasing conservatism in postulated accidents contributes an added measure of protection to the public health and safety."

Were the *Vermont Yankee* principle to be found applicable in the present case, the earthquake hazards found to exist for SONGS design purposes

³ Conceivably, there are other natural disasters whose rate of frequency may be such that to postulate their happening concurrently with a radiological emergency would not be so far-fetched.

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might not necessarily be the maximum hazards to be postulated for emergency planning purposes. Whether that principle should apply here might depend on the various factors, such as the different purposes to be served by the two rules, and comparative costs involved in design changes and emergency plans.

In addition to their legal argument, the Applicants now contend that FOE's earthquake interrogatories are not within its emergency planning contention admitted for discovery purposes. The thrust of that contention is toward coordination of emergency plans; earthquakes are not mentioned.

The Board agrees that FOE's emergency planning contention does not encompass its earthquake questions. Neither, for that matter, do the GUARD contentions. However, the Board has the authority to inquire into a matter on its own motion when it concludes that a serious safety issue is presented. 10 CFR 2.760a. See also *Consolidated Edison Co. of New York* (Indian Point, Unit 3), 8 AEC 7, 9 (1974). The Board has not yet reached such a conclusion in this instance. We believe, however, that a serious question may be presented and that the answers to the FOE earthquake interrogatories will assist us in determining whether to pursue these concerns further.

There does not appear to be any question of undue burden on the Applicants in requiring answers to FOE's earthquake questions. From what has been said on the subject, we gather that a simple "no" will answer most of these questions. Accordingly, Applicants are directed to answer FOE interrogatories 1-22 and 77(b). Upon reconsideration, it appears that the NRC Staff is in a better position to respond to

[end]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**John F. Wolf, Chairman
Dr. Linda W. Little
Dr. Forrest J. Remick**

In the Matter of

**Docket Nos. 50-237-OLA
50-249-OLA
(Spent Fuel Pool Modification)**

**COMMONWEALTH EDISON COMPANY
(Dresden Station, Units 2 and 3)**

September 24, 1981

Acting upon the motion of Applicant, the Licensing Board issues a Partial Initial Decision modifying the operating license of Dresden Unit 3 to permit the installation of five high-density spent fuel storage racks and the withdrawal of thirteen of the present spent fuel racks. The modification to permit the use of five high-density spent fuel pool racks in connection with the required January 1, 1982 fuel octage will be less risky and less costly than any of the possible alternative methods available to meet the requirement.

APPEARANCES

**David Stahl, Esq., Philip Steptoe, Esq., and Robert Fitzgibbons,
Esq., for the Commonwealth Edison Company, Applicant.**

**Richard J. Goddard, Esq., and Charles A. Barth, Esq.,
for the Nuclear Regulatory Commission, Staff.**

**Susan N. Sekuler, Esq., and Mary Jo Murray, Esq.,
for the Intervenor, the State of Illinois.**

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**PARTIAL INITIAL DECISION
Modifying Operating License
to Permit Installation
of Five High-Density
Spent Fuel Storage Racks
at Dresden Unit 3**

I. Preliminary Statement

1. This partial initial decision is issued in response to Commonwealth Edison Company's ("Applicant's") motion for a partial initial decision modifying the operating license to permit at Dresden Unit 3 installation of five high-density spent fuel storage racks and the withdrawal of thirteen of the present spent fuel racks. The Applicant has pointed out that time is of the essence regarding the Board's response to the motion since Dresden Station must begin to shift fuel to prepare for the required forthcoming refueling outage no later than September 21, 1981 unless applicants five rack proposal is approved by that time.¹

2. At the time the motion, dated August 13, 1981, was filed seeking a partial initial decision and approval of the 5 rack project, the Board had before it Commonwealth's application for amendments of the operating license for Dresden Station Units 2 and 3 relating to the modification of the spent fuel pools. The Applicant sought to install new storage racks whereby the storage capacity of the spent fuel pools would be increased from 1400 fuel assemblies for Dresden Unit 2 pool and 1420 fuel assemblies for Dresden Unit 3 pool to 3537 fuel assemblies for each pool.

¹ There appears to be some flexibility in date for starting to shift fuel to prepare for the forthcoming refueling outage. Certain NRC commitments arising in the wake of the Three Mile Island Unit 2 accident must be satisfied by January 1, 1982 or the Dresden Units 2 and 3 will be shut down. Applicant is shutting down on that date to meet that requirement. (Tr. 1030-31.) During the shutdown a number of corrective modifications will be made to the feedwater system. (Tr. 1027-1028.) To accomplish the modifications during the projected refueling outage period, the Applicant states that it must be able to accommodate the fuel core discharge by January 1. (Tr. 1029.) To meet that deadline Applicant contended at the September 11, 1981 hearing that rack removal and installation processes must begin by September 21, 1981 (Tr. 1044) and added that if the January 1, 1982, outage date is not met the resulting additional shutdown beyond the scheduled outage would cost Applicant one half to one million dollars per day (Tr. 1045). The Applicant also contends that if the 5 rack proposal is not adopted, the only available alternative would be to transfer fuel from the Unit 3 pool to Unit 2 pool. This procedure would result in an occupational exposure of about 19 man-rem. It would also entail risks involved in moving heavy loads on the refueling floor. (Testimony of Robert F. Janecek (Janecek, Five Rack Testimony) following Tr. 1021, at pp.10-11; Tr. 1025-27.)

3. Notice of the proposed amendments was published in the Federal Register on August 11, 1978 (43 Fed Reg 35763). In a notice of hearing dated March 29, 1979, the Board granted the State of Illinois' ("Intervenor") petition to intervene.

4. Evidentiary hearings were held in Morris, Illinois from November 19, 1980 through November 21, 1980 and in Chicago, Illinois on April 20, 1981. However, issuance of a decision is being withheld pending receipt of answers to a Board Notification, dated May 20, 1981 raising questions regarding the effect, if any, of a seismic occurrence on the Dresden 2 and 3 spent fuel pools.² The NRC Staff ("Staff") subsequently requested the Board not to issue a final initial decision pending Staff's review of this issue.³ Answers to the seismic question are expected during the course of the next two months.

5. The Board deems it possible that the seismic answers may have to be reflected in some of the Findings of Fact. It is for this reason that the Partial Initial Decision sought by the Applicant in a motion, dated July 24, 1981, was not granted.

6. The seismic questions raised by the installation of the five storage racks have been answered by Applicant. The Staff supports approval of installation of 5 racks. However, the Staff has asked that the Board withhold, pending further analysis, a decision on the requested license amendments, i.e., installation in each pool of 33 high density storage racks to increase the storage capacity of each pool to 3537 fuel assemblies. Questions are yet to be answered regarding the effect of the installation of 33 storage racks on the stability of the pool structures during a possible seismic occurrence.

7. The NRC Staff response to Applicant's Motion for a Partial Initial Decision, dated August 13, 1981 stated:

"On July 24, 1981, Licensee moved the Atomic Safety and Licensing Board for a partial initial decision in the captioned proceeding. As stated therein, the NRC Staff does not object to the issuance of a partial initial decision on all issues not affected by Board Notification (BN-81-10), dated May 20, 1981. Licensee subsequently, on August 10, 1981, requested that the NRC Staff analyze proposals to install five of the proposed racks (Enclosure 1). The Staff has completed its analysis of this proposal (Enclosure 2) and has concluded that the installation of five racks

² The full history of this proceeding will be set forth in the Board's final Decision which will not issue until resolution of the seismic issue.

³ Letter dated June 29, 1981, to Board Members from Gus C. Lainas, Assistant Director for Safety Assessments, Division of Licensing, USNRC.

posed no safety issue. Therefore, the Staff would not oppose an Order of the Licensing Board authorizing the installation of five racks, upon issuance of the requested partial initial decision, deferring its order on the installation of the remaining racks."

8. NRC Staff's technical experts testified in favor of the "five storage rack project."⁴ The Intervenor, the State of Illinois, filed a response opposing Applicant's Motion. The reasons stated for its opposition were not persuasive.

9. At the close of the hearing on September 11, 1981 on Applicant's Motion for a Partial Initial Decision Approving Installation of Five Racks, the Board orally granted the Motion in part and denied it in part. It summarized orally the relevant Findings of Fact and announced that it would subsequently issue a written order.

10. A representative of the NRC Staff stated on the record that it took issue with the Board's decision that a partial initial decision need not be made. He cited 10 CFR 2.760(c) and stated that 10 CFR 2.730 does not affect 2.760(c). Another staff representative questioned the Board's procedural decision.⁵

11. After the hearing on Friday September 11, 1981, it was clear from the record that the "5 rack project" should be approved. However, since the Board's oral order was questioned by Staff Attorneys, it was determined that the Board's order would be issued in the form of a partial initial decision. This conclusion was reached in order to avoid a waste of time over a procedural matter. Such wasted time would increase the outage time at great expense to the Applicant and the consumers. Further, other methods of accommodating the required fuel discharge, i.e., alternatives to the action sought, would increase the occupational exposure and would not avoid the additional outage time and expense.

12. On Monday September 14, 1981, in a telephone conference the Chairman of the Board advised counsel to the parties in this matter of the form its order would take.

II. Findings of Fact

13. Following the first two hearing sessions, on the application to modify the spent fuel pools at Dresden Station, proposed findings of fact were submitted by Applicant, Staff and Intervenor. In many instances,

⁴Tr. pp. 1127 et seq.

⁵Tr. 1183-84; Tr. 1188-90.

Applicant's proposed findings were adopted by the NRC Staff and Intervenor. The Board has evaluated all proposed findings by the parties. It has relied on those findings in part in preparing this decision.

A. Board Questions

14. Board Questions 1 and 2 were the subject of extensive testimony during the proceeding.

Board Question No. 1 asks:

- A. What is the current status of the spent fuel unfilled storage capacity at Dresden Station Units 2 and 3?
- B. When will full core discharge no longer be possible?
- C. When will normal refueling discharge no longer be possible?
- D. What alternatives, if any, exist to shutting down the Unit(s) when the spent fuel pool(s) is (are) filled to capacity?
- E. Which, if any, of these alternatives would require subsequent license amendments?

Board Question 2 states:

Based on a review and analysis of the various generic unresolved safety issues under continuing study, what relevance is there, if any, to the proposed spent fuel pool modification? Further, what is the potential health and safety implication of any relevant issues remaining unresolved?

15. Board Questions 1 and 2 are not addressed in this partial initial decision. Board Questions 4 and 10 deal with those aspects of Board Questions 1 and 2 which are applicable to the installation of five racks. Consequently, the full discussion of Board Questions 1 and 2 is reserved for the Board's final decision on the installation of 33 racks.

16. At the hearing session of September 11, 1981, the Applicant and Staff presented testimony of eight additional Board questions (Board Questions 3-10) relating to the request by Applicant to permit installation of five high-density racks prior to the final resolution of the seismic issue identified by the Staff (i.e., the issue which led the Staff to request the Board to defer issuing a decision on installation of 33 racks). Intervenor

State of Illinois participated in cross-examination. The Board did not direct the parties to present proposed findings on this narrow issue nor have the parties chosen to file any.⁶

17. Board Question 3 asked:

What is the history and current status of the seismic issue which led to Board Notification BN-81-10, dated May 20, 1981?

18. Robert F. Janecek testified on behalf of the Applicant. Kenneth S. Herring testified for the NRC Staff (Staff).⁷

19. The seismic issue was identified during Staff's performance of the Systematic Evaluation Program (SEP), Topic IV-1 assessment of the Dresden 2 and 3 spent fuel pools (SFPs) with high density racks. Unlike the racks currently in use, the proposed racks are free-standing, rather than attached to the SFP structure. In the course of the SEP assessment it was discovered that Applicant had not evaluated certain motions of the racks, i.e., rocking and tipping, during postulated seismic events. Consequently, Applicant was directed to provide information to demonstrate compliance of the proposed SFP modification to show

"that any sliding and tipping motion will be contained within suitable geometric constraints such as thermal clearances, and that any impact due to the clearances is incorporated."⁸

20. Staff witness testified that the major problem delaying resolution of this issue is the lack of adequate demonstration, by detailed nonlinear dynamic analysis, that the SFP floor can withstand the impact loads which would be imparted by the installation of all 33 proposed racks should they rock (tip) during seismic events.⁹

21. Staff notified Applicant in April, 1981, of the need for further analysis of this issue, as well as of an error in the Licenseng Report (Applicant Ex. 2) on minimum spacings between racks and between racks and pool walls. The Staff issued Board Notification BN-81-10 on May 20, 1981.¹⁰ Since April, 1981, Staff and Applicant have joined in extensive

⁶ 10 CFR 2.754(a).

⁷ Testimony of Robert F. Janecek (Janecek, Five Rack Testimony) pp. 1-4 following Tr. 1021. Testimony of Kenneth S. Herring (Herring) on Board Question 3, following Tr. 1134.

⁸ Herring at p. 2.

⁹ Id.

¹⁰ Janecek Five Rack Testimony at p. 2.

analysis of the seismic issue.¹¹ All of the Staff concerns detailed in BN-81-10 have been resolved with one exception, the potential stresses on the pool structures during an earthquake should all racks tilt up and fall back simultaneously. Staff and Applicant have disagreed as to the likelihood of such an event and as to the appropriate analytical methods which should be used to calculate uplift and impact energy of the tilted racks.¹² Because of the complex calculations required, coupled with time constraints in regard to preparation for pool reracking, the Applicant requested the Staff to inform it as to what assumptions would provide sufficient conservatism for impact analysis of five racks. Applicant then performed this analysis,¹³ upon which Staff approved the limited five-rack proposal.¹⁴

22. The second phase, which will require further lengthy and complex calculations, will be to demonstrate the adequacy of the installation of all the high density racks in the SFP's.¹⁵ On receipt and review of this analysis, the Staff will issue a supplement to the SER containing its evaluation of the 33-rack full reracking proposal.¹⁶

23. Board Question 4 asks:

Is the current seismic question related to Board Question 2 on Unresolved Safety Issues, or is it a separate issue related to the Staff's Systematic Evaluation Program (SEP)?

24. Witnesses for both Staff and Applicant testified that the current question is not related to any Unresolved Safety Issue but rather to perceived inadequacies in Applicant's Licensing Report identified as a result of the Staff's SEP. The question must be resolved to ensure compliance with the criteria against which the proposed 33-rack installation was initially reviewed.¹⁷

¹¹Id. at pp. 3-4.

¹²Id.

¹³Seismic Analysis for Installation of Five and Ten High Density Fuel Racks, by letter of T. J. Rausch, dated August 10, 1981.

¹⁴NRC Staff Response to Applicant's Motion for a Partial Initial Decision dated August 13, 1981; Janecek Five Rack Testimony at p. 4.

¹⁵Herring at p. 3.

¹⁶Tr. 1152.

¹⁷Janecek Five-Rack Testimony at p. 5; Tr. 1135.

25. Board Question No. 5 asks:

What specifically is being proposed for Board consideration?
For example:

- A. What size racks are being proposed for installation (i.e., 9×10 or 9×13 arrays)?
- B. Are there any special risks associated with fuel of rack (old or new) movement which are different than previously testified to?
- C. What will be the disposition of the removed racks?

26. The Applicant proposes to install five new 9×11 array storage racks in the northernmost part of Unit 3 pool. To make space for these racks thirteen existing racks will be removed from the north end of the pool.

27. The installation of five new racks and the removal of thirteen existing racks will result in a net increase in storage capacity of 235 spaces. Because the Unit 3 pool is presently 104 spaces short of full core discharge capability (FCDC) the proposed installation of five racks will reestablish FCDC for the January 1982 shutdown.¹⁸

28. The only special risk associated with the two-step installation (five racks followed by twenty-eight versus thirty-three at one time) is an additional exposure of less than one-half man-rem associated with approximately 650 additional fuel moves required.¹⁹

29. The racks removed from the pool will be decontaminated by rinsing or hydrolazing, then stored temporarily in the Dresden Unit 1 fuel building. Some of these racks may be shipped to the Quad Cities Nuclear Station for further use. The remaining racks which have been removed may be either shipped whole or shredded to reduce their volume and then shipped to a burial site. Additionally, a method of chemically cleaning the racks to remove surface contamination is being investigated. If successful, the decontaminated racks may then be sold as scrap.²⁰

30. Board Question 6 states:

Compare the relative accuracy of Method I and Method II for calculation of responses of the spent fuel pool and rack structures to seismic stresses.

¹⁸Janecek Five-Rack Testimony at p. 6; Tr. 1135.

¹⁹Janecek Five-Rack Testimony at p. 7; Tr. 1135-36.

²⁰Janecek Five-Rack Testimony at p. 7; Tr. 1023-25.

31. Method I and II²¹ are approximate methods for determining impact energy which use an energy balance approach as a substitute for non-linear time-history analyses. The response of the spent fuel pool racks and structures to a seismic event is a complex phenomenon. It is extremely difficult to discuss the accuracy of either Method I or Method II for the calculation of seismic responses.

32. In Method I, the angular velocity is computed by equating the restoring moment of the tilted rack to the product of its moment of inertia and the angular acceleration. The degree of conservatism in the application of Method I is difficult to estimate.

33. Method II assures that all of the potential energy of the uplifted rack is transformed into the kinetic energy of vertical impact. This method is conservative for assessing the effects of a half cycle of impact. Unrealistic motion is assumed in the application of Method I.

34. Given the conservatism thought to be inherent in Method II, the margins in the rack and pool structures calculated by the Applicant through applying Method II for the five rack case, and consideration of the lesser seismic hazard specified for Dresden 2 by the SEP site specific spectra, there is reasonable assurance that the integrity of the rack and pool structure will be maintained, given the occurrence of an SSE, without the necessity for comparing the relative accuracy of the two methods utilized or for further quantitation of the uncertainties of the methods.²²

35. Board Question 7 asks:

What evidence, if any, already received into the record in the context of replacing all racks should be revised, struck or otherwise modified in the context of the proposed installation of five racks?

36. Little evidence, already received into the record in the context of replacing all racks in both pools, will need to be revised in the context of the proposed installation of five racks. Revisions include those relating to the date when Full Core Discharge Capability will be lost, the number of racks being installed and thus additional fuel storage capacity, additional fuel movements, and additional occupational exposure.²³ The necessary revisions are not significant and have been incorporated in this Partial Initial Decision, where applicable.

²¹ Methods I and II are methods for calculating the kinetic energy of an uplifted storage rack upon its impact with the pool floor. Applicant's Ex. 4; Staff Ex. 2.

²² Testimony of Dr. Quazi A. Hossain following Tr. 1071; Response to Board Question 6 by Kenneth S. Herring following Tr. 1138.

²³ Janeczek Five-Rack Testimony at pp. 7-8; Tr. 1139.

37. Board Question 8 asks:

Will Applicant's previous commitments and/or proposed license conditions, made in the context of replacing all racks, be applicable in the context of the installation of five racks? For example:

- (a) Quality receipt inspection procedures
- (b) Handling of loads over stored fuel
- (c) Corrosion surveillance program
- (d) *In-situ* neutron attenuation tests
- (e) Removal of rack if more than one Boral plate is found missing
- (f) Plug gauge testing and lead-in clip grinding

38. All commitments and/or proposed license conditions, made in the context of replacing all racks in both pools, will be applicable in the context of the installation of five racks in Dresden Unit 3 spent fuel pool.²⁴

39. In addition to the six commitments or conditions listed, the condition that fuel stored in the spent fuel pool shall have a U-235 loading less than or equal to 14.8 grams per axial centimeter is also applicable. This condition and related technical specification was presented in the context of replacing all racks, but is also applicable to the installation of five racks.²⁵

40. Board Question 9 asks:

Is there any possibility that the resolution of the currently unresolved seismic issue could result in need for removal of the five high density racks and reinstallation of the current racks, i.e., in reversal of the decision being sought?

41. Witnesses for both Staff and Applicant testified that they saw no possibility that the old racks would ever be installed in place of the five new racks since it has been fully demonstrated that the pool floor can

²⁴Janecek Five-Rack Testimony at p. 9; Tr. 1139-41.

²⁵Staff Ex. 1, Safety Evaluation Report at p. 3; Tr. 1186-88.

withstand the impact of five racks. In the unlikely event that they had to be removed, they could be.²⁶

42. Board Question 10 asks:

What alternatives to the proposed installation of five racks are available to the Applicant to achieve the proposed full core discharge capability (FCDC)?

43. Applicant's witness presented testimony, with which Staff concurred, that the only available alternative is to transfer fuel from the Unit 3 pool to the Unit 2 pool using GE IF-300 Casks. This operation would result in an occupational exposure of about 19 man-rem (compared to less than half a man-rem for installation of five racks) and involve movement of heavy loads on the refueling floor. Further, the fuel would eventually have to be transferred back to the Unit 3 pool if new racks are eventually approved for the Unit 2 pool.²⁷

44. Applicant has considered transferring fuel from the Unit 3 pool to the GE-Morris facility, but it does not have a contractual agreement with GE-Morris for either permanent or temporary storage. Furthermore, there would be no advantage to this transfer since it is unlikely that GE-Morris would permit permanent storage.²⁸

45. Intervenor raised the possibility of putting on additional shifts in order to transfer fuel between pools more rapidly, so that installation of the five racks could be delayed beyond September, 1981.

46. The Staff could see no reason to get involved with this question, considering schedule arrangements made by Applicant in carrying out its licensed activities as not a matter of concern as long as these activities are performed safely and in accordance with its license and applicable NRC regulations.²⁹

47. The Board finds that the installation of five high density racks is the best available alternative for achieving full core discharge capacity for Unit 3.

²⁶Janecek Five-Rack Testimony at pp. 9-10; Tr. 1141.

²⁷Janecek Five-Rack Testimony at pp. 9-11; Tr. 1027; Tr. 1142-43.

²⁸Tr. 1025-26; Tr. 1142.

²⁹Tr. 1163-64.

B. Criticality Analysis

48. A criticality analysis was performed on the proposed storage racks. It is contained in the Applicant's Licensing Report.³⁰ Since criticality is related to the geometry of the fuel assemblies in the racks, such analysis is applicable to the high density racks, whether five or 33 are at issue.

49. The proposed storage racks consist of a vertical array of rectangular stainless steel tubes welded together at the corners to form a checkerboard pattern. Spent fuel is stored within the tubes and in the spaces between tubes (inter-tube) formed by the checkerboard pattern. There are four neutron-absorbing Boral plates within each stainless steel tube, one on each side.³¹

50. For full reracking two sizes of racks have been designed to provide the additional storage. The size applicable to the instant "5-rack" modification will store 99 fuel assemblies in a 9×11 array. The other will store 117 in a 9×13 array. Full reracking, if permitted, will use 18 racks with a 9×11 array and 15 racks with a 9×13 array making a total of 3537 storage spaces for each generating unit. Each rack has a checkerboard pattern with an absorber tube at each corner. The tubes are made by Brooks and Perkins Company.³² The checkerboard pattern is unlike that of the Applicant's Zion absorber racks which have a neutron absorbing tube for each storage position. The minimum boron-10 content of the Boral plates in both the Zion and the Dresden racks is 0.02 gm/cm.² However, BWR fuel assemblies such as those used at Dresden are much smaller, contain fewer fuel rods and have lower enrichment than the PWR assemblies used at Zion. Dresden fuel assemblies will be limited by Technical Specifications to less than half the U-235 content authorized for Zion fuel.³³

51. The effective multiplication factor, K_{eff} , is a measure of how close an array of fuel assemblies is to being a self-sustaining nuclear chain reaction. When K_{eff} is equal to 1.00, the reaction is self-sustaining (that is, "critical"). The proposed racks are designed to keep K_{eff} in the spent fuel pool below 0.95 in accordance with the NRC Standard Review Plan and ANSI Standard N18.2. The limit of 0.95 is an important criterion. If K_{eff}

³⁰ The Licensing Report was prepared by Applicant's architect engineer, Nuclear Service Corporation (NSC). The document introduced as Applicant's Ex. 1 was revision 4 of the Licensing Report. Subsequently, revision 5 of the Licensing Report was submitted to show the location of the vents in the storage tubes. Tr. 466-91, 495-97, 499-500, 584-97.

³¹ Applicant's Ex. 1, pp. 3-1, 3-30; Tr. 467.

³² Applicant's Ex. 1, pp. 3-6; Tr. 478.

³³ See *Commonwealth Edison Company* (Zion Station, Units 1 and 2), LBP-80-7, 11 NRC 245, 269, 273, 279-80, 295 (1980); Affirmed ALAB-616, 12 NRC 419 (October 2, 1980); NRC Staff Ex. 1, Safety Evaluation at p. 3; Tr. 467-68.

becomes equal to or greater than 1.00 in the spent fuel pool a criticality accident with serious consequences could result. Maintaining K_{eff} below 1.0 is important in a spent fuel pool because there are no control rods in the pool to stop the chain reaction.³⁴

52. The Applicant's criticality calculations conservatively assume that the fuel is clean (i.e., no fission products), there has been no fuel burn-up and there is no burnable poison gadolinia remaining in the fuel.³⁵

53. Subcritical multiplication experiments could be conducted during the full reracking of fuel in the Dresden 2 and 3 spent fuel pools. However, there is no indication in the record that this would be done, or that it should be required.³⁶ At any rate, it is not applicable to the "5 rack" modification.

54. Applicant has made a commitment to conduct an in-pool neutron-attenuation test of a sufficient number of storage locations to ensure to a 95% confidence level that no more than 1 Boral plate out of 32 is missing. If one plate is found missing, the tube location (but not the adjacent inter-tube storage location in the checkerboard pattern) will be blocked to prevent insertion of a fuel assembly. Further, every tube in the pool then would be subjected to the neutron attenuation test.³⁷

55. Applicant's Licensing Report shows that K_{eff} would be more than 0.95 if more than one out of thirty-two Boral plates is missing. Therefore, the Board was concerned that, if more than one Boral plate is missing out of thirty-two, blocking the associated storage tube might not be a sufficient measure to maintain K_{eff} less than 0.95. The opinion of Applicant's witnesses was that the decrease in reactivity would be much more than the increase in reactivity due to the missing plate. However, no specific

³⁴ Applicant's Ex. 1, pp. 3-9; Tr. 473-77; 586-88. In boiling water reactors such as Dresden 2 and 3 the spent pool water is unborated. While it might be possible to pump boron into the pool from a remote location, there are no existing procedures to do so. Tr. 587, 593.

³⁵ Tr. 469, 473, 585-86, 591-93.

³⁶ Tr. 591-93. The Board takes notice of the fact that reracking of the spent fuel would provide an excellent opportunity to conduct a subcritical multiplication experiment, from which K_{eff} for fuel in the storage racks, as built, could be readily determined. The results could assist in determining the magnitude of conservatism in calculated versus the actual value for K_{eff} . This should be of interest to the Applicant. Such data also might assist the Staff in its evaluation of calculations for future fuel storage proceedings.

³⁷ NRC Staff Ex. 1, Safety Evaluation at p. 3; Pickens at p. 16. To achieve a 95% confidence level, 63 tubes would have to be checked. However, because Applicant's contract with the testing contractor requires that a minimum of 300 tubes must be checked per visit to the station by the contractor, a higher confidence level will be achieved. Tr. 227-29, 483-84, 495-97. In subsequent testimony in the hearing on the installation of five racks, it was indicated that the Applicant is charged for a minimum of 300 tubes for each visit and more than 63 tubes may be checked during each visit. Janecek Five Rack Testimony at p. 9.

analysis of this situation had been conducted. Therefore, Applicant modified its commitment to the Board to provide that, if more than one missing Boral plate is detected, Applicant will remove the racks containing such additional missing plate of plates from the pool. Such racks will not be replaced in the pool until a specific criticality analysis of the situation showing that K_{eff} will not exceed 0.95 has been submitted to and approved by the NRC. Therefore, there will be no more than one missing plate allowed in each pool, and that missing plate will have the associated tube blocked.³⁸

56. Applicant's witness testified that a criticality event in the spent fuel pool could only occur through poor quality manufacture, design and testing. He did not believe that such an accident is credible because of the design of the proposed racks.³⁹

57. The Applicant informed the Board in January 1981 that it had purchased new 8×8 fuel from Exxon Nuclear Corporation. This fuel is proposed for use in future reloads at Dresden Units 2 and 3. At that time the Applicant submitted an affidavit showing that K_{eff} of 0.95 will not be exceeded if the Exxon Nuclear Fuel is stored in the proposed racks. Applicant's witness testified with respect to this affidavit at the evidentiary hearings held on April 20, 1981. The Exxon Nuclear fuel has not yet been approved by the Staff for use at the Dresden Station. Such approval will require further licensing action by the NRC, including a criticality review by the Staff addressing the storage of Exxon Nuclear fuel in the Dresden storage racks.⁴⁰ The potential use of Exxon fuel does not affect the instant partial initial decision which addresses 5-racks which will receive fuel presently in the core.

58. The Board finds that the pending application to use Exxon Nuclear fuel at the Dresden Station does not present an impediment to the issuance of the proposed license amendment in this proceeding for the installation of five racks for storage of existing General Electric spent fuel assemblies at Dresden Station.

59. The Board finds that, with the quality assurance program for the manufacture of the racks and the described commitment to neutron attenuation testing of the racks, there is reasonable assurance that a criticality event will not occur in either Dresden spent fuel storage pool.

60. Further, the Board finds that the criticality analysis performed by Applicant provides reasonable assurance that K_{eff} will not exceed 0.95.

³⁸ Applicant's Ex. 1, pp. 3-17, 3-27, 3-28; Tr. 229, 484-87, 595-96.

³⁹ Tr. 587-88.

⁴⁰ Affidavit of Kin W. Wong dated 21 January 1981 (subsequently bound in the transcript following Tr. 1013); Tr. 827-29.

C. Quality Assurance

61. Contention 2 states:

The Application does not show that the quality control and quality assurance programs of Applicant and its contractors are adequate to assure that tube and rack construction and the boron-10 loading of the Boral in the tubes will meet specifications.

62. The proposed storage racks are to be fabricated in two stages. First, the stainless steel tubes containing Boral are manufactured by Brooks and Rerkins Company, Livonia, Michigan. Second, the tubes are shipped to Leckenby Corporation, Seattle, Washington, where they are welded together in a checkerboard pattern onto base plates to form the storage racks. Finally, the completed storage racks are shipped to the Dresden Nuclear Station for installation. Applicant, NSC, Brooks & Perkins, and Leckenby Corporation each have quality assurance programs to ensure that the proposed storage racks when completed and installed meet safety-related design requirements.

63. Applicant's quality assurance program meets the requirement of 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Plants;" Section III of the ASME Boiler and Pressure Code; ANSI Standard N45.2 - "Quality Assurance Program Requirements for Nuclear Power Plants;" and applicable NRC Regulatory Guides.⁴¹ The NRC's Office of Inspection and Enforcement has found that Applicant's quality assurance program has been satisfactorily implemented at Dresden. Additionally, the quality assurance programs of Applicant's contractors and subcontractors meet the applicable portions of 10 CFR Part 50, Appendix B, as required by Applicant's commitment in the Commonwealth Edison Company Quality Assurance Topical Report.⁴² In connection with this project, Applicant's Quality Assurance Department and the quality control group in Applicant's Station Nuclear Engineering Division reviewed the NSC, Brooks & Perkins, and Leckenby quality assurance manuals and found them to be acceptable.⁴³

64. In its Proposed Findings 64-71, Intervenor criticized Staff and Applicant witnesses, testimony on the quality assurance program, in that the witnesses proffered were not primary reviewers of all quality assurance

⁴¹ Testimony of Walter J. Shewski (Shewski) at p. 2, following Tr. 239; Supplemental testimony of William L. Belke (Belke) at p. 2, following Tr. 422; Tr. 429-30.

⁴² Belke at pp. 2-3; Tr. 424.

⁴³ Shewski at p. 3, Tr. 240-41.

documents but are the supervisors of the primary reviewers. The Board does not agree with Intervenor that the testimony was flawed as a consequence.

65. The quality assurance programs of Applicant, NSC, Brooks & Perkins, and Leckenby are designed to assure that materials and processes utilized in fabrication of the racks will meet safety-related design requirements and to assure the quality and correctness of the manufacturing process.⁴⁴

66. To achieve the first objective, the boron carbide, aluminum powder and stainless steel materials to be used in the neutron absorbing tubes are certified by the suppliers of these materials as meeting applicable American Society for Testing and Materials ("ASTM") standards as required by the procurement specifications. The certification documents, which are traceable to specific lot numbers of the supplied materials, are supplied to Brooks & Perkins. Brooks & Perkins quality assurance personnel review the certification documents to ensure that the materials conform with the procurement specifications. Additionally, Brooks & Perkins audits the supplier of the boron carbide to ensure its certifications are acceptable.⁴⁵

67. The Brooks & Perkins certification review and verification are documented in a "Nuclear Material Review Report," prepared by Brooks & Perkins Quality Assurance personnel. This document is forwarded to NSC, which is required to review it and ascertain the acceptability of the certification documents and Brooks & Perkins review thereof. Only when such a finding is made are materials released by NSC to Brooks & Perkins for fabrication into tubes.⁴⁶

68. Quality assurance in the manufacturing process is achieved by inspection and sampling at several points during fabrication of the tubes and racks. The tubes are double-walled structures into which Boral plates are inserted. To ensure that the neutron absorbing quality of the boron carbide in the Boral plates has not been altered in the manufacturing process, all plates are inspected for proper thickness at six locations and a sample is taken from each end of the plates. Of those samples, 10% are analyzed, chemically or by neutron attenuation measurement, for boron content.⁴⁷

69. The storage tubes are fabricated at Brooks & Perkins by folding and welding stainless steel plates to form the inner and outer walls. Brooks and Perkins quality control personnel visually inspect the inner and outer

⁴⁴Shewski at p. 5.

⁴⁵Shewski at p. 6.

⁴⁶Shewski at p. 6.

⁴⁷Shewski at p. 7.

full-length seam welds of each tube; in addition, dye penetrant tests are performed on 10% of the outer tube seam welds. After insertion of the Boral plates, the completed tube assembly is subjected to inside and outside visual and dimension tolerance check. Further, 10% of the completed tubes are given a full-length check with a simulated fuel element to verify straightness and proper clearances and to ensure no binding occurs.⁴⁸

70. Brooks & Perkins utilizes a new computerized system to check chemical analysis, materials, fabrication, and personal inspection activities to verify acceptability of Boral sheets and other materials and to verify identification of each tube. Only if a specific tube meets all these quality-related requirements is it approved by computer printout. The computer checkout has in at least one instance erred in failing to reject tubes for inadequate Boral content. However, further quality assurance measures are taken, in that following its own approval, Brooks & Perkins is required to forward data, inspection, and weld reports to NSC for review and acceptance. Only upon determination by NSC that Brooks & Perkins' quality requirements have been met and that design and fabrication requirements have been met, are tubes released for shipment to Leckenby for rack fabrication.⁴⁹

71. Leckenby conducts its own quality assurance inspection and review during fabrication of the tubes into storage racks. NSC reviews the data sheets and weld reports documenting these activities and releases the completed racks for shipment to the Dresden Station on determination through its inspections and documentation review that the racks' design, fabrication, and quality requirements are acceptable.

72. Finally, in receipt of the storage racks at the Dresden Station and their immersion in the pools, a neutron attenuation test will be conducted on a sampling of storage tubes to confirm presence of the Boral plates.⁵⁰ Applicant's commitment in the event missing plates are detected is described *supra* ¶ 54 & 55.

73. To comply with 10 CFR Part 50, Appendix B, Criterion XVIII, Applicant, NSC, Brooks & Perkins, and Leckenby periodically conduct self-audits, and in addition Applicant has hired NSC to perform audits, surveillances, and inspections of Brooks & Perkins and Leckenby during rack fabrication. Applicant conducts audits and surveillance of NSC, Brooks & Perkins, and Leckenby. The NRC has the authority to audit

⁴⁸Shewski at p. 7.

⁴⁹Shewski at pp. 7-8; Tr. 193-94.

⁵⁰Shewski at pp. 8-10.

Applicant, or NSC, Brooks & Perkins, of Leckenby.⁵¹ Board Exhibits 1-3 consist of Applicant's purchase orders to NSC, Brooks & Perkins, and Leckenby, which set forth responsibilities of each entity.

74. Applicant audits NSC's quality assurance activities to ensure that the NSC audits are conducted in accordance with NSC QA programs. Applicant's audit includes review of NSC audit reports. Deficiencies found by NSC which cannot be resolved with Brooks & Perkins or Lickenby are reported to Applicant for corrective action.⁵²

75. Several quality assurance terms were defined as used in this proceeding: "audit" - a function done in accordance with specific formally approved checklist questions; "surveillance" - review on a continuing basis of activities without a formal checklist; and "inspections" - those specific detailed inspections required under contract during and after fabrication to establish that items are acceptably built. Checklists may be standardized, specifically designed for the activity to be audited, or a combination thereof. Types of deficiencies disclosed in audits are classified in audit reports as follows: "finding" - violation of a rule, such as a commitment or one of the 10 CFR Part 50 Appendix B Criteria; "observation" - a variance considered by the auditor as less severe than a finding, generally an item which is almost, but not completely, implemented; and "comment" - a nonenforceable suggestion.

76. When one of Applicant's audits discloses either a finding or an observation, the audited firm must indicate corrective action and commit to a date for its implementation. Shortly after that date Applicant conducts a follow-up audit to confirm satisfactory completion of the corrective action. Applicant's quality assurance manager maintains a list of open findings and observations, updates it monthly, and reports it to Applicant's upper management. Applicant keeps on file audit checklists, responses from audited firms, and associated closeout reports.⁵³

77. If a deficiency is detected during a surveillance, a deficiency letter is written in two to three days, and an audit of that item is required within two weeks.⁵⁴

78. Generally audits, surveillances and inspections are not conducted on an unannounced or surprise basis. The system of audits, surveillances and inspections is designed to discourage circumvention of requirements and procedures.⁵⁵

⁵¹Shewski at p. 3; Tr. 244-47, 254-57, 331-32; Board Exs. 1-3.

⁵²Shewski at pp. 3-4; Tr. 244-54.

⁵³Tr. 310-11, 315-26, 311-13.

⁵⁴Tr. 314.

⁵⁵Tr. 326-28, 331.

79. Several technical problems which arose during fabrication of the Dresden racks were addressed. Slight bending of tube arrays due to shrinkage of full-length welds on cooling was identified by Leckenby and satisfactorily resolved by Applicant, NSC, and Leckenby by "flipping" the racks after completing welding of each row of tubes, thus allowing the bow of each subsequent row to counteract bow from the previous row. Calculations by NSC show that with this welding technique bowing is within allowable tolerances. As part of final rack inspection a mandrel test is conducted to confirm adequacy of individual storage location dimensions.⁵⁶

80. Accumulation of pitch spacing tolerances from cooling and shrinking of corner to corner welds produced an unanticipated systematic effect on the first rack fabricated, i.e., the rack pulled together into a more dense configuration than specified, causing overall dimensions of the rack to be slightly too small (25 mils shorter in one lateral dimension than specified). NSC's criticality analysis, assuming that the specified pitch spacing of $6.3'' \pm 0.060''$, nonaccumulative, was decreased to $6.24''$ ($6.3'' - 0.060''$) center-to-center spacing, demonstrated that the rack would still satisfy criticality requirements (K_{eff} less than 0.95) (Applicant's Exhibit 1). Leckenby initiated tooling changes to improve control of pitch spacing on subsequent racks.⁵⁷

81. Problems have arisen at Brooks & Perkins due to loss of proper identification of Boral stock during rolling and stamping, occasioned by deformation of identification marking during fabrication. Also, documentation establishing acceptability of neutron attenuation properties for some plates has been lost after their insertion into the tube. In the first case, reidentification was made by neutron attenuation testing at the University of Michigan's research reactor. In the second case, physical limitations prevented tests of completed tubes at the University so Brooks & Perkins contracted with National Nuclear Corporation to perform a neutron attenuation test. Brooks & Perkins has a new computerized system to reduce identification problems. NSC is required to inspect documentation to ensure each tube has adequate Boral content prior to shipment from Brooks & Perkins to Leckenby. In this capacity NSC rejected two tubes determined to have inadequate Boral content. Applicant's witness believes that no tubes having inadequate Boral have been shipped to or accepted by Leckenby.⁵⁸

⁵⁶Pickens at pp. 14-15; Tr. 200-01, 224-26, 702-05.

⁵⁷Pickens at pp. 15-16; Tr. 202-03, 226-27.

⁵⁸Pickens at pp. 13-14; Tr. 192-94, 219-23; Intervenor's Ex. 2; see ¶ 84, *infra*.

82. In addition to the fabrication problems described above, there have been some deficiencies in implementation of quality assurance programs for the storage racks. Design of the proposed racks began in August or September 1977 and fabrication at Leckenby began April 10, 1980. The racks were initially designated "non-safety related," hence, the original purchase order did not specify that the fabrication of the tubes was "safety-related". In late 1977 Applicant upgraded the project to safety-related and verbally so notified NSC at that time. Applicant failed, however, to amend the NSC purchase order until October 1980. Reverification of the design was completed by NSC in September 1980. Applicant testified that despite the documentation error, the quality of tube and rack fabrication was not compromised, since as early as October 1977 all work at NSC was done as safety-related in accordance with their quality assurance program. Brooks & Perkins' and Leckenby's contracts were identified from the beginning as safety-related and all work was done in accordance with their own quality assurance programs.⁵⁹

83. Several documents relating to quality assurance and obtained from Applicant during discovery were introduced into evidence by Intervenor.

84. Intervenor's Exhibit 2 (see paragraph 81, *supra*) is a "Trip Report" dated September 2, 1980, indicating rejection by NSC of two tubes at Brooks & Perkins because of inadequate Boral content.

85. Intervenor's Exhibit 3 is a report dated December 26, 1979, of results of an NSC audit of Brooks & Perkins on December 12-13, 1979. The report noted one finding, relating to violation of 10 CFR 50, Appendix B, Criterion II in that the QA procedure for compliance with 10 CFR 21 was not established, and five observations. Intervenor's Exhibit 3B, consisting of the closeout documents from this audit, indicates corrections as necessary of noted deficiencies. This exhibit, supplied by Applicant on December 1, 1980, to complete the evidentiary record pursuant to stipulation, includes: Brooks & Perkins' response to the NSC audit, dated January 31, 1980; NRC's evaluation of this response, dated March 13, 1980, and the cover letter accompanying NSC's transmission of these documents to Applicant, dated April 28, 1980.⁶⁰

86. Intervenor's Exhibit 4 is a report dated September 18, 1980, of an audit by Applicant of Brooks & Perkins on September 11-12, 1980. This audit resulted in four observations of deficiencies in specification and documentation of duties of some QA personnel; review of purchased items and materials for conformity to purchase order requirements; training of

⁵⁹Tr. 185-90, 234, 318; Pickens at pp. 11-12; Intervenor Ex. 4.

⁶⁰Intervenor's Exhibit 3; Tr. 195-200; Tr. 511-12.

some personnel performing activities affecting quality; and timeliness of corrective actions after notification of deficiencies. Identified deficiencies have been closed out satisfactorily.⁶¹

87. Intervenor's Exhibit 5 is a report dated September 1980, of an audit by Applicant of NSC on September 17-18, 1980, together with the related closeout documents. This audit resulted in eight findings, four observations, and one comment. Findings noted deficiencies in documenting indoctrination and technical training of project personnel; establishing position descriptions; training audit team leaders; conducting surveillances of project activities conducting internal audits during 1979; and certification of the QA Services Manager in accordance with ANSI N45.2.6. Observations noted among other things, that NSC had not performed a QA audit of Leckenby during 1980.

88. In reference to the finding that NSC did not conduct an internal audit in 1979 for the Dresden and Zion storage rack projects and to the observation that NSC had not audited Leckenby during 1980, testimony indicated that NSC completed an internal audit in September 1980, and in response to Applicant's finding developed an internal audit plan for the future. Applicant further indicated that fabrication of Dresden racks at Leckenby began April 10, 1980, and that NSC audited Leckenby in October 1980, within six months of initiation. Applicant audited Leckenby on March 14, 1980, just prior to start of fabrication, with a followup audit in May 1980 and another audit in September 1980. During this general period, April - October 1980, NSC did three surveillances and four inspections of Leckenby. While Applicant believes that NSC's failure to conduct an audit during this period did not compromise quality of the racks, Applicant has taken steps to ensure timely audits by NSC in the future.⁶²

89. Intervenor's Exhibit 6 is an audit report and associated closeout documents reflecting an audit by Applicant of Leckenby on September 24-25, 1980. The audit resulted in two findings, dealing with changes in the organization chart and traceability of purchased weld filler material, and four observations in regard to approval of suppliers, logging of QA-related documents, verification and documentation that qualified personnel and approved procedures were utilized in performing special processes, and documentation of welders' training. Closeout documents indicate timely correction of these deficiencies.⁶³

⁶¹ Intervenor's Ex. 4; Tr. 214, 280-86, 323-24; note: followup documents for this audit are not part of the record in this proceeding.

⁶² Tr. 261-70, 278-79, 317-23.

⁶³ Intervenor's Ex. 6; Tr. 286-89.

90. Intervenor's Exhibit 7 concerns another audit by Applicant of Leckenby, dated March 13, 1980, and the associated closeout documents. This audit resulted in one finding, dealing with failure to transmit quarterly reports on QA to the vice-president of Leckenby, and two observations concerning lack of a training program for QA personnel and missing resumes of certain personnel.⁶⁴

91. Intervenor's Ex. 10 is an NRC audit report of Leckenby conducted March 17-20, 1980. The audit dealt with three of the eighteen criteria of 10 CFR 50, Appendix B. Twenty significant deviations of commitments were disclosed, leading the auditors to conclude that Leckenby had not implemented an effective QA program consistent with requirements of 10 CFR 50, Appendix B, and ANSI N-45.2 as contractually imposed by Leckenby customers. Although this NRC audit disclosed many more deficiencies than did Applicant's audit of the previous week, Applicant's audit was limited to its own project; none of the deficiencies identified by the NRC audit related specifically to the Dresden project.⁶⁵

92. Because of the NRC audit, Leckenby had Olympic Engineering Corporation conduct an internal audit and recommend improvements in Leckenby's QA program. By reviewing Leckenby's files, Applicant's auditors learned of the deficiencies identified by Olympic Engineering and assured that they were corrected.⁶⁶

93. Brooks & Perkins conducted an internal audit on June 11, 1980. As is customary, Applicant's auditors reviewed this internal audit to assure satisfactory close-out of all deficiencies. The findings identified in this audit were corrected and on inspection the quality of the end product was determined to be acceptable.⁶⁷

94. The Board has reviewed the quality assurance documents introduced by Intervenor. The deficiencies reflected in those documents have been closed out.⁶⁸ The documents reflect the system of inspections, surveillances, and audits which assures the quality of the completed racks.

⁶⁴Intervenor's Ex. 7, Tr. 289-90.

⁶⁵Intervenor's Ex. 10; Tr. 332-37; Board Ex. 3 (Leckenby Contract); Tr. 715-16.

⁶⁶Tr. 291-98. The recommendations were contained in Intervenor's Exhibit 8, marked for identification but not admitted into evidence due to its hearsay nature.

⁶⁷Tr. 580-83. The Brooks & Perkins internal audit was marked for identification (proprietary matter) as Intervenor's Ex. 9, but was not introduced into evidence; Tr. 302.

⁶⁸Tr. 323.

95. Intervenor (Proposed Finding 96) urged the Board to find inadequate the quality assurance and quality control procedures described by Applicant and Staff, based on the concern identified in ¶ 64 (*supra*) and on previous history of the Dresden quality assurance program. The Board finds that the quality control and quality assurance programs of Applicant and its contractors are adequate to assure that tube and rack construction and the boron-10 loading of the Boral in the tubes will meet specifications. The Board also, however, takes note of Intervenor's concern. We stress to the Applicant that implicit in our finding that the current programs are adequate is our expectation that the written procedures will be implemented fully and on a timely basis. We request of the Staff that the Applicant be firmly held to strict adherence to the programs it has described.

D. Transportation Damage

96. Contention No. 3 states:

The Application does not demonstrate that rack and tube packaging, transportation, and receipt inspections are adequate to prevent and detect transportation damage.

97. The packaging and transportation procedures initially used by Brooks & Perkins involved packing tubes in cardboard boxes (4 tubes to the box) which were banded together onto wooden skids (6 boxes per skid). These package units were transported by closed trailers with two package units placed along each wall of the trailer with bracing between adjacent wood skids to prevent sliding. This procedure proved unsatisfactory and resulted in a transportation incident in early August 1979. Consequently, Brooks & Perkins' transportation procedures were modified in September 1979, to improve the load configuration and to provide additional banding. Transportation procedures were again improved in January 1980, to provide additional load stability and weather protection. With this modified procedure, as of mid-September 1980, a total of 1579 Dresden tubes had been transported in 9 shipments with no known transportation damage.⁶⁹

98. At Leckenby each shipment is inspected on receipt by Leckenby QC personnel to detect any transportation damage. In connection with the transportation incident cited *supra*, Leckenby and Applicant inspected the boxes, removed those suspected of damage, identified the tubes therein and shipped the boxes back to Brooks & Perkins for reinspection. Of the 80 tubes returned, only three required minor rework and these subsequently

⁶⁹Pickens at pp. 17-18; Shewski at pp. 10-11; Tr.397-98.

passed inspections. The tubes which were not shipped back to Brooks & Perkins were subjected to and passed the standard receiving inspection at Leckenby.⁷⁰

99. For shipment of the fuel racks from Leckenby to Dresden, special packaging, loading, tie-down, and bracing methods are used to prevent transportation damage and provide weather protection. Shipments are made using dedicated tractor-trailer units with drivers who are instructed in the relevant precautions and shipment requirements.⁷¹

100. On their arrival at Dresden and prior to unloading, the racks are subjected to preliminary visual inspection by storeroom personnel to detect any transportation damage. Storeroom personnel document their findings in a Receiving Inspection Notice which is forwarded to the Station QC Department.⁷²

101. Applicant intends that QC personnel will in turn perform a Quality Receipt Inspection which will include visual inspection of accessible welds by a certified Level II instructor. Documents accompanying the racks will be reviewed to ensure conformance of the racks to all applicable specifications and standards and to verify completion of all required weld examinations and chemical and physical tests.⁷³

102. The written procedures for the Quality Receipt Inspection were being formulated at the time of the first hearing. On September 11, 1981, they were still being reviewed prior to final approval. They must meet the requirements of ANSI Standard N 45.2.⁷⁴

103. On completion of the receipt inspection the Receiving Inspection Notice and Quality Receipt Inspection will be sent for review and approval to Applicant's Quality Assurance Department, which while physically located at Dresden Station is independent of station management. The racks cannot be released from storage for installation without the approval of Quality Assurance.⁷⁵

104. Prior to a rack's installation in a spent fuel storage pool, each storage location in the rack will be subjected to a drag test. A dummy fuel assembly having dimensions identical to those in use will be inserted and withdrawn from each storage location. If the drag exceeds 50 pounds, indicating a physical defect in the contours of a tube, that storage location

⁷⁰Shewski at p. 11; Pickens at pp. 18-19.

⁷¹Shewski at p. 12.

⁷²Testimony of Ron Ragan (Ragan) at p. 2 following Tr. 412.

⁷³Ragan at pp. 2-3; Shewski at p. 9.

⁷⁴Tr. 397; 405-08; 414-15; 1046-48; 1112-14.

⁷⁵Ragan at p. 3.

will be plugged by welding straps across its top. While preventing fuel insertion this plug will still allow circulation of cooling water in that location.⁷⁶

105. At the time of the November 1980 hearing, four racks had arrived at Dresden. Due to unavailability of written procedures for the Quality Receipt Inspection, quality receipt inspections did not take place. Therefore, the racks were segregated and stored on the site by storeroom personnel in accordance with instructions of the Station Nuclear Engineering Department and pursuant to the written temporary hold area procedure applied to all safety-related equipment. Storeroom personnel are responsible for periodic verification of the condition of the racks and their storage location. The racks are "on-hold" by Quality Assurance and cannot be moved or used until after a quality receipt inspection has been done and QA has released them. No additional racks will arrive at Dresden Station prior to completion of the written quality receipt inspection procedure.⁷⁷

106. Due to inadequate storage capacity at the Station the remaining racks may not be shipped directly from Leckenby to Dresden. Applicant is currently considering storage of the racks in a warehouse near the Station or near Leckenby. While there are no written storage procedures for interim off-site storage, such procedures are unnecessary since the racks would be subject to quality receipt inspection at Dresden.⁷⁸

107. Applicant has adequately documented those packaging, transportation, storage and receipt procedures which have been implemented to prevent and detect transportation damage, and has described corrective measures taken to improve these procedures. Applicant has stated that the final quality receipt inspection at Dresden Station will ensure that damaged racks not in conformance with specifications will not be installed in the spent fuel pools at the Station.

As set forth above, Applicant states that

- (a) Quality receipt inspection procedures will be formulated and written (para. 101, *supra*);
- (b) No additional racks will arrive at Dresden Station prior to completion of (a) above (para. 105, *supra*);
- (c) No racks, either those currently onsite or those awaiting shipment, will be released for installation until completion of the quality receipt inspection and release by Quality Assurance (para. 105, *supra*).

⁷⁶Ragan at p. 3; Tr. 705.

⁷⁷Ragan at pp. 5-6; Tr. 391-92, 394, 405, 408-09, 414-15, 578-80.

⁷⁸Tr. 393-96.

108. Therefore, the Board finds that Applicant has demonstrated the adequacy of those procedures now in effect to prevent and detect transportation damage, and the Board further finds that added assurance of safe operation of the spent fuel pools is provided by proposed procedures to ensure that damaged racks not in conformance with specifications will not be installed in the spent fuel pools at Dresden Station.

E. Corrosion

109. Contention 7 asserts that:

The Application does not adequately assess the possibility of general corrosion and galvanic corrosion in the racks, in that:

- A. The life expectancy of the Boral tubes is unsubstantiated.
- B. Swelling of the Boral in the tubes and its effect on removal of fuel assemblies have not been analyzed.
- C. The corrosion surveillance program will not assure detection of corrosion in the racks because the samples to be inspected will not be representative of the actual tubes in the racks, because the sample environment will not represent pool conditions in and near the racks, and because the program does not require a dummy fuel test shortly before placement of fuel in each tube.
- D. There is no plan for steps to be taken should corrosion be discovered in the racks.

110. Contention 8 states:

The Applicant should develop criteria for the racks defining when their use to store fuel would be proscribed. These criteria should be the acceptable amount of corrosion, limits on dimensional changes and strength tolerance.

111. As described earlier the proposed storage racks consist of a vertical array of rectangular stainless steel tubes welded together at the corners to form a checkerboard pattern. Within each stainless steel tube are four neutron-absorbing Boral plates, 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 sheath. In addition, the stainless steel inner and outer sheaths of each tube are not welded together at the bottom corners. Therefore, water may enter the tube at the bottom and through the holes at the top and come into contact with the Boral. Boral is a product

manufactured by Brooks & Perkins, Inc. It 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.⁷⁹

112. The life expectancy of the Boral plates and stainless steel tubes encapsulating the plates is in excess of forty years. This assumes that the present high water purity in the Dresden spent fuel pools is maintained.⁸⁰

113. Contamination of the pool water might occur through spillage or immersion of something containing chloride into the pool water. A small quantity of chloride ion would not have a discernable effect on the stainless steel. However, as little as 1 or 2 ppm in the water actually in contact with the Boral might lead to the occasional formation of pits. Such pitting would not lead to the loss of a significant quantity of boron from the Boral. The corrosion product, aluminum oxide, would hold the boron carbide in place. The effect of other contaminants such as hydroxide ion or sulphate would be to cause the thickness of the aluminum oxide film on the surface of the Boral to increase.⁸¹

114. The quality of the water in the pools is maintained through the operation of the Spent Fuel Pool Clean Up System filters and demineralizers which remove such contaminants. The quality of the water is checked regularly. There have not been extended periods of loss of water quality.⁸²

115. Three mechanisms could lead to swelling of the Boral within the tubes. First, if the quality of the Boral is poor so that there is porosity, there could be a path for permeation of the core material by water. It would then be possible for this water to react with the aluminum to produce hydrogen gas in quantities sufficient to expand the Boral in the form of an internal blister. However, this swelling should be self-limiting, because expansion of the blister should deform the plate to allow release of the hydrogen pressure. Moreover, such swelling would be local in nature, related to some unexpected defect in the Boral. Because of good experience with commercial grade Boral, no swelling of this type is expected in the Dresden pools.⁸³

⁷⁹ Applicant's Ex. 2, Licensing Report: Dresden Nuclear Power Plant Units 2 and 3 Spent Fuel Rack Modification (Revision 5) at pp. 3-6; Testimony of J. E. Draley (Draley) at p. 2 following Tr. 341; Tr. 358, 466-67.

⁸⁰ Draley at pp. 3-5; Supplemental Testimony of John R. Weeks (Weeks) on Contention 7 and 8 at pp. 1-2, following Tr. 434; Tr. 345-348, 372, 375-377, 440.

⁸¹ Weeks, Attachment to Supplemental Testimony, BNL-NUREG-25582, "Corrosion Consideration in the Use of BORAL in Spent Fuel Storage Pool Racks," at pp. 2-3, 4, 6, following Tr. 434; Tr. 347, 352-53, 372.

⁸² Testimony of Don Adam (Adam) at pp. 2-7 following Tr. 550; Applicant's Ex. 1, Table 3.7-1; Draley at p. 9; Tr. 376-80, 706-8.

⁸³ Weeks at p. 2; Draley at pp. 5-8, Attachment 5 following Tr. 341; Tr. 354-55.

116. A second mechanism would involve local corrosion, or pitting, induced by galvanic interaction between the aluminum cladding of the Boral and the stainless steel tubes. Because the solid corrosion product has a greater volume than the metal, local swelling could result. The extent of galvanic corrosion is limited by the poor conductivity of the water, the poor electrical contact between the Boral and the stainless steel, and by the protective oxide films forming on both metals. The degree of perfection of the oxide determines the rate of corrosion. If galvanic corrosion is not so limited, the maximum swelling of the Boral sheet would be 0.180 inch. This was calculated by converting the entire thickness of the Boral plate to the aluminum corrosion product. This amount of swelling should not interfere with the normal fuel assembly within the proposed Dresden racks. Such swelling would be local in nature. The only mechanism which would lead to such swelling would be some unexpected defect in the Boral.⁸⁴

117. A third mechanism for swelling of the Boral would be the accumulation of gas trapped between the Boral and the stainless steel. The gas would be a mixture of the air originally in the stainless steel tubes and hydrogen produced by the initial corrosion of aluminum when exposed to water. This mechanism is believed to explain the swelling of some tubes in the spent fuel storage racks at the Monticello Plant in 1978. It should not occur at Dresden, if the vent holes in the tubes provided to allow such gas to escape remain unplugged.⁸⁵

118. The corrosion surveillance program proposed by Applicant includes the installation of eighteen small test samples and two full-length vented tubes in each pool. The samples will be representative of the materials in the tubes of the racks. The samples will be inspected periodically over forty years. The sample environment will be that of the spent fuel conditions in or near the racks. The number of samples and planned schedule for examination of the samples are adequate.⁸⁶

119. Damaging corrosion processes that might be anticipated should be slow and gradual, developing over a number of years. There should be adequate time after the corrosion process is discovered to make plans for repairing the corrosion damage or replacing the corroded material without

⁸⁴ Draley at pp. 6-8; Tr. 339-40, 350-58. However, Dr. Draley noted that such swelling, when combined with the phenomenon of fuel channel bowing, could lead to a possible impediment to insertion or withdrawal of a fuel assembly, depending on the location of the swelling. The Board at Applicant's request agreed to continue the evidentiary hearing to allow further analysis of the possible clearance problem caused by fuel channel bowing. Tr. 380-84.

⁸⁵ Draley at p. 8; Weeks at p. 2, and attached report BNL-NUREG-25582, "Corrosion Consideration in the Use of Boral in Spent Fuel Storage Pool Racks"; Tr. 358-359, 372.

⁸⁶ Draley at pp. 8-10 and Attachment 6, "Neutron Absorber Sampling Plan-In Pool"; Testimony of James D. Gilcrest (Gilcrest) at pp. 1-5 following Tr. 447; Weeks at pp. 3-4; Tr. 342, 362-67, 370-71, 436-39, 459-62.

significant risk to the fuel being stored or to the environment. This assumes that no corrosive contaminants are put into the pool water in substantial quantity. However, because of the routine analysis of pool water and the efficiency of the spent fuel pool clean-up system, such contaminants should not remain undetected in the pool water for long periods of time.⁸⁷

120. Contention 8 claims that criteria should be developed for the racks which define when their use to store fuel would be proscribed. Such criteria would need to be developed if the surveillance program at Dresden, in combination with surveillance programs or experience at other reactors, should show significant deterioration of such racks. However, considering that deterioration is not anticipated, that a surveillance program will be established, and that modes of deterioration are not expected to be rapid, such criteria can be formulated if a specific problem develops. It is not necessary to define in advance the maximum possible damage that the racks could withstand from a range of hypothetical corrosion or other problems.⁸⁸

121. The Board finds that the life expectancy of the Boral plates and stainless steel tubes encapsulating the plates should be in excess of forty years. Further, the Board finds that swelling of the Boral in the tubes has been analyzed. It is not anticipated to occur. Thus, it should not affect the removal of fuel assemblies from the storage tubes.

122. The Board finds that the proposed corrosion surveillance samples will be representative of the materials in the actual tubes in the proposed storage racks. The sample environment will represent pool conditions in or near the racks. The Board finds that the proposed surveillance program should be adequate to ensure detection of corrosion in the storage racks.

123. The Board finds that the corrosion processes that might be anticipated are expected to be slow and gradual, developing over a number of years. Therefore, there should be adequate time after any corrosion process is discovered to make plans for repairing the corrosion damage or replacing the corroded material without significant risk to the fuel being stored or to the environment.

124. The Board finds that it is not necessary to develop criteria proscribing the use of the racks in advance as a result of a range of hypothetical corrosion problems. As the modes of deterioration are not expected to be rapid, such criteria can be developed if and when a specific problem develops.

⁸⁷Weeks at p. 4; Draley at p. 10; Adam at p. 6; Tr. 367-68, 379-80, 439-42, 707-08.

⁸⁸Weeks at pp. 4-5; Draley at p. 10; Gilcrest at pp. 1-5; Tr. 367-68, 440-41, 461-62.

F. Radioactive Waste Treatment, Radiation Monitoring, and Health and Safety Of Workers at Dresden Station.

125. Contention 1 reads:

The Application gives no assurance that the radioactive waste treatment system for the spent fuel pools is adequate for the proposed increase in spent fuel storage capacity.

126. Contention 4 reads:

Applicant has not provided adequate monitoring equipment in the spent fuel pool water to detect abnormal releases of radioactive materials from the increased numbers of spent fuel bundles. Absence of such monitoring and alarms could result in undue exposure to workers in excess of ALARA, specifically:

- A. There is no description of monitoring devices, and therefore, no assurance exists that workers in each pool area will have adequate warning of possible hazardous conditions.
- B. The Applicant should demonstrate that the radiation monitoring equipment has adequate range and sensitivity to indicate accurately the rates and magnitudes of radiation releases that could occur in the reracked pools.

127. Contention 5 reads:

There is no assurance that the health and safety of workers in the spent fuel pool areas will be adequately protected during rack removal and installation, in that:

- A. The Application does not supply adequate information to assess the occupational radiation dosage to workers involved in removing and installing racks and rearranging spent fuel in the pools, and to other workers who may be in the pool areas.
- B. There is no consideration of the occupational radiation hazards from accidents that may occur as a result of rack removal and installation, e.g., flooding of the pool area and water spraying on workers.

128. The two systems which treat radioactive waste from the spent fuel pools are the fuel pool cooling and cleanup system and the plant radioactive waste disposal system. Dresden Units 2 and 3 each have an independent fuel pool cooling and cleanup system consisting of a closed loop in which water is pumped from the pool through a heat exchanger, then through a filter and demineralizer, then back to the pool. The fuel pool cooling and cleanup systems are "full flow," i.e., all of the water that passes through the pump and heat exchanger also goes through the filter and demineralizer. Each system is designed to filter an amount of water equal to the spent fuel pool volume every 12 hours. The fuel pool cooling and cleanup systems can be connected so that Unit 2's filter and demineralizer can be used to treat Unit 3 fuel pool water, and vice-versa.⁸⁹

129. The pre-coat type filter, coated with clay-like filter aid, removes particulates from the pool water. Filter condition is assessed by monitoring and recording differential pressure across the filter; at 30 psid an alarm sounds to indicate need for backwashing and recoating the filter. Operational experience at Dresden Station does not indicate that filter change frequency has increased with increased spent fuel storage.⁹⁰

130. Soluble contaminants except tritium are removed in the fuel pool demineralizer, which has an efficiency of about 99.9% of 99.99% after one pass. The resin in the demineralizer requires replacement after depletion of its ion exchange capacity. Operating experience at Dresden Station indicates that required resin replacement frequency has remained at once or twice per year despite increasing numbers of spent fuel assemblies stored in the pool.⁹¹

131. If storage of additional amounts of spent fuel in the pools caused increased radioactivity in the pool water, more frequent changes of filter aid material and demineralizer resins might be necessary. However, only slight increases in overall quantity of radionuclides in the water are expected. Introduction of radioactivity into the pool water is a function of leakage from stored spent fuel and of mixing of poolwater with reactor coolant system water during refueling. Since the proposed full reracking modification will not affect frequency or method of refueling it will not increase the amount of impurities introduced into the pool from the reactor coolant. Experience indicates that there is little radionuclide leakage from stored spent fuel after several months of cooling. Consequently, the amount of radionuclides in the pool water due to leakage from the stored fuel is expected to increase less than linearly with the number of spent fuel

⁸⁹ Supplemental testimony of Valentine Malafeew (Malafeew) at p. 1, following Tr. 521; Tr. 530; Tr. 537-38.

⁹⁰ Adam at pp. 2-4 and Attachment 1.

⁹¹ Adam at pp. 5-7; Tr. 707-12; NRC Staff Ex. 1, Environmental Impact Appraisal, pp. 4-6.

assemblies stored in the pools and to be relatively minor. For these reasons, the existing spent fuel pool cleanup systems should be adequate for the proposed full reracking modification,⁹² and certainly for the limited modification permitting installation of 5 racks.

132. The proposed increase in spent fuel storage capacity is not expected to increase frequency of filter and resin replacements and thus the proposed full reracking modification is not expected to result in any significant increase in solid radwaste generation. Nevertheless, as a conservative estimate the NRC Staff assumed that two additional resin beds would have to be changed out each year for each unit. This conservative assumption would result in an increase of about 720 cu. ft./yr. in solid radwaste shipped from Dresden, or an increase of less than 0.8% in the total amount of wastes shipped from Dresden Units 2 and 3.⁹³

133. Contention 4 challenges the adequacy of radiation monitoring devices in and around the Dresden spent fuel pools. Ten separate area radiation monitors are located throughout the refueling floor which houses the spent fuel pools. The detectors for these monitors are of the Geiger-Mueller type, and their location, range, current trip setting, and alarm and meter readout locations were described in Applicant's testimony. These monitors would quickly warn workers of any increase in direct radiation levels, and they would also respond to increases in gaseous radioactive contaminants released from the pool water. In addition, a portable Continuous Air Monitor ("CAM") located on the refueling floor contains a scintillation type detector with a local meter, recorder and alarm. If airborne particulate or gaseous activity increase to a preset level, the local alarm will sound. In addition, the CAM is used to collect particulate and iodine samples which are removed to a counting room for daily analysis. During refueling outages, additional CAM's may be placed on the refueling floor as recommended by the Dresden Station Rad-Chem Department. Finally, the reactor building ventilation monitoring system utilizes, in addition to four of the area monitors described above, four more monitors in the reactor building ventilation ductworks. Abnormal releases to the environment are prevented by switching the ventilation exhaust to the standby gas treatment system on alarms by either the area or ventilation monitors. The vent duct monitors have a range of 0.01-100 mrem/hr, an alarm point of 10 mrem/hr., and they alarm in the main

⁹²Malafeev at pp. 1-3; Adam at p. 7; NRC Staff Ex. 1, pp. 4-8; Tr. 528, 538-41.

⁹³Malafeev at p. 3; Adam at pp. 7-8; Tr. 562-67.

control room. The vent duct monitors therefore also serve to protect workers by notifying control room personnel of increased radiation in the fuel pool area.⁹⁴

134. There are no radiation monitors which continuously and directly measure radioactivity concentrations in the pool water. None are needed because the existing system of area radiation monitors and CAM's, as well as the portable monitoring instruments and personal monitoring devices described below, are adequate to detect radiation in the area around the pool and thereby to protect workers, who work around the pool, not in the pool. If a diver is needed, a continuous radiation monitor will be lowered into the pool with him.⁹⁵

135. Contention 5 states that there is no assurance that the health and safety of the workers will be adequately protected during rack removal and installation. In addition to the system of area monitors, ventilation monitors, and CAM's described above, workers at Dresden Station are protected from unsafe radiation exposure by numerous other measures including personnel monitoring, which involves the use of film badges, pocket dosimeters, timekeeping in high radiation or airborne areas, and periodic whole-body counting and isotopic analysis to check for ingestion of radioisotopes. Dose-rates and contamination levels in all work areas are routinely measured, and access to high radiation areas and airborne areas is controlled. Station procedures for control of occupational exposure conform to all federal standards.⁹⁶

136. The proposed full reracking will be accomplished through a step-wise procedure in which all the fuel stored in each pool will first be moved to the south end of the pool. The old racks at the north end will be removed, the vacated pool floor will be vacuumed, the new racks will be installed, the neutron attenuation tests will be conducted to verify the presence of Boron, and the fuel will be placed in the new racks at the north end of the pool. The process of moving fuel, removing old racks, vacuuming, installing and testing new racks will proceed north to south until all but six of the new racks are installed. These six racks will be stored indoors at the Station to leave room for the control blade storage until additional fuel storage space is needed. The racks will not be carried over stored spent fuel at any time, and this prohibition will be incorporated in the Technical Specifications accompanying the proposed license amend-

⁹⁴Adam at pp. 10-12.

⁹⁵Supplemental testimony of Seymour Block (Block), Tr. 600-02, 631-34; 639-40, following Tr. 638; 647-49. In Block's opinion, a water monitor might give a more prompt response to any increase in radioactivity in spent fuel pool water than an area monitor or air monitor would, but this did not change his conclusion that there is no need for such a water monitor. Tr. 649.

⁹⁶Ragan, at p. 7.

ments.⁹⁷ The proposed modification limited to installation of five racks in the Unit 3 SFP will be accomplished similarly by removing 13 old racks at the northernmost end of the Unit 3 SFP and replacing them with 5 new racks (§ 26, *supra*).

137. The Applicant originally estimated the occupational exposure associated with the entire rack replacement operation to range from 18 to 47 man-rem,⁹⁸ which represents a small fraction of the total annual man-rem burden from occupational exposure at Dresden Station. Installation of five racks followed by twenty-eight will result in an additional 1/2 man-rem. Subsequent operation of the spent fuel pools with increased quantities of stored spent fuel assemblies will cause only a negligible (less than one per cent) increase in annual occupational doses. Although the Applicant does not have a formal written ALARA program governing Station operations, the proposed spent fuel pool modification and subsequent operation of the pools will be performed in a manner that will maintain exposures as low as reasonably achievable (ALARA).⁹⁹

138. For full reracking the two alternative methods of disposing of the old racks discussed in the NRC Staff's June 6, 1980 Safety Evaluation were cutting the old racks into small sections to significantly reduce the volume to be shipped to the burial site, or crating the racks whole to reduce the man-rem exposure. The matter was left open in the safety evaluation, allowing the Applicant to make the choice between these alternatives based on actual measurements of dose rates when the racks are removed from the pools.¹⁰⁰ Prior to the hearing Applicant pulled one of the old racks out of one of the Dresden pools and measured the dose rate. Based on this, Applicant changed its estimate of the dose rate required to crate the racks whole for disposal from a maximum of 0.6 man-rem to a total of 5.67 man-rem. It estimated the occupational exposure associated with shredding the racks and barreling the shreddings for disposal to be 14.7 man-rem, or an increase of about 9 man-rem over disposing of the racks whole. Crating the old racks and burying them whole would cost about \$300,000. Shredding the old racks and disposing of them in barrels would cost about \$135,000; including the cost of the shredding machine. Therefore, Applicant estimates a savings of \$165,000 associated with the shredding alternative. Moreover, Shredding the old racks will reduce the volume of waste thereby conserving low level waste burial site space.

⁹⁷ Ragan at p. 9; NRC Staff Ex. 1, Safety Evaluation at pp. 5, 10.

⁹⁸ NRC staff Ex. 1, Safety Evaluation at p. 10, Environmental Impact Appraisal at p. 7; Ragan at p. 8 and Attachment 2. This estimate was based on boxing the existing racks.

⁹⁹ NRC Staff Ex. 1, Safety Evaluation at pp. 10-11, Environmental Impact Appraisal at pp. 4-8; Block at pp. 3,5, Tr. 639, 644, 650-53, 656-57.

¹⁰⁰ NRC Staff Ex. 1, Safety Evaluation, at p. 11.

Shredding the racks will also reduce from about thirty-five to seven the number of shipments of radioactive waste required, thereby decreasing the chance of transportation accidents.¹⁰¹

139. The Appeal Board has observed, "The ALARA Standard contained in Part 20 is more easily stated than applied." *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Station), ALAB-455, 7 NRC 41, 57 (1978). This case presents two technically feasible methods of disposing of the old racks.¹⁰² Shredding and barreling the racks for disposal instead of burying them whole results in 9 additional man-rem, but it also involves an economic savings of \$165,000 and socioeconomic benefits associated with conserving burial ground space and minimizing shipments of radioactive wastes on the public highways.

140. Although the proposed method of disposal results in slightly higher doses than the disposal of the racks intact, the Board is satisfied that the proposed method is nevertheless acceptable under the ALARA criterion embodied in 10 CFR Part 20.

141. Contention 5 raises the possibility that occupational radiation hazards could arise during the rack replacement operations due to flooding of the pool area of spraying of water on workers. The Dresden pools have high water level alarms. While it is possible to overflow a pool by adding water at a sufficiently high rate, this does not result in flooding on the refueling floor. Excess water beyond the capability of the skimmer surge tanks would flow into air intake vents located about 3 inches about the high water level and cause low level contamination of the floors below. An event of this type occurred in the Unit 3 fuel pool on October 25, 1979 when an equipment attendant trainee inadvertently opened a valve supplying condensate water to the pool. No apparent damage was caused and appropriate corrective actions were taken to preclude repetition. The incident was minor in nature and could not have resulted in serious consequences. It is not possible to mistakenly open a wrong valve and drain a fuel pool.¹⁰³

142. It is unlikely that any water could be sprayed on workers during the proposed reracking. The racks will be carried over the pool with the main overhead crane system, previously reviewed and approved by the

¹⁰¹Tr. 551-55.

¹⁰² By affidavit of Robert F. Janecek, dated July 9, 1981, this Board was informed by Applicant of another potential alternative of disposition of the current Dresden Units 2 and 3 spent fuel storage racks, namely, relocation to Applicant's Quad Cities Nuclear Station for installation in that Station's SFP's. Additionally, a method of chemically cleaning the racks to remove surface contamination is being investigated. If successful, the decontaminated racks may be sold as scrap. Tr. 1023-25.

¹⁰³Ragan, at p. 11 and Attachment 4, at pp. 5-6.

Staff as single failure proof.¹⁰⁴ It is possible that water could be sprayed on workers during hydro-lazing of the old racks after their removal from the pool. During the reracking workers will be wearing protective clothing designed for the task. The dose rate if a worker's face were to be sprayed with Dresden pool water is estimated to be on the order of 10 to 20 millirem per hour. If this were to occur, a decontamination procedure would be executed. Therefore, there would be no integrated dose of any consequence.¹⁰⁵

143. The Institute of Nuclear Power Operations (INPO) recently issued Report No. EA 80-01 dated September 12, 1980 entitled, "Evaluation of Dresden Nuclear Power Station."¹⁰⁶ The INPO audit team determined that, within the scope of their evaluation, the plant is being safely operated by an experienced, capable and dedicated staff. However, they noted opportunities for improvement in a number of areas, including the Station's ALARA program. In response to this recommendation, in May 1980, Applicant hired Scientific Applications, Inc. to develop a formal ALARA program for its nuclear stations. The project is divided into four sections: evaluation of existing activities, recommendation of one or more ALARA organizations, implementation of the program, and testing and training of personnel. Applicant produced as witness the head of the Health Physics Program at the Dresden Station to respond to questions about this project.¹⁰⁷ As of November 21, 1980 the evaluation had been completed and recommendations for an ALARA organization made to Applicant's corporate office. The ALARA organization would be a functional group for implementing the ALARA program at the Station. The ALARA program was due to be implemented at the Dresden Station by December 31, 1980. Subsequent to that time, as part of the final test phase, a formal training program in regard to that ALARA program will be developed and implemented.¹⁰⁸

144. The INPO audit team also recommended improvements in training in the maintenance, radiochemistry and technical staff departments at the Dresden Station. In response, Applicant has established responsibilities in each department and initiated other actions to meet training needs. In the long term a reorganized Production Training Center scheduled for

¹⁰⁴ Supplemental testimony of Millard L. Wohl (Wohl) at p. 2, following Tr. 674; Pickens at p. 25.

¹⁰⁵ Tr. 649-50; Ragan, at pp. 11-12. the dose estimate provided by Mr. Block did not consider inhalation of ingestion of the pool water by the worker. Tr. 654.

¹⁰⁶ Intervenor's Ex. 12.

¹⁰⁷ George Arthur Myrick (Myrick); Tr. 609-19.

¹⁰⁸ Intervenor's Ex. 12 at pp. 2, 35-36; Tr. 615-16.

operation in late 1982 will have responsibility for the review and development of all training programs. Standardized training programs are being developed over a two year period commencing January 1981.¹⁰⁹

145. There presently is a health physics training program, and workers receive training in accordance with 10 CFR Part 19 before they are allowed to go into radioactive materials areas. Applicant indicates that there will be detailed training of all workers involved prior to the fuel rack replacement operations, however, the procedures for this training had not yet been written at the time of the hearing.¹¹⁰

146. A recent appraisal by USNRC Office of Inspection and Enforcement, Region III, indicated that numerous weaknesses exist in the Dresden Station health physics program, including insufficient management support for professional health physicists, radiation chemistry technician training, access control, contamination control, abnormal condition surveillance, monitor operability surveillance and emergency response. The NRC Staff's assessment indicated that the identified weaknesses required correction to enable Applicant to perform well in normal and abnormal conditions. However, the present Dresden Station health physics program was considered adequate for continued operation while achieving acceptable corrective action. Staff's witness on Contention 5 had no knowledge of the I&E Health Physics Appraisal. Applicant has responded to each of the weaknesses in the NRC Health Physics Appraisal, including corrective steps taken or to be taken and schedules for completion.¹¹¹

147. The Board has carefully reviewed Intervenor's Exhibits 12, 13A, and 13B. While these documents show there are deficiencies in Dresden Station operations, particularly in the health physics area, they also show that the Applicant is taking action to correct the deficiencies so identified, and that the NRC Office of Inspection and Enforcement is monitoring Applicant's performance in this regard. It appears that the new formal ALARA program is being implemented on schedule and will be in place by the time the racks are installed. Similarly, while overall training activities at the Station need improvement, the evidence shows that workers involved in the rack replacement will receive adequate training.¹¹²

148. The Board finds that the Dresden spent fuel pool clean-up system and the radioactive waste disposal system are adequate to support the proposed increase in spent fuel storage capacity with 5-racks or with the full 33-rack installation.

¹⁰⁹Intervenor's Ex. 12 at pp. 14-15; Tr. 617-18.

¹¹⁰Tr. 616-20.

¹¹¹Intervenor's Exhibit 13A (cover letter); Intervenor's Ex. 13B; Tr. 644, 646.

¹¹²Intervenor's Ex. 12, at pp. 35-36; Tr. 612-20, 629-30.

149. The Board finds that there is sufficient monitoring equipment with adequate range and sensitivity in the vicinity of the Dresden spent fuel pools to detect abnormal releases of radioactivity from the pools as modified, to provide adequate warning to workers of hazardous conditions, and prevent undue exposure to workers in excess of ALARA.

150. The Board finds that there is reasonable assurance that the health and safety of the workers will be protected and that occupational exposures will be as low as reasonably achievable during the proposed rack replacement and subsequent operation of Dresden Station with increased quantities of stored spent fuel. The Board also finds that adequate consideration has been given occupational radiation hazards due to accidents occurring during rack removal and installation, such as flooding of the pool area or water spraying on workers.¹¹³

151. The Board shares the concerns of Intervenor in regard to the health and safety of workers at Dresden Station and stresses that implicit in these findings is the expectation of the Board that the ALARA program will be rigorously implemented.

G. Accident Analysis

152. Intervenor's Contention 6 asserts:

The Application inadequately addresses the increased consequences of accidents considered in the FSAR, SER and FES associated with the operating license review of Dresden Units 2 and 3 due to the increased number of spent fuel assemblies and additional amount of defective fuel to be stored in the spent fuel pool as a result of the modifications.

153. The Final Safety Analysis Report (FSAR) was prepared in November 1967 and submitted as part of Applicant's operating license application. Two Safety Evaluation Reports (SER) for Dresden Units 2 and 3 and a single Final Environmental Statement (FES) for both units were issued by the Atomic Energy Commission in 1969, 1970 and 1973 to document the operating license stage safety and environmental review.¹¹⁴

154. Four design basis accidents were considered in the FSAR and SERs: control rod drop, main steam line break outside the drywell, loss of reactor coolant accident, and refueling accident. Only the last accident is relevant to this proceeding.

¹¹³See also ¶ 141 and 142, *supra*.

¹¹⁴Pickens at pp. 26-27.

155. A fuel handling accident postulated to occur in the spent fuel pool would have consequences similar to those of the refueling accident. The refueling accident considered in the FSAR and SER assumed the drop of a 7×7 fuel assembly onto the reactor core from the maximum height allowed by the refueling equipment (less than thirty feet) twenty-four hours after reactor shutdown. Using a kinetic energy analysis, it was concluded in the FSAR that ninety-two fuel rods could be perforated. However, even assuming 445 fuel rod failures, the radiological effects of the accident were calculated to be a small fraction of 10 CFR Part 100 limits. The Staff, utilizing more conservative assumptions, also concluded that the doses would remain well below 10 CFR Part 100 guidelines.¹¹⁵

156. The FES prepared at the operating license stage covered a number of fuel handling accidents involving 7×7 fuel assemblies in the reactor core and in the pools. These used assumptions defined in former 10 CFR Part 50, Appendix D. The accidents considered were: fuel bundle drop (in core) heavy object drop onto fuel in core fuel assembly drop in fuel rack and heavy object drop onto fuel rack. In each case the consequences were calculated to be a small fraction of regulatory limits.¹¹⁶

157. The proposed spent fuel pool modifications will not change the manner or frequency of refueling. Therefore, the probability of accidents involving dropping fuel or heavy objects onto the reactor core, as discussed in the FSAR, SER and FES, is not increased. However, rack replacement involves about 3700 additional fuel movements in the two storage pools not contemplated when Dresden Units 2 and 3 were licensed. This is an increase of about 5-6% over the 66,000 fuel moves anticipated over the lifetime of both units. The number of additional fuel movements is increased by about 650 for Applicant's five rack proposal which represents a further increase of 1% of the total number of fuel moves anticipated over the lifetime of Dresden Station. A corresponding slight increase in the probability of a fuel assembly drop in one of the pools will result. However, the fuel to be moved during the proposed rack replacement will have been stored for a period longer than the decay period assumed in the FES for the fuel assembly drop in fuel rack accident. Not granting the proposed amendments might also result in an increased number of fuel moves over the lifetime of the Station. Applicant then would probably have to shift fuel among the Dresden pools to prolong Station operation pending availability of an away from reactor (AFR) facility.¹¹⁷

¹¹⁵ Pickens at p. 27, Attachments 4, 5 and 6; Supplemental Testimony of Millard L. Wohl (Wohl) on Contention 6 at pp. 1-2.

¹¹⁶ Pickens at pp. 20-27, Attachment 1 at p. 7-4, and Attachment 3. 10 CFR Part 50, Appendix D was revoked effective July 18, 1974, and replaced by 10 CFR Part 51.

158. The proposed rack replacement will not alter the fuel authorized to be used in the Dresden reactors. Therefore, it will not affect the consequences of the fuel drop accidents considered in the FSAR, SERs, or FES. However, in 1974 the NRC authorized the Applicant to use 8×8 fuel also at Dresden Units 2 and 3. There are the same number of fuel assemblies in the reactor core when 8×8 fuel assemblies are used as when 7×7 fuel assemblies are used. The average 8×8 fuel assembly operates at the same power level as a 7×7 fuel assembly resulting in the same average activity per fuel assembly. Therefore, the average activity per fuel rod in an 8×8 assembly is less than in a 7×7 fuel assembly. The refueling accident described in the FSAR and SER was reanalyzed in 1974 for 8×8 fuel. It was found that the consequences of 8×8 fuel are less than for 7×7 fuel. The accidents described in the FES have not been specifically reanalyzed for 8×8 fuel. However, because the activity per rod in 8×8 fuel assemblies is less, the consequences of these accidents should also be less.¹¹⁸

159. The Applicant also considered the structural effects of a dropped fuel assembly hitting one of the new storage racks. This analysis showed that the struck storage rack would withstand the damage and still maintain K_{eff} below 0.95.¹¹⁹

160. The main overhead crane system will be used to move the fuel racks during the replacement operation. This crane was approved for up to 100 ton loads by the NRC Staff in 1976. The crane meets the intent of NUREG-0554, entitled "Single Failure Proof Cranes for Nuclear Power Plants." During the proposed rack replacement administrative controls and technical specifications will be implemented to prevent the racks from being carried over stored fuel.¹²⁰

161. If a storage rack is dropped in one of the spent fuel pools during the proposed replacement operation, the pool liner might be torn. However, the concrete and steel structure of the pool should not suffer significant damage. Water leaking through the liner would be collected by drainage troughs leading to the reactor building floor drain system. There are four outlets from each fuel pool, each of which is valved closed. Therefore, no pool water should escape to the environment.¹²¹

162. There are three different methods by which make-up water can be put into the storage pools, other than by using hoses. A manual valve at the pool can be used. This valve is normally used to make up for

¹¹⁷Pickens at pp. 21-23; Wohl at pp. 2-3; Jancek Five Rack Testimony at p. 8.

¹¹⁸Pickens at pp. 23-28; Wohl at p. 3; Tr. 689-700.

¹¹⁹Pickens at p. 22 and Attachment 3; Applicant's Exhibit 1, Section 3.4.3.5; Tr. 453-54.

¹²⁰Pickens at pp. 25-26; Wohl at p. 2; NRC Staff Ex. 1, Safety Evaluation at p. 10, Environmental Impact Appraisal at pp. 8-9; Adam Attachment 2; Tr. 665-66, 674-77.

¹²¹Pickens at pp. 23-26; Tr. 658-60.

evaporation losses. A second method is provided by a six inch line from the condensate storage system. This line joins the spent fuel pool cooling and cleanup system at the pumps downstream of the heat exchangers. The spent fuel pool pumps and heat exchangers are located about two floors from the storage pool floor. They would be accessible in the event of high airborne activity or high contamination levels on the storage pool floor, but not in the event of extremely high radiation levels on every floor of the reactor building. Further, a manual valve in the radwaste facility can be used to tie the plant condensate water system into the fuel pools directly. The radwaste facility is on the far side of the turbine building from the reactor building. Thus, the manual valve should be accessible under any accident circumstance. There are large supplies of make-up water at the Dresden Station.¹²²

163. The spent fuel storage pools are Class 1 seismic structures. They are designed to withstand the Operating Basis Earthquake (OBE) and Safe Shutdown Earthquake (SSE) defined for Dresden Units 2 and 3. Each pool was analyzed individually. The structural analysis did not consider any other event occurring at the same time as the seismic event. The new storage racks are designed to withstand these seismic loadings. The existing structure of the spent fuel pools is adequate to withstand the additional loads due to five storage racks. Therefore, the consequences of the occurrence of the Dresden OBE and SSE earthquakes would not be increased by the proposed installation of five racks. Resolution of whether the existing structures are adequate to withstand the additional loads of 33 racks during the SSE must await further analysis. Similarly, the reactor building is designed to withstand the impact of tornado-driven missiles. Because the installation of new storage racks will not require structural modification to the reactor building, the consequences of the design-basis tornado will not be increased.¹²³

164. The Board finds that the consequences of the accidents considered in the FSAR, SER and FES associated with the operating license review of Dresden Units 2 and 3 will not be increased as a result of issuance of the proposed license amendment permitting installation of five high density storage racks in the Unit 3 SFP.

¹²²Tr. 588-95.

¹²³Pickens at pp. 28-29; Applicant's Ex. 1, Sections 3.4 and 3.5 NRC Staff Ex. 1, Safety Evaluation Analysis at pp. 6-9; Affidavit of Robert F. Janecek correcting inconsistencies in Applicant's former testimony, of May 6, 1981; Tr. 661-62. Staff Ex. 2 at p. 4.

H. Fuel Channel Deformations

165. A fuel assembly for a boiling water reactor has two major components, a fuel bundle and a fuel channel. The fuel bundles presently used at Dresden Units 2 and 3 have 64 rods in an 8×8 array. The rods are held in position by an upper tie plate, a lower tie plate, and seven grid spacers.¹²⁴

166. A typical fuel channel is a square with an inside diameter of 5.278 inches, a wall thickness of 0.080 inches and a length of about 13 1/2 feet. The fuel channel is placed over the bundle of fuel rods. It completely surrounds the array of fuel rods on the four lateral sides. The channel is attached to the fuel bundle at one corner of the upper tie plate assembly by a channel fastener bolt. The dry weight of a fuel assembly is approximately 680 lbs., including the channel which weighs approximately 64 lbs.¹²⁵

167. When a fuel assembly is irradiated in the reactor, normal hydraulic pressure gradients and neutron flux gradients cause the dimensions of the fuel channel to change from the original dimensions. The potential safety concern raised by Applicant in November 1980 was that these channel deformations might be large enough to affect the clearances between some fuel channels and the walls of storage locations in the proposed racks.¹²⁶

168. An analysis was made of the worst-case combinations of the largest measured channel deformations and the minimum size storage locations in the proposed racks. This included all allowable manufacturing tolerances for the proposed racks compounded in the most adverse way. The analysis showed that there would be a potential for a maximum interference of about 1/4 inch.¹²⁷

169. If this interference occurs, it would cause the channel to rub against the wall of the storage tube during insertion, storage, and removal of the fuel assembly. Applicant addressed the loads which this rubbing

¹²⁴ There are also fuel bundles stored in the Dresden pools with 49 fuel rods in a 7×7 array. Testimony of Carl R. Mefford, (Mefford) Related to Capability of Fuel Assemblies to Accommodate Loads Applied During Insertion and Removal from Spent-Fuel Storage Pools, at p. 2, following Tr. 1013.

¹²⁵ Testimony on Dimensional Changes of BWR Fuel Channels as a Result of Irradiation and on Non-GE Fuel Bundles and Channels by Dennis O'Boyle (O'Boyle) at pp. 2-4 and figures 1-4, following Tr. 1013; Tr. 738-41.

¹²⁶ O'Boyle at pp. 1-2.

¹²⁷ Testimony of James D. Gilcrest Related to Fuel Channel Bowing dated January 16, 1981 (Gilcrest supplemental testimony) at p. 4, following Tr. 1013.

could impose on the channel. There would be no damage to the fuel channel, the fuel rods or the proposed racks. This is true even if the maximum 1/4 inch interference occurs.¹²⁸

170. The drag loads for the maximum interference case are not sufficient to cause a fuel assembly to become stuck in the proposed racks. Both the Applicant and the Staff testified that it would not be a safety problem, even if the maximum or worst case interference occurs.¹²⁹

171. The three modes of reactor-induced fuel channel deformation are twist, side-wall bulging, and longitudinal bowing. Measurements and analysis indicate that the amount of channel twist is small and does not significantly affect the clearance between the fuel channel and the fuel storage rack.¹³⁰

172. Bulging of the side-wall of a channel occurs as a result of a pressure differential in the coolant across the channel wall. This can produce a slight outward displacement of the four sides of the channel. The outward displacement of the walls (bulging) is usually less than 0.060 inches. This is small compared to the overall cross-sectional dimension of the channel. Therefore, the channel remains essentially square. It is possible to get bulges greater than 0.060 inches in Dresden-2 channels. Side-wall bulge is largest about 5 to 6 feet from the bottom of the channel and the magnitude of the bulge decreases toward both the top and the bottom of the fuel channel.¹³¹

173. Fuel channel bowing results from fast neutron flux gradients across the walls of a channel when the fuel assembly is placed in certain core locations. This can cause a displacement of the mid-elevation of the channel with respect to the upper and lower ends of the channel. The largest channel bowing generally occurs when channels reside for several cycles of reactor operation in locations near the periphery of the core where neutron flux gradients are highest.¹³²

174. Between July and November of 1980 Applicant measured the dimensions of 875 irradiated channels at its Quad Cities Nuclear Power Plant. The Quad Cities reactors are BWR/3 reactors like Dresden Units 2 and 3. The fuel bundles and fuel channels used at Quad Cities and Dresden are similar. The Quad Cities measurements were made to deter-

¹²⁸Gilcrest supplemental testimony at p. 7-8; Mefford at p. 3-4.

¹²⁹Supplemental Testimony of Ronald M. Ragan (Ragan supplemental testimony at p. 3-4 following Tr. 1013; Supplemental Testimony of Horace K. Shaw on Fuel Channel Bowing (Shaw) at p. 4, following Tr. 1013; Tr. 956-59, 989.

¹³⁰O'Boyle at p. 5; Tr. 757-62, 812-13, 819-20.

¹³¹O'Boyle at p. 5; Tr. 747-49, 781.

¹³²O'Boyle at pp. 5-6; Shaw at p. 2; Tr. 752.

mine whether the in-core life of fuel channels could be extended without leading to channel deformations so large as to cause interference between channels and reactor control blades.

175. As these measurements at Quad Cities were made, it was recognized that the combination of fuel channel bow and bulge for some channels was greater than the minimum clearance dimensions for storage locations allowed by the engineering drawings for the proposed Dresden storage racks.

176. After disclosing the potential problem to the Board in December 1980, the Applicant analyzed a total of 1736 channel sides measured at Quad Cities in order to evaluate the fit of the irradiated channels in the proposed Dresden storage racks. Approximately 86% of the channel sides had a total deformation (bow plus bulge) of less than 0.150 inches over the 162.2 inch length of the channel. A bow plus bulge deformation of less than 0.200 inches was found in 94.5% of the channel sides measures. Less than 1% (15) of the surfaces measured had a total bow plus bulge deformation of greater than 0.300 inches. Only two channel surfaces had a total deformation exceeding 0.350 inches. The maximum bow plus bulge was 0.420 inches. This was found in only one channel side. The next largest bow plus bulge was 0.390 inches. This was measured again on only one channel side.¹³³

177. The minimum between a straight, unirradiated fuel channel and the wall of any storage position in the proposed Dresden spent fuel storage racks is 0.346 inches total. The clearance is 0.173 inches on each side of a stored channel, assuming the channel is centered in the storage location. This clearance exists in the inter-tube storage positions. The corresponding clearance inside a storage tube location is greater (0.496 inches total or 0.248 inches on each side).¹³⁴

178. The "worst case" situation would occur if a Dresden fuel channel with bow plus bulge equal to the maximum value measured at Quad Cities (0.420 inches) was placed in a storage location in the Dresden racks with the minimum allowable clearance of 0.173 inches. The resulting interference would be approximately 0.25 inches.¹³⁵

179. Applicant initially described another potential interference, unrelated to fuel channel deformation, which might exist at the top of the inter-tube storage positions between the channel spacer button at the top of

¹³³ O'Boyle at p. 6-9; Shaw at p. 2-3; The channel with bow plus bulge of 0.420 inch had gone through five reactor cycles, four of them on the periphery of the core. Tr. 747, 752, 774-78, 809-12.

¹³⁴ Gilcrest supplemental testimony at pp. 3-4; Tr. 739-40. The storage racks are a checkerboard pattern of stainless steel tubes containing Boral. Fuel assemblies can be stored inside the tubes and in the inter-tube locations. Applicant's Ex. 2.

¹³⁵ Gilcrest supplemental testimony at p. 4.

the fuel channel and the lead-in clips which create the minimum dimension of each storage location. Applicant has committed itself to checking each storage location in each rack with a plug gauge prior to installation in the pools to ensure that the dimension between the lead-in clips is no less than the maximum dimension of the channel at the spacer button, 5.768 inches. If necessary, Applicant will grind down the lead-in clips to achieve this dimension, thereby eliminating any interference at the top of the storage location.¹³⁶

180. The load required to remove a fuel assembly from the proposed racks would be composed of the drag due to such interference and the dead weight of the fuel. The drag force to overcome the worst case interference of 0.25 inches was calculated to be 310 pounds. This assumed a conservative coefficient of friction at 0.5. Therefore, the maximum load which would be necessary to remove a fuel assembly from one of the proposed Dresden storage racks would be 990 pounds. This would include the weight of the fuel assembly (680 pounds ignoring a buoyancy force of 80 pounds) plus the drag due to channel bow interference (310 pounds).¹³⁷

181. The maximum lift that the Dresden fuel grapples can exert in the fuel assembly is limited to 1100 pounds by an electrical interlock.¹³⁸

182. A lifting load of 990 pounds would not damage the fuel assembly or the proposed storage racks. The only components of the fuel assembly which would undergo significant loading changes would be the upper tie plate lifting bail and the channel corner gusset. The lifting force exerted by the crane grapple is transmitted to the fuel assembly by the lifting bail. The design load of the upper tie plate lifting bail is 2040 pounds. The actual load at which the lifting bail would fail is much greater. Of the 990 pounds applied to the bail by the grapple, only 374 pounds (the drag force of 310 pounds and the channel weight of 64 pounds) would be transmitted to the fuel channel through the channel corner gusset. General Electric performed a test showing the deformation of the channel corner gusset was essentially elastic up to 3240 pounds and did not fail up to 4080 pounds.¹³⁹

183. The drag force of 310 pounds would also be transmitted to the affected storage rack. This would not tip the 18,000 pound rack or exceed allowable stresses as defined in the U.S. NRC Standard Review Plan 3.8.4.¹⁴⁰

¹³⁶ Gilcrest supplemental testimony at p. 3, and figures 1 and 2; Tr. 736, 796-97, 888-89, 920, 923, 944-47.

¹³⁷ Gilcrest, supplemental testimony at p. 5-7; Shaw at p. 3; Ragan supplemental testimony at 1; Tr. 946-50, 957-58; 979.

¹³⁸ Ragan, supplemental testimony at p. 2; Tr. 887-88, 907-09.

¹³⁹ Mefford at pp. 3-4; Gilcrest supplemental testimony at p. 7; Tr. 866-67, 949.

¹⁴⁰ Gilcrest supplemental testimony at p. 8; Shaw at p. 3; Tr. 933-34, 962.

184. Insertion of a fuel assembly under the worst case 1/4 inch interference would be resisted by a drag force of 310 pounds. The fuel assembly weight exceeds this drag force. Therefore, the fuel assembly would insert fully into the rack by its own weight. The only fuel assembly component which would be loaded during insertion is the channel fastener bolt. The load on this bolt would be 246 pounds (the drag force of 310 pounds minus the channel weight of 64 pounds). The 246 pounds plus the tensile load of 1280 pounds, produced when the bolt is tightened, is less than the certified breaking load of the channel fastener bolt (3150 pounds).¹⁴¹

185. A number of conservative assumptions were made in analyzing the channel deformation issue including the following:

- (a) a maximum channel bow plus bulge of 0.420 inches was assumed to occur, even though
 - new fuel channels with improved heat treatment and fabrication processes are being used at Dresden.¹⁴²
 - fuel channel measurements are underway at Dresden which will be used to prevent reuse of channels having bow plus bulge greater than 0.125 inches.¹⁴³
 - in-core locations for fuel channels will be selected such that bowing is not compounded by multi-cycle irradiation on the core periphery.¹⁴⁴
- (b) all manufacturing tolerances for the proposed racks were assumed to combine in the most adverse way to result in the minimum allowable storage dimensions.¹⁴⁵

¹⁴¹ During normal insertion of fuel assemblies in storage racks at Dresden, an additional 500 pound weight of telescoping cans, which provide rigidity to the fuel gapple hoist, rests momentarily on the upper tie plate of the fuel assembly being inserted. This would further assure full insertion of the fuel assembly. Gilcrest supplemental testimony at p. 8; Mefford at p. 4; Tr. 867, 878-79, 905-09.

¹⁴² O'Boyle at p. 10; Tr. 781-82, *in camera* 790, 792.

¹⁴³ O'Boyle at pp. 10-11; Tr. 798, 987, 992.

¹⁴⁴ O'Boyle at pp. 10-11; Tr. 790, 798.

¹⁴⁵ Gilcrest supplemental testimony at p. 4; Mefford at p. 1.

- (c) the channel with the maximum bow plus bulge measured at Quad Cities was assumed to be placed in the minimum sized storage location.¹⁴⁶
- (d) the fuel assemblies were assumed to be centered in the storage location, although the top of the fuel assemblies is free to tip away from the direction of bow reducing the possible interference.¹⁴⁷
- (e) a coefficient of friction of 0.5 was assumed although a more realistic value for Zircaloy against steel may be more nearly 0.15.¹⁴⁸
- (f) a fuel assembly dry weight of 680 pounds was assumed rather than the submersed weight of approximately 600 pounds¹⁴⁹

186. The analysis did not include the effects from the formation of blisters in the storage tubes due to hydrogen gas bubbles because it is considered unlikely to occur. The effect of creases formed in the Boral during fabrication were not included in the analysis. Such creases occur near the end of the channels, which is not the area of bowing. The creases will not create interference with the storage tube lead-in clips.¹⁵⁰

187. The analysis of fuel assembly design and channel dimensional measurements applies to fuel bundles and channels supplied by the General Electric Company. Exxon Fuel and associated fuel channels from Carpenter Technology Corporation ("CarTech") purchased in 1970 which may be used at Dresden in the future, need not be considered in this partial initial decision dealing with racks for the current fuel.¹⁵¹

188. Should it be necessary to place Exxon-type fuel assemblies in these racks in the future, the materials used in the upper tie plates of the General Electric and Exxon fuel bundles are nearly identical and the designs are similar. The materials and dimensions of the General Electric and CarTech channels are nearly identical. The loads that the new fuel components can withstand are not significantly different than similar fuel components supplied by General Electric Company.¹⁵²

¹⁴⁶Gilcrest supplemental testimony at pp. 4, 8.

¹⁴⁷Gilcrest supplemental testimony at pp. 2,4.

¹⁴⁸Gilcrest supplemental testimony at p. 5; Tr. 957-60, 978-79.

¹⁴⁹Gilcrest supplemental testimony at p. 8; Ragan supplemental testimony at p. 1; Tr. 864, 958.

¹⁵⁰Tr. 930-32.

¹⁵¹O'Boyle at p. 12; Tr. 781; *in camera* Tr. 790, 792.

¹⁵²O'Boyle at pp. 12-13; *in camera* Tr. 784-87; Tr. 950-54.

189. The effect of manufacturing tolerances in the CarTech and General Electric fuel channels was addressed. This included a brief *in camera* session on certain proprietary information. Any increase in potential interference between the fuel channels and the storage racks, and therefore any increase in the loads imposed on the fuel assemblies and racks, due to these tolerances will be negligible.¹⁵³

190. Applicant's witness said that he expects galvanic corrosion between the Boral and the stainless steel walls of the storage tubes to be quite limited. The limitation would be due to the low conductivity of the pool water and by the naturally occurring oxide films on the Boral and on the stainless steel. If galvanic corrosion were not so limited so that the entire thickness of the Boral was converted to corrosion products, the tube wall could swell by a maximum of 0.180 inches. This swelling would affect the storage locations within the proposed storage tubes, rather than the inter-tube locations. The inner stainless steel walls of the storage tubes are thinner than the outer walls. Thus the inner walls would tend to bulge more readily from the corrosion product. Such swelling would be localized. This swelling, in combination with channel bow and bulge, might present a possible impediment to insertion or withdrawal of a fuel assembly. Although the witness considered this highly improbable he recommended periodic mandrel testing of unfilled storage tubes in the proposed racks.¹⁵⁴

191. Subsequently the Applicant informed the Board that it had determined not to accept the recommendation for mandrel testing. A maximum interference of 0.352 inches would occur if 0.180 inches of localized swelling in a storage tube wall occurred opposite a channel having a maximum bow plus bulge of 0.420 inches. To remove a fuel assembly with this much interference would require a force of 436 pounds. A maximum fuel assembly handling bail load of 1116 pounds would be encountered. This is well within the capability of the affected fuel components.¹⁵⁵

192. A properly designed mandrel test would help determine if a particular storage location could accommodate a bowed fuel assembly. Such tests would probably not cost very much. However, to conduct mandrel testing would require three men working above the pools for at least 20 hours per year. Exposure rates of about 3 to 5 millirem per hour would be encountered. Although the resulting occupational exposures

¹⁵³ Gilcrest, supplemental testimony at p. 9; Tr. 735-36; *in camera* Tr. 784-92; Tr. 800-01; 803-05; 807-09; 929-30, 950-54, 957.

¹⁵⁴ Draley, testimony at pp. 7-8, Tr. 353-57, 372-73, 377-78.

¹⁵⁵ Ragan, supplemental testimony at pp. 4-5, Tr. 954-57.

would be small, they would not be as low as reasonably achievable (ALARA). The Staff said exposure of workers during testing is not justified.¹⁵⁶

193. Channelled fuel assemblies are not expected to become stuck in the proposed storage racks. However, such an event was reviewed. A stuck fuel assembly would not be a safety problem unless efforts to free the assembly led to perforation of the fuel rods and a release of radioactivity. To ensure that excessive loads are not imposed on a stuck assembly, Applicant's Dresden Fuel Handling Procedures are being revised. The revised procedures will provide that, if the 1100 pound fuel grapple interlock trips as a fuel handler is attempting to lift an assembly out of the racks, he will call for the assistance of the licensed fuel handling foreman. The foreman would notify station management and obtain any technical support needed. The grapple interlock can be raised to 1500 pounds by a station electrician if additional lifting force is required by special circumstances approved by station management. There is not way to force a partially inserted fuel assembly down into the storage location. Once the affected fuel assembly is removed, it could be inserted in another, larger storage location in the proposed racks, of the fuel assembly could be dechannelled and the fuel bundle stored separately from its channel in the racks. A channel which would not fit in any storage location could be stored separately from the pool beside the racks, with no effect on criticality.¹⁵⁷

194. The Board finds that the possibility of reactor-induced fuel channel deformations does not pose significant health and safety problems for the proposed spent-fuel modifications for Dresden Units 2 and 3.

195. The Board finds that even the worst credible interferences that might occur between the fuel channel with the largest reactor-induced deformations (bulge, bow and twist) and the minimum sized storage location in the proposed Dresden fuel storage racks will not lead to damage of the fuel assembly or the proposed racks.

196. The testing of storage locations with a full scale mandrel would be feasible and conservative test. However, the Board finds that such testing is not required to be reasonably assured that fuel channel deformations will not pose a health and safety problem with the proposed fuel storage racks.

¹⁵⁶Tr. 893, 898, 901-03, 911-13, 990-92.

¹⁵⁷Ragan supplemental testimony at pp. 1-2; Tr. 842-43, 868, 886, 890, 907-09, 989.

I. Environmental Impact Appraisal And Safety Evaluation

197. The Staff's Safety Evaluation Report (SER), Environmental Impact Appraisal (EIA) and affidavit of Walter Brooks amending the SER were received into evidence as Staff Exhibit 1.¹⁵⁸

198. Intervenor in its proposed findings of fact (PF 55-61) submitted that the SER and EIA should be given no weight because in Intervenor's view the Staff did not submit for cross-examination witnesses knowledgeable, able, or qualified to testify in regard to these documents. Further, Intervenor faulted the Staff for not modifying the SER after June 6, 1980 though the Staff subsequently received information regarding changes in rack design, including a supplement to the design report on October 29, 1980 and information on fuel channel assembly bowing on or about November 7, 1980.¹⁵⁹ In Intervenor's view, the Staff should have presented for cross-examination the Staff personnel who actually authored each section of the SER and EIA (Intervenor's PF 57-59).¹⁶⁰

199. The EIA and SER were received in evidence after testimony by Paul O'Connor, the Staff project manager, who testified that in his role he knew the Staff members who prepared the documents, and had interacted with the reviewers of the documents. Upon cross-examination he named the reviewers who prepared the various sections and stated that in his capacity as project manager and sponsor of these documents he adopted the summary and conclusions set forth in the SER as his own.¹⁶¹ Absent requests from parties of the Board, the usual Staff practice is to have the project manager present the SER and EIA rather than have all the project personnel available for cross-examination.

200. Mr. O'Connor was available for cross-examination on relevant portions of the document, as were the witnesses presented by the Staff on each admitted contention and board questions. No requests were made during the evidentiary hearing for additional witnesses who had been identified as Staff reviewers by Mr. O'Connor. Accordingly, the objections which Intervenor poses in regard to the sponsorship of the EIA and SER, after the closing of this portion of the evidentiary record, are lacking in merit.

¹⁵⁸Tr. 117-18.

¹⁵⁹Tr. 151-57.

¹⁶⁰Tr. 129-135.

¹⁶¹Tr. 132.

201. In regard to the current status of the SER the Board finds that the SER should be updated to reflect the information received between June 6, 1980 and the close of the evidentiary record, i.e., after receipt of the analysis of the currently unresolved seismic issue (e.g., impact of the new racks on the spent fuel pool and walls during seismic events).¹⁶²

202. Based on the record before it, the Board finds that issuance of the license amendment requested in this proceeding, installation of five high density racks in the Dresden Unit 3 spent fuel pool, 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 (EIS). The Board finds that the SER is adequate to support the installation of the five racks, but that it should be supplemented to reflect information received subsequent to its date of preparation, June 6, 1980, as indicated in the immediately preceding paragraph.

III. CONCLUSIONS OF LAW

203. The Board has reviewed the evidence submitted by the parties in regard to Applicant's motion for approval of the 5 rack project, and in response to the Board's questions 3 through 10. The Board has also considered the proposed findings of fact and conclusions of law submitted by the parties on contested issues at the close of the hearings held on Commonwealth's application to modify the Dresden spent fuel pools 2 and 3. Consideration has been given the record which was made at the September 11, 1981 hearing on the motion to approve the 5 rack project. The Board makes the following conclusions of law:

1. The issuance of the license amendment requested in this proceeding, installation of five high density racks in the Dresden Unit 3 spent fuel pool, 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.

¹⁶²Tr. 1152.

2. The licensing Board in this case is not required to consider the five factors set forth in the Commission's "Notice of Intent to Prepare Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel," 40 Fed. Reg. 42801 (September 16, 1975). See "Notice of Finality of Commission Action with Regard to Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel (NUREG 0575)," 46 Fed. Reg. 14506 (February 27, 1981).
3. There has been no showing by Intervenor through filing a timely contention meeting the requirements of the Commission's Rules of Practice or otherwise, that there is a reasonable nexus between "systems interaction", and the subject matter of this proceeding.
4. There is reasonable assurance that the activities authorized by the requested operating license amendment 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 license, and provided that the commitments set forth below are followed.
5. The activities authorized by the requested operating license amendment will be subject to compliance with the Commission's regulations.
6. The issuance of the requested operating license amendment 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 and commitments set forth in the order below.

IV. ORDER

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 it is

ORDERED

that the Director of Nuclear Reactor Regulation make appropriate findings in accordance with the Commission's regulations and issue the appropriate license amendment authorizing the requested replacement of 13 spent fuel storage racks by 5 high density storage racks at Dresden Station Unit 3 spent fuel pool.

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 14.8 grams per axial centimeter.¹⁶³
2. No loads heavier than the weight of a single spent fuel assembly shall be carried over fuel stored in the spent fuel pool.¹⁶⁴

In deciding to grant the aforementioned license amendment, the Board has relied upon the following commitments by the Applicant:

1. A corrosion surveillance program for the racks to insure that any loss of neutron absorber material and/or swelling of the storage tubes is detected.¹⁶⁵
2. *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.¹⁶⁶
3. If one Boral plate is detected missing, the associated tube will be blocked to prohibit insertion of a fuel assembly. If more than one missing Boral plate is detected per pool, Applicant will remove the storage rack or racks containing any additional missing Boral plates from the pool. Such storage racks will not be replaced in the pool until a specific criticality analysis covering the proposed corrective action has been submitted to and approved by the NRC.¹⁶⁷
4. Before any storage rack is placed in the Dresden pools, Applicant will check each storage location with a plug gauge to confirm that the minimum dimension between the lead-in clips at the top of each storage location is at least 5.758 inches. If necessary, Applicant will grind down the storage clips to ensure this dimension is achieved.¹⁶⁸

¹⁶³NRC Staff Exhibit 1, Safety Evaluation at p. 3.

¹⁶⁴NRC Staff Exhibit 1, Safety Evaluation at p. 10.

¹⁶⁵Draley, prepared testimony attachment 6, following Tr. 341; Weeks, supplemental testimony at p. 3, following Tr. 434.

¹⁶⁶Tr. 595-596.

¹⁶⁷Tr. 595-596.

¹⁶⁸Gilcrest, Tr. 920.

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 Dresden Unit 3 spent fuel pool should be granted. Accordingly, the Board hereby orders the Applicant to keep these commitments until it is released from them by the NRC, and further, Applicant is ordered to include these commitments in the Dresden FSAR when it is updated.¹⁶⁹ Failure to implement these commitments 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 partial initial decision shall be effective immediately and shall constitute the final action of the Commission forty-five (45) days after the issuance thereof, subject to any review pursuant to the above-cited Rules of Practice.

Within ten (10) days after service of this partial initial decision any party may take an appeal to the Commission by the filing of exceptions to this decision or designated parts thereof. 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 [forty (40) days in the case of the Staff] any party may file a brief in support of, or in opposition to, the exceptions.

**THE ATOMIC SAFETY
AND LICENSING BOARD**

**Linda W. Little
ADMINISTRATIVE JUDGE**

**Forrest J. Remick
ADMINISTRATIVE JUDGE**

**John F. Wolf, Chairman
ADMINISTRATIVE JUDGE**

Dated at Bethesda, Maryland
this 24th day of September, 1981.

¹⁶⁹See 10 CFR §50.71(e), as amended, effective July 22, 1980, 45 Fed. Reg. 30614 (May 9, 1980).

APPENDIX A

LIST OF EXHIBITS

EXHIBIT	ADMITTED IN EVIDENCE
A. Applicant's Exhibit Number:	
1. Licensing Report Dresden Nuclear Report Dresden Nuclear Power Plant Units 2 and 3 Spent Fuel Rack Modification (Rev. 4).....	Tr. 451
2. Licensing Report Dresden Nuclear Power Plant Units 2 and 3 Spent Fuel Rack Modification (Rev. 5).....	Tr. 965
3. Five page letter dated June 12, 1981 signed by Mr. Janacek and addressed to the Administrative Judges	Tr. 1092
4. Letter dated August 10, 1981 to Mr. Dennis Crutchfield of NRC from Mr. T. J. Rausch of Commonwealth Edison ...	Tr. 1093
5. Seven page response by Applicant to NRC Staff questions 6 and 7	Tr. 1125
B. Staff's Exhibit Number:	
1. Safety Evaluation Report and Environmental Impact Appraisal Relating to the Modification of the Spent Fuel Storage Pool Provisional License No. DPR-19 and Facility Operating License No. DPR-25.....	Tr. 118
2. Affidavit of Kenneth S. Herring evaluating 5 rack project	Tr. 1129

EXHIBIT**ADMITTED IN
EVIDENCE****C. Intervenor's Exhibit Number**

1. Memorandum
from Henry E. Bliss
to D. J. Scott and W. L. Stiede
regarding Clearances on
Dresden's High Density Spent Fuel
Storage Racks, dated October 31, 1980..... Not Admitted
2. NSC "Trip Report,"
dated September 2, 1980 Tr. 511
3. NSC Report and
associated closeout documents
of NSC Audit of
Brooks & Perkins,
dated September 26, 1979. Tr. 512
4. Commonwealth Edison Company
Audit Report of
Commonwealth Edison Company's
audit of Brooks & Perkins
dated September 13, 1980. Tr. 285
5. Commonwealth Edison Company
Audit Report
of Commonwealth Edison Company's
audit of NSC,
dated September 25, 1980. Tr. 268
6. Commonwealth Edison Company
Audit Report and
associated closeout documents
of Commonwealth Edison Company's
audit of Leckenby Company,
dated September 29, 1980. Tr. 287
7. Commonwealth Edison Company
Audit Report and
associated close-out documents
of Commonwealth Edison Company's
audit of Leckenby Company,
dated March 13, 1980. Tr. 290

8. Internal Audit
Summary Report from T. L. Sumter
to P.D. Moore,
dated June 19, 1979. Not Admitted

EXHIBIT

**ADMITTED IN
EVIDENCE**

9. Internal Audit
conducted by
Brooks & Perkins, Inc.,
dated June 11, 1980. Not Admitted
10. Nuclear Regulatory Commission
Audit Report
of Leckenby Company,
dated April 14, 1980. Tr. 334
11. NSC "Trip Report,"
dated May 5, 1980. Tr. 511
12. INPO Report NO. EA 80-01,
"Evaluation of
Dresden Nuclear Power Station,"
dated September 12, 1980. Tr. 607
13. Nuclear Regulatory Commission's Health Physics
Appraisal, dated September 12, 1980 and
Commonwealth Edison Company's Response, dated
October 6, 1980. Tr. 627
14. One page sketch
entitled "Deformation of Edison's
BWR-3 80 Mil Channels," undated. Not Admitted
15. General Electric Company Specification 22A5866,
Revision 0
"Fuel Storage Requirements,"
dated November 3, 1978. Not Admitted
16. Commonwealth Edison Company Handwritten Notes,
undated Not Admitted
17. Commonwealth Edison Company Handwritten Notes,
dated November 14, 1980. Tr. 803

- 18. General Electric Company
Document entitled
"Recommendations for Mitigation of
the Effects of
Fuel Channel Bowing,"
dated December 1979. Tr. 862

EXHIBIT

**ADMITTED IN
EVIDENCE**

- 19. NSC Memorandum
to Q. Hossain
from J. Gilcrest entitled
"Dresden Fuel Racks (Com-0219) -
Fuel Channel Bowing,"
dated December 9, 1980. Not Admitted

D. Board Exhibit Number:

- 1. NSC Purchase Order. Tr. 713
- 2. Brooks & Perkins, Inc. Purchase Order. Tr. 713
- 3. Leckenby Co.
Purchase Order. Tr. 713

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Kenneth A. McCollom
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-445-OL
50-446-OL
(Application for Operating
License)

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

September 25, 1981

Acting pursuant to an order of the Commission, the Licensing Board issues an order describing those factors "beyond the mere pendency of staff review" which formed the basis for its determination to adopt eight of a former Intervenor's eleven admitted contentions *sua sponte*, after the voluntary dismissal for financial reasons of the party which had originally pleaded the contentions.

RULES OF PRACTICE: CONTENTIONS, SUA SPONTE
ADOPTION OF

A Licensing Board should not automatically reject otherwise viable contentions involving significant health and safety consequences following the voluntary dismissal for financial reasons of the party which pleaded these issues, unless these contentions may be disposed of on their merits. It would be a dereliction of duty for a Licensing Board to dismiss an accepted contention absent some threshold level of informational justification, and the Board should retain such issues at least until the Staff adopts some position as to them.

ORDER CONCERNING SUA SPONTE ISSUES

By our Order issued July 24, 1981, the Intervenor ACORN was granted voluntary dismissal from this proceeding. Eight of ACORN's eleven admitted contentions were adopted *sua sponte* by the Board pursuant to the provisions of 10 CFR 2.760a. This Order noted that ACORN's "Contentions 12 through 19 are related to issues which the Staff is still reviewing," which issues may have significant health and safety consequences. The order was forwarded to the Commission in accordance with the latter's Memorandum dated June 30, 1981.

The Commission entered an Order dated September 22, 1981 (CLI-81-24), directing the Board to describe as to the *sua sponte* contentions the "particular factors beyond the mere pendency of staff review" upon which it based its determination of the existence of "a serious safety, environmental, or common defense and security matter." Part of the reason for our *sua sponte* action results from serious delays in the hearing caused by frequent slippages in the issuance of Staff-generated documents. Accordingly, the following background information is brought to the attention of the Commission.

A 10-month delay is projected between the completion of Comanche Peak construction and the issuance of an operating license (August 28, 1981, Tenth Bevill Committee Report, p. 8). The cost of such delay is estimated at \$185,000,000 by the Applicant, or \$145,000,000 by the DOE analysis (*Ibid.*, Table 2).

The Licensing Board has exerted its best efforts to expedite the hearing schedule to reduce delays. A hearing on NEPA and other selected issues, to commence December 2, 1981, was established by the Scheduling Order of July 23, 1981, enclosed herewith as Attachment 1. The Notice of Evidentiary Hearing on those issues has been published in the *Federal Register*, and is enclosed herewith as Attachment 2. Thirteen separate orders resolving various discovery controversies and motions were issued between July 20, 1981 and August 21, 1981.

However, efforts to expedite the hearing have been frustrated by unreported and unexplained slippages. The DES slipped from March 6, 1981, to May 6, 1981, to May 22, 1981. The FES slipped from August 12, 1981 to September 24, 1981. The SER was scheduled for June 11, but was

issued July 15, 1981, with over 40 open items. The latest SER supplement (SSER) has slipped from August 12, 1981 to October 18, 1981, to December 12, 1981 (May 29, 1981 Blue Book; August 7, 1981 Blue Book; August 28, 1981 Bevill Committee Report). The ACRS meeting and review has been deferred from July 9 to November 12, 1981 (*Id.*).

In view of the unusually large number of open items (40) in the Staff's SER, the Board was exercising prudence in retaining Contentions 12-19, "at least until the Staff arrives at a position via supplements to the SER." All of these open item contentions involve safety considerations. Since they were admitted issues, the Board could better monitor their resolution and prevent them from getting lost in the shuffle of 40 open items subject to slippage, by retaining them *sua sponte*.

The substantial Staff slippages described above now put in jeopardy the date of the principal evidentiary hearing, which the Bevill Committee has consistently been informed will commence in March, 1982. As a result, the 10-month delay now projected could well have an even greater impact on licensing completion dates. These serious and unexplained slippages which impair the published schedule are very similar to changing circumstances or new information during the course of adjudication.

The Appeal Board has held that the Staff and other parties cannot leave the Board "in the dark" about changes or new information; "Changes may take place but they must be disclosed" [*Duke Power Company* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-143, 6 AEC 623 at 625]. It was held in another case that "it cannot be overemphasized that it is of utmost importance for parties to keep the board abreast of changing circumstances bearing on their cases" [*Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397 at 406, fn. 26].

Inasmuch as Contentions 12 through 19 involve open issues, their retention will enable the Board to ascertain why there continue to be 40 open issues. This is unusual, and it has already adversely affected the timeliness of ACRS review. No information or explanation has been furnished to the Board by the Staff. The Appeal Board has analyzed the independent responsibilities of licensing boards and the Staff, noting that "It is one thing to recognize that the staff must have both independence and time to fulfill its environmental obligations. It is quite another to infer that the staff's responsibilities override or dilute the Licensing Board's."¹

The Appeal Board then established the following procedure to handle significant delays that impact on licensing hearings:

¹ Offshore Power Systems (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 202, 206-07 (1978).

"One thing the Board may do is ascertain why the staff document in question has not been forthcoming. Certainly if it is to conduct the hearing in accordance with responsibilities assigned to it, the Board must at a minimum be entitled to look behind the staff's explanation for delay in submitting the environmental statement. If the staff can provide adequate assurance that it is acting as quickly and reasonably as the circumstances permit—and we emphasize the word *reasonably*—then the Board can ask no more and should reschedule the filing date accordingly.

"Where the Board finds, however, that the staff cannot demonstrate a reasonable cause for its delay, the Board may issue a ruling (with appropriate findings supported by the record) noting the staff's unjustified failure to meet a publication schedule. It may then either proceed to hear other matters or, if there be none, suspend the proceedings until the staff files the necessary documents. In either situation the Board, on its own motion or on that of one of the parties, may refer the ruling to us. See 10 CFR 2.730(f). We would hear such referrals expeditiously; and, were we to agree with the Board, we would certify the matter to the Commission. Its authority to rectify the situation is undoubted.

"This procedure has several things to commend it. First it does not impinge on the staff's independent responsibility for preparing impact statements. Second, it would bring to the Commission's attention only those cases where boards at the licensing and appeal levels agreed about the cause of the delay. *Cf.*, 10 CFR 2.786(b)(4)(ii). And, third, it can aid in pinpointing responsibility for delays in the licensing process, a matter of concern to all." (8 NRC at 207; footnotes omitted)

Retention by the Board of Contentions 12-19 will enable it to review the causes of delay and to make a reasoned judgment on the record, whether or not to invoke the procedures described in *Offshore Power, supra*.

In its Order of July 24, 1981, the Board reviewed each of ACORN's Contentions 12 through 19 and for each contention specifically identified by number and description the related open items pending in the Staff Review (Order at pp. 15 through 19). It is precisely because the Staff had not completed its review and reached its final position in these areas that the Board declined to dismiss the contentions. The Board stated that it "... prefers to retain Contentions 12 through 19, at least until the Staff arrives at a position via supplements to the SER." (Emphasis supplied)

In its SER, the Staff stated with respect to open issues that "the staff review of these items will be completed prior to a decision on issuance of

an Operating License and will be reported in supplement to this report" (pp. 1-7, NUREG-0797, July 1981). In the Board's view, to dismiss contentions and in effect sign off on these issues prior to even a statement from the Staff as to whether the issues can be resolved, would be neither prudent nor conservative.

It was anticipated by the Board that a favorable Staff review would result in dismissal of these contentions, as was the case with ACORN Contentions 10 and 21 which even though listed as unresolved safety issues (Task Action Plan Nos. A-2 and A-36), were dismissed as issues. The Board considered Contentions 10 and 21 to be sufficiently resolved on the basis of the Staff's information and description of their status, that it declined to raise them *sua sponte*. The Board also dismissed Contention 20 on the basis that the stated issue did not reach the status of a problem requiring *sua sponte* adoption. However, such is not the case for Contentions 12 through 18, for which very little information is available either in Applicant's filings or admittedly in the Staff's filings.

The issues raised in Contentions 12 through 19 were not initiated by the Board. They were duly raised by an intervenor party (ACORN), and after thorough Board review they were admitted as viable issues in this case. It is the Board's view that there is a significant difference between the Board's dismissal of an accepted contention, and the assertion of a previously unraised issue *sua sponte*.

Admitted contentions have necessarily satisfied the threshold pleading requirements of the Commission's Rules of Practice (10 CFR §2.714). They have achieved the status of cognizable issues after Board analysis, and they have been available for discovery as to their bases by the opposing parties (10 CFR §2.740 *et seq.*). The voluntary dismissal for financial reasons of the party which pleaded these contentions, for reasons not connected with a disposition of these issues on their merits, should not necessarily compel the automatic rejection of otherwise viable issues involving significant health and safety consequences.

In order to dismiss an accepted contention, it is the Board's view that some threshold level of informational justification should be satisfied. Absent such threshold, the contention must be addressed directly by the Board and any relegation of that responsibility would in our opinion, be dereliction of duty.

In the case of Contentions 12 through 19, the Board does not have the required Applicant or Staff input upon which to base an informed decision to dismiss. Accordingly, the Board wishes to retain Contentions 12 through 19 at this time.

Dr. Kenneth A. McCollom, who recently succeeded Dr. Forrest J. Remick as a Board Member, did not participate in this Order.

It is so ORDERED.

**THE ATOMIC SAFETY &
LICENSING BOARD**

**Dr. Richard F. Cole
ADMINISTRATIVE JUDGE**

**Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland
this 25th day of September, 1981.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Forrest J. Remick
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-445
50-446
(Application for
Operating License)

TEXAS UTILITIES
GENERATING COMPANY, ET AL.
(Comanche Peak Steam
Electric Station, Units 1 and 2)

July 23, 1981

SCHEDULING ORDER

The Board hereby adopts the following schedule for the conduct of this proceeding. This schedule shall control the course of discovery, motions, trial preparation and the evidentiary hearing involving the following matters:

Schedule For NEPA and Other Selected Issues

(Contentions 9, 22, 23, 24 and 25, and Board Question No. 2)¹

May 15, 1981 **DES issued.**

July 1981 **SER issued.**

¹ Order Subsequent to the Prehearing Conference of April 30, 1980, entered June 16, 1980, pp. 6, 10-17.

- | | |
|--------------------|---|
| August 17, 1981 | Last date for filing DES interrogatories, document requests and other discovery. |
| September 11, 1981 | Last date for filing answers to DES discovery. |
| September 17, 1981 | All DES discovery to be completed. |
| September 18, 1981 | FES to be issued (Staff revised estimate). |
| September 30, 1981 | FES - related interrogatories and discovery to be filed. |
| October 23, 1981 | All FES - related discovery to be completed. |
| October 29, 1981 | Last day to file motions for summary disposition
the above-described issues. |
| November 23, 1981 | Last day to file answers to summary disposition motions.

Written testimony (Q and A form) to be filed. |
| November 25, 1981 | Trial briefs, including witness and exhibit lists and summaries, to be filed. |
| December 1, 1981 | Final prehearing conference. |
| December 2, 1981 | Evidentiary hearing on above issues to commence. |

ORDER

The parties are directed to comply strictly with the above schedule regarding Contentions 9, 22, 23, 24, 25 and Board Question No. 2. They shall also conduct seasonably and conclude discovery on the remaining SER-related issues.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland
this 23rd day of July, 1981.**

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

**ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:**

**Marshall E. Miller, Chairman
Dr. Kenneth A. McCollom
Dr. Richard F. Cole**

In the Matter of

**Docket Nos. 50-445
50-446
(Application for
Operating License)**

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

September 17, 1981

**NOTICE OF EVIDENTIARY HEARING AND PREHEARING
CONFERENCE**

PLEASE TAKE NOTICE that an evidentiary hearing will be held in this operating license proceeding before an Atomic Safety and Licensing Board (Board), pursuant to the Atomic Energy Act of 1954 as amended (the Act), and the regulations in Title 10, Code of Federal Regulations (CFR), Part 50, "Licensing of Production and Utilization Facilities," Part 51, "Licensing and Regulatory Policy and Procedures for Environmental Protection," and Part 2, "Rules of Practice."

An evidentiary hearing will commence on December 2, 1981, at 9:00 a.m., local time at the Interstate Commerce Commission, Neil P. Anderson Building, Room 400A, located at 411 West 7th Street, Fort Worth, Texas 76102, and will continue until completion of taking evidence on the issues and contentions described hereafter. This evidentiary hearing will address the matters in controversy resulting from contentions 9, 22, 24 and 25, and Board Question No. 2, *infra*.

A final prehearing conference, pursuant to 10 CFR §2.752, will be held at the same location at 9:00 a.m., local time, December 1, 1981.

On February 5, 1979, the Nuclear Regulatory Commission (NRC) issued a notice in the *Federal Register* of the "Availability of Applicants' Environmental Report, Consideration of Issuance of Facility Operating Licenses, and Opportunity for Hearing" for Comanche Peak (44 *Fed. Reg.* 6995). The notice stated that a petition for leave to intervene must be filed by March 5, 1979. Timely petitions were received from the State of Texas for participation as an interested state under 10 CFR §2.715(c), and from Citizens Association for Sound Energy (CASE), Citizens for Fair Utility Regulation (CFUR) and the Texas Association of Community Organizations for Reform Now/West Texas Legal Services (ACORN).

By its Order Relative to Standing of Petitioners to Intervene, entered June 27, 1979, the Board admitted these petitioners as Intervenors in this proceeding. Subsequently, ACORN's motion for its voluntary dismissal as a party was granted by Memorandum and Order entered July 24, 1981.

By our Scheduling Order entered July 23, 1981, the evidentiary hearing to commence on December 2, 1981, was to cover the issues involved in admitted Contentions 9, 22, 24 and 25, and Board Question No. 2. These contentions and issues are as follows:

Contention 9

Applicants have failed to make any effort to determine the effect of radioactive releases on the general public other than at the exclusion boundary. Various transport mechanisms may cause, in certain cases, the bulk of the health effects to occur some distance from the exclusion boundary.

Contention 22

Applicants have failed to comply with 10 CFR Part 50, Appendix E, regarding emergency planning, for the following reasons:

a. The FSAR does not identify state or regional authorities responsible for emergency planning or who have special qualifications for dealing with emergencies.

b. No agreements have been reached with local and state officials and agencies for the early warning and evacuation of the public, including the identification of the principal officials by titles and agencies.

c. There is no description of the arrangements for services of physicians and other medical personnel qualified to handle radiation emergencies and arrangements for the transportation of injured or contaminated individuals beyond the site boundary.

d. There are no adequate plans for testing by periodic drills of emergency plans and provisions for participation in the drills by persons whose assistance may be needed, other than employees of the Applicant.

e. There is no provision for medical facilities in the immediate vicinity of the site, which includes Glen Rose.

f. There is no provision for emergency planning for Glen Rose or the Dallas/Ft. Worth metroplex.

Contention 24

A favorable cost/benefit balance cannot be made because the Applicant has failed to adequately consider:

a. The costs of safely decommissioning the facility after its useful life.

b. The costs in terms of health, as well as the economic costs of a possible accident in the on-site storage of spent fuel.

c. The fuel costs and supply.

d. The costs of waste storage.

Contention 25.

The requirements of the Atomic Energy Act, as amended, 10 CFR 50.57(a)(4) and 10 CFR 50 Appendix C have not been met in that the Applicant is not financially qualified to operate the proposed facility.

Board Question No. 2

Applicant and Staff should describe in detail the operating quality assurance program for CPSES. A description of the provisions for conduct of QA audits should be provided, including a description of how reactor operations and reactor operator training will be audited.

This evidentiary hearing will be conducted by a Board which has been duly designated by the Chairman of the Atomic Safety and Licensing Board Panel, consisting of Dr. Richard F. Cole, Dr. Kenneth A. McCollom, Members and Marshall E. Miller, Esq., Chairman.

Any person who wishes to make an oral or written statement in this proceeding but who has not filed a petition for leave to intervene, may request in writing permission to make a limited appearance pursuant to the provisions of 10 CFR §2.715 of the Commission's Rules of Practice. Limited appearances will be permitted in this proceeding at the discretion of the Board, at times, within such limits and on such conditions as may be determined by the Board. Persons desiring to make a limited appearance are requested to inform in writing the Secretary of the Commission, United States Nuclear Regulatory Commission, Washington, D.C. 20555, not later than thirty (30) days from the date of publication of this notice in the *Federal Register*. A person permitted to make a limited appearance does not become a party, but may state his or her position and raise questions which he or she would like to have answered to the extent that the questions are within the scope of the hearing as specified above. A member of the public does not have the right to participate unless granted the right to intervene as a party or the right of limited appearance.

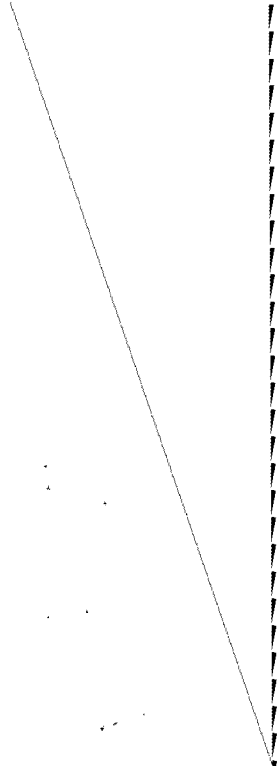
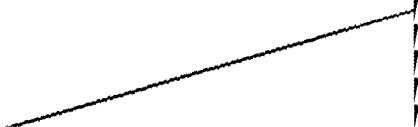
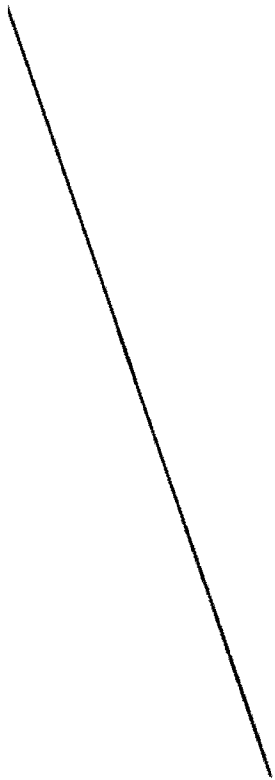
Written limited appearance statements may be submitted to the Board at any time prior to closing the record in this phase of the proceeding. Oral statements will only be received at times designated by the Board in order not to interfere with the taking of evidence in this adjudicatory proceeding. Oral limited appearance statements may be made on December 1, 1981, immediately following the schedule final prehearing conference, and at such other times as the Board shall specify. Both oral and written statements will be made a part of the official record of this proceeding.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 17th day of September, 1981.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT
Victor Stello, Director

In the Matter of

Docket Nos. 50-295
50-304
(10 CFR 2.206)

COMMONWEALTH EDISON COMPANY
(Zion Nuclear Plant, Units 1 and 2)

September 29, 1981

The Director of the Office of Inspection and Enforcement denies a petition under 10 CFR 2.206 that requested institution of a proceeding to show cause why operation of the Zion Station Units 1 and 2 should not be suspended pending the licensee's full compliance with emergency planning requirements pertaining to installation of a prompt notification system.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By petition dated July 29, 1981, the Illinois Safe Energy Alliance (petitioner) requested the Director of the Office of Inspection and Enforcement to institute a proceeding pursuant to 10 CFR 2.202 to require Commonwealth Edison Company (the licensee) to show cause why the Zion Nuclear Station Units 1 and 2 should not cease operation until the licensee complies with the Commission's emergency planning requirements. This request has been considered under the provisions of 10 CFR 2.206 of the Commission's regulations.

The basis for the petitioner's request is its assertion that Commonwealth Edison Company has failed to comply with the requirement set forth in 10 CFR Part 50, Appendix E, IV.D.3. which requires that:

By July 1, 1981, the nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing prompt instruction to the public within the plume exposure pathway emergency planning zone. The design objective shall be to have the capability to essentially complete the initial notification of the public within 15 minutes.

The petitioner contends there is a special urgency to implement the 15 minute notification system for the Zion facilities because the Zion reactors

have a type of pressure vessel which may be vulnerable to undetectable cracks which could cause a rupture in the pressure vessel around the reactor core. Certain pressure vessel ruptures, petitioner contends, could result in accidents with significant offsite releases. Thus, the Zion facility should be held to "exacting application of emergency preparedness standards."

The staff has evaluated the Illinois Safe Energy Alliance request. For the reasons set forth below, I have determined that no proceeding should be instituted to require Commonwealth Edison Company to show cause why its Zion facilities should not be shut down until they meet Commission emergency planning requirements.

While this licensee's compliance with the prompt notification requirement has been delayed (as is the case with most other similarly affected licensees),*the NRC considers that emergency plans and preparedness have significantly improved within the last year at and around Zion and every nuclear power plant site. This significant improvement has been confirmed by NRC teams who have visited a representative number of plant sites to evaluate the licensees' compliance with the upgraded emergency planning regulations of August 1980. In addition, the Federal Emergency Management Agency (FEMA) and the NRC have monitored numerous nuclear emergency exercises involving State and local governments and the licensees, and again have witnessed a significant general improvement in onsite and offsite emergency preparedness.

In response to the NRC's request for information dated July 1, 1981, the licensee described the existing notification systems in place for the Zion station. The current alerting capability relies on existing sirens where they are available to alert the public. Siren systems are available in North Chicago, Waukegan, Winthrop Harbor, and Zion, Illinois and Kenosha, Wisconsin. State, county, and local emergency vehicles will be used to notify the remainder of the population not covered by the installed sirens. The licensee reports that State vehicles would be used to supplement coverage in areas where county and local coverage is inadequate. County and local procedures are in place for vehicle routing by emergency dispatchers.

With regard to the possible generation of cracks in the Zion pressure vessel, on the basis of our review of the PWR Owners Group's responses and the PWR licensees' responses to our letter of April 20, 1981, and on the basis of our independent analysis, the staff has determined that all

* The Commission has published a notice of proposed rulemaking to amend 10 CFR Part 50, Appendix E, IV.D.3. to extend the date to February 1, 1982, by which prompt notification systems must be operational around all nuclear power plants. 46 FR 46587 (September 21, 1981). The comment period on the proposed amendment expires October 21, 1981.

operating plants could withstand a severe overcooling event for at least another year of full power operation. Further action will be taken to resolve the long term problems, but in this case Zion does not present a unique urgency related to the implementation of emergency planning.

Based on the above information and on a recognition that there exists a customary warning system (police, radio, telephone), which is viewed as sufficiently effective in many postulated accident scenarios, the Commission is proposing to defer the implementation date of the prompt notification capability requirement from July 1, 1981, to February 1, 1982. In view of the above, I find that there exists sufficient reason to believe that appropriate protective measures can and will be taken for the protection of the health and safety of the public near the Zion facilities in the event of a radiological emergency during the proposed extended time period for full compliance with Appendix E. The Zion site does not pose unique circumstances that should be the subject of Commission action apart from consideration of the generic rule change.

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-five (25) 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 29th day of September 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT
Victor Stello, Director

In the Matter of

Docket Nos. 50-245
50-336
(10 CFR 2.206)

NORTHEAST NUCLEAR ENERGY COMPANY
(Millstone Nuclear Power Station,
Units 1 and 2)

September 29, 1981

The Director of the Office of Inspection and Enforcement denies a petition under 10 CFR 2.206 that requested institution of a proceeding to show cause why operation of two units of the Millstone Station should not be suspended or revoked for failure to comply with emergency planning requirements pertaining to installation of a prompt notification system.

DIRECTOR'S DECISION UNDER 10 CFR 2.206

By letter dated August 5, 1981, Andrea Gaines requested pursuant to 10 CFR 2.206 that the Director of the Office of Inspection and Enforcement institute a show cause proceeding against the Northeast Utilities to determine whether the operating license for Millstone Nuclear Facility should be suspended or revoked for failure to comply with NRC requirements for an alert notification system.

The basis for Ms. Gaines' request is her assertion that the Millstone facility has failed to meet the requirement set forth in 10 CFR Part 50, Appendix E, IV.D.3. which states in relevant part:

By July 1, 1981, the nuclear power reactor licensee shall demonstrate that administrative and physical means have been established for alerting and providing the prompt instructions to the public within the plume exposure pathway emergency planning zone. The design objective shall be to have the capability to essentially complete the initial notification of the public within 15 minutes.

The Staff has evaluated Ms. Gaines' request. For the reasons set forth below, I have determined that no show cause proceeding should be instituted.

While this licensee's compliance with the prompt notification requirement has been delayed (as is the case with most other similarly affected licensees),*the NRC considers that emergency plans and preparedness have significantly improved within the last year at and around Millstone and every nuclear power plant site. This significant improvement has been confirmed by NRC teams who have visited a representative number of plant sites to evaluate the licensees' compliance with the upgraded emergency planning regulations of August 1980. In addition, the Federal Emergency Management Agency (FEMA) and the NRC have monitored numerous nuclear emergency exercises involving State and local governments and the licensees, and again have witnessed a significant general improvement in onsite and offsite emergency preparedness. The situation at Millstone is not unique with respect to the implementation of emergency planning.

In response to the NRC's request for information dated July 1, 1981, the licensee described the existing notification capabilities in effect for the Millstone station. The licensee has a radio pager operable to notify licensee, State, and local officials upon identification of a radiological emergency. Fixed and mobile equipment is available to alert the public within the plume exposure Emergency Planning Zone. These capabilities have been identified as part of efforts to revise the State of Connecticut's Radiological Emergency Response Plan. Local and State officials can also activate the Emergency Broadcasting System to notify affected members of the public.

Based on the above information and on a recognition that there exist customary warning systems (police, radio, telephone), which are viewed as sufficiently effective in many postulated accident scenarios, the Commission is proposing to defer the implementation date of the prompt public notification capability requirement from July 1, 1981, to February 1, 1982. In view of the above, I find that there exists sufficient reason to believe that appropriate protective measures can and will be taken for the protection of the health and safety of the public near the Millstone facilities in the event of a radiological emergency during the proposed extended time period for full compliance with Appendix E. The Millstone site does not pose unique circumstances that would warrant Commission action apart from consideration of the generic rule change.

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

* The Commission has published a notice of proposed rulemaking to amend 10 CFR Part 50, Appendix E, IV.D.3. to extend the date to February 1, 1982, by which prompt notification systems must be operational around all nuclear power plants. 46 FR 46587 (September 21, 1981). The comment period on the proposed amendment expires October 21, 1981.

regulations. As provided in 10 CFR 2.206(c), this decision will constitute the final action of the Commission twenty-five (25) days after the date of issuance, unless the Commission on its own motion institutes the review of this decision within that time.

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

Dated at Bethesda, Maryland,
this 29th day of September 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gilinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket No. 50-395A

**CENTRAL ELECTRIC POWER
COOPERATIVE, INC.**
(Virgil C. Summer Nuclear Station,
Unit No. 1)

October 16, 1981

The Commission denies a petition for reconsideration of its decision of June 26, 1981 (CLI-81-14) in which it declined to make a "significant changes" determination under Section 105c(2) of the Atomic Energy Act, thus precluding statutory antitrust review of applicants in connection with their pending application for an operating license for the Virgil C. Summer facility.

**NRC ANTITRUST REVIEW: SIGNIFICANT CHANGES
DETERMINATION**

A petition for a "significant changes" determination pursuant to Section 105c(2) of the Atomic Energy Act does not require decision (and may not be decided) by a formal adjudicatory proceeding governed by the Commission's Rules of Practice, 10 CFR Part 2, Subpart G.

RULES OF PRACTICE: MOTION FOR RECONSIDERATION

Motions to reconsider an order should be associated with requests for re-evaluation of the order in light of an elaboration upon, or refinement of, arguments previously advanced; they are not the occasion for advancing an entirely new thesis. *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B & 2B), ALAB-418, 6 NRC 1, 2 (1977).

NRC ANTITRUST REVIEW: OPERATING LICENSE STAGE

Under Section 105c(2) of the Atomic Energy Act, a second formal antitrust review at the operating license stage of a reactor licensing proceeding is the exception and not the rule.

NRC ANTITRUST REVIEW: SIGNIFICANT CHANGES DETERMINATION

Under Section 105c(2) of the Atomic Energy Act, to determine whether "significant changes" have occurred requiring the matter to be referred to the Attorney General for formal review, the "significant changes" determination requires that there be a factual basis for the determination and that the alleged changes be reasonably apparent.

MEMORANDUM AND ORDER

On July 6, 1981, Central Electric Power Cooperative, Inc. (Central) petitioned the Commission to reconsider its decision of June 26, 1981. That decision denied Central's petition for an affirmative determination pursuant to Section 105c. of the Atomic Energy Act of 1954, as amended, that significant changes have occurred with respect to the activities or proposed activities of South Carolina Electric & Gas Co., Inc. (SCEG) and South Carolina Public Service Authority ("Authority" or "Santee Cooper") (jointly Applicants) related to the Virgil C. Summer nuclear power facility. On consideration of Central's petition and the responses to it submitted by SCEG, Authority and the NRC Staff, the Commission has decided to deny Central's request and sets forth its reasons below.

In the interest of brevity we do not again relate the extensive background of this matter. It may be found in our tentative order of June 30, 1980, CLI-80-28, 11 NRC 817, and in our decision of June 26, 1981, CLI-81-14, which Central has asked us to reconsider (June 26 decision). However, before responding individually to Central's enumerated allegations of error, we have some preliminary observations on the nature of the process to arrive at decisions on significant changes pursuant to Section 105c.

I. Preliminary Observations

In the interest of exercising some control over the proliferation of written materials addressed to this matter, the Commission has at various times established schedules for responses. Nothing in those schedules alters

the character of this matter as an informal adjudicatory process for the purpose of arriving at a fair and reasoned determination. This is not, nor can it be, a formal adjudicatory proceeding governed by the Commission's rules of practice for such proceedings in 10 CFR Part 2, Subpart G. Even with the modicum of control established by Commission schedules, the Commission has been almost besieged with pleadings, letters containing argument and the like. Petitioner Central, in particular, has taken every possible occasion to reargue and supplement its contentions before us. Even the instant petition has been filed in an initial version on July 6 and an amended version of July 20, 1981.¹ Central's creation of what may fairly be termed a "moving target" has made it extremely difficult for the Commission to focus on the changes that Central alleges. Nonetheless, the Commission has seriously endeavored to focus on root elements of Central's petition and provide a correct and reasoned response.

II. Reconsideration

We turn now to the matters which Central urges should cause the Commission to reconsider its June 26 decision. For convenience Central's order of presentation and numeration is retained.

1. The Commission's Significance Criterion

Central contends that the Commission has wrongly adopted a significance criterion that requires a threshold determination that changes in the Applicants' activities "have antitrust implications that would be likely to warrant Commission remedy." It argues further that the Commission erred in elaborating on that standard to require that alleged changes "also be so 'apparent' as to enable a petitioner for review to establish a 'factual basis' or 'specific facts' supporting them without the benefit of discovery."² Central concludes that the significance criterion thus qualified impermissibly imposes a substantially greater obstacle to review than Section 105c. interposes to a hearing after review.

With regard to the significance criterion alone, we think Central's arguments come too late. In its June 30, 1980 order the Commission set forth the criteria it intended to consider in determining whether significant changes had occurred. The significance criterion appeared there in identical language to that of the June 26, 1981 decision. In the June 30, 1980 order, the Commission specifically stated that it was establishing new

¹ This memorandum will respond to the amended petition for reconsideration (hereinafter "Petition").

² Petition at 2. Citations omitted.

criteria and accordingly requested comments from the parties. Central's response to the Commission's request found no fault with the Commission's analysis except in one specific detail not relevant to this question.³ Thus we think it is late in the day for Central to present a new and elaborate legal thesis for the proposition that the significance criterion is inconsistent with statutory requirements. Motions to reconsider should be associated with requests for re-evaluation of an order in light of an elaboration upon, or refinement of, arguments previously advanced. See *Tennessee Valley Authority* (Hartville Nuclear Plant, Units 1A, 2A, 1B & 2B), ALAB-418, 6 NRC 1, 2 (1977). They are not the occasion for an "entirely new thesis". *Id.*

Apart from timeliness, we reject the merits of Central's arguments on this point. As we have explained twice before, the Commission's significance criterion is fully consistent with the statutory intent that antitrust review at the operating license stage be the exception not the rule.

Regarding the requirement that there be a factual basis for its determination and that alleged changes be reasonably apparent, the Commission concludes that there is no room for reconsideration. Pursuant to statute it may not conduct a hearing at this stage. Likewise, by statute the determination that it must make to refer the matter to the Attorney General for formal review is that significant changes have occurred. The language is not "are alleged to have occurred" or "may have occurred" but rather "have occurred". Thus the Commission's requirement is a practical interpretation that gives force to the statutory language.

2. SCEG's Use of Coercion Against the Authority

Central alleges error in the Commission's failure to find the record sufficient to support its claim of coercion. In its June 20 decision the Commission found that the factual basis presented in support of this claim contained generalized hearsay *and* evidence contradicted within the submission in which it was included.⁴ Faced with internally conflicting statements, the Commission found, among other things, that the statement that Santee Cooper knew it need not submit to coercion because the Justice Department would see that it got access to Summer was the more credible one. No cause for reconsideration is presented here.

³Comments of petitioner Central Electric Power Cooperative, Inc. at 1, August 25, 1980.

⁴Compare Central's Petition at 10 with the Commission's decision, CLI-81-14 at 25.

3. Retargeting the Group Boycott Toward Central Rather than Santee Cooper

Central alleges that the Commission should have found a situation inconsistent with the antitrust laws in that SCEG and the Authority entered into a private agreement to allocate Central's power exchange and bulk power business to the Authority.

As we noted above, Central's numerous filings have made it difficult for the Commission to focus on the central allegations and grounds for relief. Based on a careful review of all of the proceedings, we understood Central's amended petition for a significant changes finding to assert that Applicants had unlawfully joined to seek territorial legislation and that this agreement offended the antitrust laws. The instant Petition alleges a different agreement in what at least appears to be an effort to escape the implications of the state action doctrine of *Parker v. Brown*. Central had sufficient opportunity before the June 26 decision to frame its allegation specifically and clearly and to develop this thesis. As we said before, a motion for reconsideration is not the occasion for presenting new arguments. Thus we do not believe that reconsideration is called for.

4. Santee Cooper's Alleged Refusal to Deal with Central on Reasonable and Practicable Terms

Central alleges that the terms of the Power System Agreement (Agreement) negotiated with Santee Cooper are in themselves anticompetitive. Both Central's Board of Director and the REA have approved the Agreement, and in the Commission's Staff's view the Agreement provides as much as Central could have obtained by way of license conditions had it proved a situation inconsistent with the antitrust laws in a hearing before a Licensing Board. Thus no case for reconsideration may be found here.

5. SCEG's Alleged Refusal to Wheel and to Negotiate Coordinated Development of Generation with Central

Under this heading Central combines its thesis of a group boycott (see section 3 *supra*) with its earlier assertions of SCEG's refusal to deal to conclude that it requires wheeling from SCEG in order to avoid competitive harm.

Central's amended petition requested as relief wheeling from Santee Cooper *or* SCEG. The Commission has concluded that such relief is afforded to Central by the Agreement it executed with Santee Cooper. Moreover, the Commission believes that its acceptance of SCEG's asser-

tions that it would provide *ad hoc* transmission was reasonable under the circumstances.⁵ Nothing presented by Central causes the Commission to reconsider.

6. The Commission's Refusal to Permit Discovery

Central again complains of the Commission's failure to permit discovery (and uses the occasion to characterize what it will find). The Commission has responded to this point. In its view discovery is not available because this is not a formal proceeding.⁶ Moreover, discovery is not the only means available to the Commission to obtain the necessary information. The Commission staff routinely conducts its own investigation of each petition. In this case the staff determined after conducting its own investigation that no formal antitrust review was warranted.

7. The Commission's Standard of Proof

Under another heading Central resumes its complaint regarding the Commission's requirement that the factual basis be reasonably apparent (see Discussion of Allegation 1, *supra*). Central argues that the Commission has applied here too strict a standard of proof.

We believe that our determination that the significant changes must be reasonably apparent is fully in accord with Congressional intent underlying Section 105c.(2), that a second formal antitrust review at the operating license stage be the exception rather than the rule. Moreover, in an analogous area, the courts have made clear that a full-blown formal proceeding need not be launched solely because some violation is alleged. *Porter County Chapter v. NRC*, 606 F.2d 1363 (D.C. Cir. 1979).

8. Allegation of an Unwarranted Commission Inference with Respect to Timeliness

Central complains that the Commission has drawn an unwarranted inference with respect to the date at which Central became aware that it might find in the Commission a forum in which to assert its antitrust claims.

⁵ June 26 Order, CLI-81-14 at 26-27.

⁶ We would add that there is no *statutory* right to discovery even in formal adjudicatory proceedings.

Since the Commission denied Central's petition on other grounds, it abstained from re-evaluating its judgment on timeliness. Central's current explanations are therefore irrelevant.⁷

9. Alleged Error in Failing to Assess the Significance of Santee Cooper's Acquisition Offers

Central argues again that offers to acquire its bulk power supply function and absorb one of its members were anticompetitive in nature.

The Commission is satisfied that the Agreement between Central and Santee Cooper provided a reasonably comprehensive resolution to the relationship between Santee Cooper and Central and to Central's alleged needs for power and transmission insofar as they relate to licensing the Summer facility. Thus the Commission did not need to resolve whether and to what extent a past "offer" would constitute an anticompetitive situation.

10. The Commission's Alleged Failure to Consider the Asserted Significant Changes in Their Entirety

Central appears to imply that the Commission examined its allegations in isolation and failed to consider them in their entirety.

In the process of responding to Central's allegations the Commission was required to provide reasonably specific responses. However, it should be clear that the Commission has considered the entire competitive situation. In particular it concurs with Staff's judgment that the situation as changed by Santee Cooper's and Central's Agreement is improved from a competitive standpoint.⁸

11. The Effect of the Agreement on Market Forces

This allegation of error is another attack on the Agreement which Central and Santee Cooper concluded. The Commission views the Agreement as an improvement in the competitive situation which provides in

⁷ Nonetheless, nothing in Mr. Brand's affidavit to which the Commission is referred is necessarily inconsistent with an inference that might be drawn that Central knew of a possible Commission forum considerably before filing its December 1978 petition, even as early as August, 1977. We note further that Central has told the Commission that in 1976 it was in consultation with antitrust counsel for the purposes of investigating its rights with respect to the very matters here at issue.

⁸ See NRC Staff Response to Commission's Order of June 15, 1981, 11-12, February 10, 1981.

substantial measure the relief requested by Central in its Amended Petition for a significant changes determination. Nothing has been offered to cause the Commission to reconsider this view.

III. Conclusion

For the reasons presented above,⁹ the Commission declines to reconsider its order of June 26, 1980. Accordingly, Central's Petition is denied.

Commissioner Gilinsky did not participate in this decision.

It is so ORDERED.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
the 16th day of October, 1981.

⁹ The Commission has noted the documents furnished by letter of September 14, 1981 from Central's counsel Wallace Brand. In its view these documents do not materially affect the June 26, 1981 decision and the Commission therefore declines to give them further consideration.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gillinsky
Peter A. Bradford
John F. Ahearne
Thomas M. Roberts

In the Matter of

Docket Nos. 50-348A
50-364A

ALABAMA POWER COMPANY
(Joseph M. Farley Nuclear Plant
Units 1 and 2)

October 22, 1981

The Commission denies petitions by the licensee and an intervenor for review of the Appeal Board's June 30, 1981 decision (ALAB-646) imposing certain remedial antitrust conditions on the operating licenses for the Farley nuclear units; the Commission also denies the licensee's motion for a stay of the decision's effectiveness pending judicial review of the decision.

RULES OF PRACTICE: STAY PENDING APPEAL

The four factors to be considered in reviewing a request for a stay are set forth in Section 2.788 of the Commission's regulations, 10 CFR 2.788. While no single factor is dispositive, the most crucial one is whether irreparable injury will be incurred by the movant absent a stay. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 632 (1977).

RULES OF PRACTICE: STAY PENDING APPEAL (BURDEN OF PROOF)

The burden of persuasion on the four factors in 10 CFR 2.788 rests on the moving party. *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-493, 8 NRC 253, 270 (1978).

RULES OF PRACTICE: STAY PENDING APPEAL (BURDEN OF PROOF)

To meet the standard of making a strong showing that it is likely to prevail on the merits of its appeal (the first factor under 10 CFR 2.788), the movant must do more than merely establish possible grounds for appeal. *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), LBP-77-7, 5 NRC 452 (1977). In addition, an "overwhelming showing of likelihood of success on the merits" is necessary where the showing on the other three factors is weak. *Florida Power and Light Co.* (St. Lucie Nuclear Power Plant, Unit 2), ALAB-404, 5 NRC 1185, 1186-89, and ALAB-415, 5 NRC 1435, 1437 (1977). Moreover, where an applicant is asking as a preliminary matter for the full relief to which it might be entitled if successful at the conclusion of its appeal, it has a heavy burden to establish a right to it. *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Unit No. 1), ALAB-385, 5 NRC 621, 626 (1977).

MEMORANDUM AND ORDER

The Commission has determined to grant neither Alabama Power Company's (APCO) nor Municipal Electric Utility Association's (MEUA) petition for review of the Atomic Safety and Licensing Appeal Board's decision of June 30, 1981 (ALAB-646) in the captioned case.

APCO has sought review of the Appeal Board's decision in the United States Court of Appeals for the Fifth Circuit¹ and on July 22, 1981 moved the Commission to stay during the pendency of litigation the effectiveness of certain remedial antitrust conditions imposed on APCO's licenses to operate the Farley nuclear units.

Commission regulations and precedent establish the agency law governing decisions on stays and comport with judicial case law. Section 2.788 of the Commission's regulations sets out the following factors to be considered in reviewing a request for a stay:

- (1) whether the moving party has made a strong showing that it is likely to prevail on the merits;
- (2) whether the party will be irreparably injured unless a stay is granted;

¹ *Alabama Power Co. v. Nuclear Regulatory Commission and United States*, Nos. 80-7547 and 80-7580. Alabama Electric Cooperative (AEC) and MEUA have intervened in that proceeding.

- (3) whether the granting of a stay would harm other parties; and
- (4) where the public interest lies.²

The burden of persuasion on these factors rests on the moving party.³ While no single factor is dispositive, the most crucial is whether irreparable injury will be incurred by the movant absent a stay.⁴ To meet the standard of making a strong showing that it is likely to prevail on the merits of its appeal, the movant must do more than merely establish possible grounds for appeal.⁵ In addition, an "overwhelming showing of likelihood of success on the merits" is necessary to obtain a stay where the showing on the other three factors is weak.⁶ Moreover, where an applicant is asking "as a preliminary matter for the full relief to which [it] might be entitled if successful at the conclusion of [its] appeal ... [it] has a heavy burden indeed to establish a right to it."⁷

On consideration of APCO's motion and the responses in opposition to it filed by the other four parties to this proceeding,⁸ the Commission has determined that APCO's request does not merit the grant of the extraordinary relief requested.⁹

Accordingly, the application for a stay is denied.

Commissioner Bradford dissents in part from this order. His separate view is attached.

² 10 CFR 2.788 codifies the criteria established by *Virginia Petroleum Jobbers Ass'n v. F.P.C.*, 295 F.2d 921, 925 (D.C. Cir. 1958).

³ *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-493, 8 NRC 253, 270 (1978).

⁴ *Public Service Company of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 632 (1977), citing *Permian Basin Area Rate Cases*, 390 U.S. 747, 773 (1968).

⁵ *The Toledo Edison Company, et al.* (Davis-Besse Nuclear Power Station, Units 1, 2 and 3), LBP-77-7, 5 NRC 452 (1977), citing *Environmental Defense Fund, Inc. v. Froehlke*, 348 F. Supp. 338, 366 (W.D. Mo. 1972), *aff'd* 477 F.2d 1033 (8th Cir. 1973).

⁶ *Florida Power and Light Company* (St. Lucie Nuclear Power Plant, Unit 2), ALAB-404, 5 NRC 1185, 1186-89 and ALAB-415, 5 NRC 1435, 1437 (1977).

⁷ *Toledo Edison Company* (Davis-Besse Nuclear Power Station, Unit No. 1), ALAB-385, 5 NRC 621, 626 (1977).

⁸ In addition to APCO, MEUA and AEC, parties in the proceeding were the Department of Justice (Department) and the Nuclear Regulatory Commission staff (Staff).

⁹ APCO requested oral argument on both its stay request and on its petition for review. As the Commission perceives no need for oral argument on either of these motions and the question of whether to hold oral argument is entirely a matter of Commission discretion, APCO's requests are denied.

Commissioner Gilinsky did not participate in this decision.

For the Commission

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.
the 22nd day of October, 1981.

SEPARATE VIEWS OF COMMISSIONER BRADFORD

I agree with the result of the Commission's decision as to Alabama Power Company. However, I would take review of that portion of the Appeal Board's decision that finds that MEUA is not a potential wholesale competitor.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Christine N. Kohl

In the Matter of

Docket No. 50-312 SP

**SACRAMENTO MUNICIPAL
UTILITY DISTRICT
(Rancho Seco Nuclear
Generating Station)**

October 7, 1981

Upon review, *sua sponte*, of the record and Licensing Board's decision in this special proceeding (LBP-81-12) — which was instituted to determine the adequacy of certain short-term actions and long-term requirements for continued reactor operation ordered by the Commission as a result of the March 1979 accident at Three Mile Island — the Appeal Board defers judgment on the Licensing Board's decision that approved continued reactor operation and requests submission of further analyses and information by the licensee and NRC staff.

APPEAL BOARD: SCOPE OF REVIEW (SUA SPONTE)

It is the Appeal Board's practice to review *sua sponte* any final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues. *Washington Public Power Supply System (WPPSS Nuclear Project No. 2)*, ALAB-571, 10 NRC 687, 692 (1979).

APPEAL BOARD: STANDARD OF REVIEW (SUA SPONTE)

The Appeal Board's standard in conducting a review, *sua sponte*, is similar to that required in a contested proceeding. The Appeal Board may reject or modify findings of the Licensing Board if, after giving its decision the probative force it intrinsically commands, the Appeal Board is

convinced that the record compels a different result. *Northern States Power Co.* (Monticello Plant, Unit 1), ALAB-611, 12 NRC 301, 304 (1980).

RULES OF PRACTICE: CONTENTIONS (ADMISSIBILITY)

Licensing boards should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission. *Potomac Electric Power Co.* (Douglas Point Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974).

TECHNICAL ISSUES DISCUSSED:

Auxiliary Feedwater System Reliability;
Anticipatory Reactor Trips;
Small-break LOCA Analyses;
High Pressure Injection;
Operator Training and Competence;
Instrumentation;
Hydrogen Control.

MEMORANDUM AND ORDER

I.

The Rancho Seco Nuclear Generating Station, licensed in 1974, utilizes a Babcock and Wilcox (B&W) pressurized water reactor (PWR). As a result of the March 1979 accident at Three Mile Island (TMI) — another B&W facility — the Commission ordered Rancho Seco to remain shut down¹ until the satisfactory completion of the following five short-term actions, intended to enhance the reactor's ability to respond safely to feedwater transients:

- (a) Upgrade the timeliness and reliability of delivery from the Auxiliary Feedwater System by carrying out actions as identified in Enclosure 1 of the licensee's letter of April 27, 1979.
- (b) Develop and implement operating procedures for initiating and controlling auxiliary feedwater independent of Integrated Control System control.

¹ Anticipating the order, licensee Sacramento Municipal Utility District (SMUD) had already shut down Rancho Seco on April 28, 1979.

- (c) Implement a hard-wired control-grade reactor trip that would be actuated on loss of main feedwater and/or turbine trip.
- (d) Complete analyses for potential small breaks and develop and implement operating instructions to define operator action.
- (e) Provide for one Senior Licensed Operator assigned to the control room who has had Three Mile Island Unit No. 2 (TMI-2) training on the B&W simulator.

44 Fed. Reg. 27779-27780 (May 11, 1979). The Commission also ordered the licensee to implement "as promptly as practicable" these four "long-term" modifications (*ibid.*):

The licensee will provide to the NRC staff a proposed schedule for implementation of identified design modifications which specifically relate to items 1 through 9 of Enclosure 1 to the licensee's letter of April 27, 1979, and would significantly improve safety.

The licensee will submit a failure mode and effects analysis of the Integrated Control System to the NRC staff as soon as practicable. The licensee stated that this analysis is now underway with high priority by B&W.

The reactor trip following loss of main feedwater and/or trip of the turbine to be installed promptly pursuant to this Order will thereafter be upgraded so that the components are safety grade. The licensee will submit this design to the NRC staff for review.

The licensee will continue operator training and have a minimum of two licensed operators per shift with TMI-2 simulator training at B&W by June 1, 1979. Thereafter, at least one licensed operator with TMI-2 simulator training at B&W will be assigned to the control room. All training of licensed personnel will be completed by June 28, 1979.

In response to a Commission invitation, several parties requested a hearing.² On June 21, 1979, the Commission directed a licensing board to be constituted to determine whether these parties had standing to participate in this matter and to convene a hearing if necessary. The Commis-

² Two joint requests were made, one by Gary Hursh and Richard D. Castro (directors of SMUD), and the other by Friends of the Earth, Environmental Council of Sacramento, and Original SMUD Rate Payers Association (collectively FOE).

sion further instructed the board to consider at any such hearing: (1) whether the five short-term actions "are necessary and sufficient to provide reasonable assurance that the facility will respond safely to feedwater transients, pending completion of the long-term modifications;" (2) "[w]hether the licensee should be required to accomplish, as promptly as practicable, the long-term modifications;" and (3) "[w]hether these long-term modifications are sufficient to provide continued reasonable assurance that the facility will respond safely to feedwater transients." CLI-79-7, 9 NRC 680, 681. Subsequently at a public meeting, the Commission, while not amending its prior order, expressed its intent not to preclude the board from also considering whether the management competence and control at Rancho Seco are adequate. Comm. Tr. 12 (July 11, 1979).

On July 27, 1979, the Director of the Office of Nuclear Reactor Regulation (NRR) determined that SMUD had satisfactorily completed the five short-term items, and he authorized the facility to resume operation. In the meantime, the Licensing Board below was constituted and commenced prehearing activities. The Board admitted FOE and Messrs. Hursh and Castro as intervenors³ and the California Energy Commission (CEC) as an "interested State" under 10 C.F.R. 2.715(c). All of these parties advanced contentions, and licensee SMUD moved for summary disposition of many. In a series of orders, the Licensing Board admitted numerous contentions, granted summary disposition of some, and posed three of its own "Additional Board Questions" for pursuit at hearing. Not long before the evidentiary hearing was to begin, intervenors Hursh and Castro and FOE withdrew from the proceeding. The Board, however, essentially adopted as its own the previously admitted contentions of these erstwhile parties. The hearing thus proceeded as technically "uncontested," but with CEC participating more actively than an interested state does ordinarily.

In a decision served on May 18, 1981, the Licensing Board set forth its findings on the 29 contentions and issues it explored during the hearing. The Board concluded that the five short-term actions ordered by the Commission "are necessary and sufficient to provide reasonable assurance that the facility will respond safely to feedwater transients, pending completion of the long-term modifications." It also concluded that the licensee should perform the long-term modifications "as promptly as practicable," and that these actions, "coupled with the additional changes completed and being undertaken at the facility, including management and operator

³See note 2, *supra*.

competency[,] are sufficient to provide continued reasonable assurance that the facility will respond safely to feedwater transients." LBP-81-12, 13 NRC 650 (I.D., ¶¶245-247).⁴

None of the parties has appealed from the Board's decision. It is our practice, however, to review *sua sponte* "any final disposition of a licensing proceeding that either was or had to be founded upon substantive determinations of significant safety or environmental issues." *Washington Public Power System* (WPPSS Nuclear Project No. 2), ALAB-571, 10 NRC 687, 692 (1979). Our standard of review in such instance

is similar to that required in a contested proceeding. We may "reject or modify findings of the Licensing Board if, after giving its decision the probative force it intrinsically commands, we are convinced that the record compels a different result."

Northern States Power Co. (Monticello Plant, Unit 1), ALAB-611, 12 NRC 301, 304 (1980), and cases cited.

We have therefore reviewed, *sua sponte*, the record and Licensing Board's decision, as well as the Commission's orders that led to the institution of this special proceeding. While our tentative conclusions are essentially in accord with those of the Board below, we find it necessary and advisable to address a number of issues before bringing this chapter of Rancho Seco to a close.⁵ In some instances, we attempt to resolve apparent inconsistencies in the evidence or the decision itself. In others, we supplement the Licensing Board's discussion with further references to the record. Finally, we order SMUD and the staff to submit additional information that has developed since the close of the record and to under-

⁴ For ease of reference, we shall cite to the initial decision's numbered paragraphs, as well as to the NRC Reports.

⁵ Inasmuch as this is a *sua sponte* review and we are without the benefit of briefs from the parties, we address only the most significant points requiring our attention. Those portions of the Licensing Board's decision not discussed here, in our view, do not require corrective action. On the other hand, the inherent limitations on our review necessarily preclude construing our silence on these matters as blanket approval of the Board's treatment of them.

take certain analyses that we believe are necessary for our ultimate disposition of this proceeding.⁶

II.

It is apparent that the Licensing Board diligently pursued the many complex and highly technical issues raised in this proceeding. In particular, we appreciate its effort to see that serious questions raised by parties who later withdrew were addressed at the hearing. Nonetheless, our review has been somewhat hampered by the Board's failure to relate the contentions and issues it addressed more specifically to both the long and short-term modifications and the subjects for consideration at hearing set forth by the Commission in its orders. See 44 Fed. Reg. 27779 and 9 NRC 680, *supra*.⁷ Because of the special nature of this proceeding, we believe the Board should have reframed the proffered contentions and structured the course of the hearing in a manner more closely tied to the scheme suggested by the Commission's initiating orders.

Having made these general observations, we now turn to the specific portions of the initial decision that warrant further comment of amplification.

⁶ The Licensing Board refrained from actually "ordering" any actions other than those originally specified by the Commission, even though it commented favorably throughout its decision on a number of such actions. 13 NRC at 649,650 (I.D., ¶¶243, 247). The Board apparently believed that, under the terms of the Commission's June 1979 order, it could only *recommend* that the Commission issue a show cause order concerning the need for additional measures. *Id.* at 566 (I.D., ¶¶15). We do not read the Commission's order so narrowly. The Commission limited the general scope of the hearing to the facility's ability to respond safely to feedwater transients and specified three subjects for the Board's consideration at the hearing. The order did not, however, describe what the Board should do if it were to find a need for additional modifications. The Commission merely stated: "[i]n the event that a need for further enforcement action becomes apparent, *either in the course of the hearing* or at any other time, appropriate action can be taken at that time." 9 NRC at 681 (emphasis added). The Commission did not specify or limit who could take "appropriate action." In these circumstances, we believe it proper to formalize through an order, if necessary, any ultimate findings that SMUD should accomplish certain additional modifications. See Part III, *infra*.

⁷ Our scrutiny of the record and initial decision reveals that the Board did, in fact, cover all the items directed by the Commission. Although the Board does not so characterize them, most of the matters discussed, however, appear to fall within consideration of whether the Commission-ordered modifications (short and long-term) are "sufficient" to assure a reasonably safe response to feedwater transients.

Insofar as it appears to raise issues beyond the scope of the Commission's order, the Board also attempted (principally in its prehearing conference orders of October 5, 1979, and February 14, 1980) to link the more attenuated issues to the general subject of this proceeding — response to feedwater transients.

A. Auxiliary Feedwater System Reliability

An important concern of the Commission, as reflected in its May 1979 order, was the reliability of Rancho Seco's auxiliary feedwater (AFW) system and its independence from the integrated control system (ICS). See 44 Fed. Reg. 27779. Hence, short-termitem (a), for example, required SMUD to upgrade the timeliness and reliability of the AFW system by accomplishing nine actions described in an April 27, 1979, letter from SMUD to the NRC staff.⁸ In addition to these, a number of other actions were suggested during the course of this proceeding. In many instances, the Licensing Board noted SMUD's "commitment" to undertake them or the staff's request for SMUD to do so. In view of the significant weight assigned to AFW reliability, we believe it is useful to explore some of those suggestions or commitments for additional analyses and modifications to the AFW and related systems.

1. The Commission ordered SMUD to submit a "failure mode and effects analysis" (FMEA) of the ICS. B&W performed this study and recommended a number of areas for further review "for possible changes to enhance reliability and safety." CEC Exhibit 3, "Integrated Control

⁸ Those actions, which the Director of NRR determined had been satisfactorily completed, are found in CEC Exhibit 25 (Enclosure 1), as follows:

1. Review procedures, revise as necessary and conduct training to ensure timely and proper starting of motor driven auxiliary feedwater (AFW) pump(s) from vital AC buses upon loss of offsite power.
2. To assure that AFW will be aligned in a timely manner to inject on all AFW demand events when in the surveillance test mode, procedures will be implemented and training conducted to provide an operator at the necessary valves in phone communications with the control room during the surveillance mode to carry out the valve alignment changes upon AFW demand events.
3. Procedures will be developed and implemented and training conducted to provide for control of steam generator level by use of safety grade AFW bypass valves in the event that ICS steam generator level control fails.
4. Verification that Technical Specifications requirements of AFW capacity are in accordance with the accident analysis will be conducted. Pump capacity with mini flow in service will also be verified.
5. Modifications will be made to provide verification in the control room of AFW flow to each steam generator.
6. Review and revise, as necessary, the procedures and training for providing alternate sources of water to the suction of the AFW pumps.
7. Design review and modification, as necessary, will be conducted to provide control room annunciation for all auto start conditions of the AFW system.
8. Procedures will be developed and implemented and training conducted to provide guidance for timely operator verification of any automatic initiation of AFW.
9. Verification will be made that the air operated level control valves (a) Fail to the 50% open position upon loss of electrical power to the electrical to pressure converter, and (b) Fail to the 100% open position upon loss of service air. The AFW bypass valves are safety grade.

System Reliability Analysis" (BAW-1564, August 1979) at 3-1.⁹ Both the staff and the Oak Ridge National Laboratory (ORNL) — which critically appraised the B&W report for the NRC — agreed that these recommendations warranted some follow-up action. Staff Exhibit 5, "Assessment of B&W Report BAW-1564," *passim*; Board Exhibit 1, ORNL Report Review at 16-17. At the hearing, NRC witness Capra indicated that SMUD had already made changes in several of the recommended areas and was considering still others. Tr. 3703-3711.¹⁰ Mr. Capra's testimony also suggested that the staff would continue to oversee SMUD's response to the B&W recommendations. Tr. 3707.

The Licensing Board's initial decision discussed at length the B&W recommendations, along with the ORNL and staff evaluations, and noted simply that SMUD is considering and acting upon a number of items. 13 NRC at 570-573 (I.D., ¶¶26-35). The record, however, contains no information concerning SMUD's final response to BAW-1564 and the staff's final evaluation. Because we would find this information useful, we request SMUD and the staff to provide us with a status report on the six B&W recommendations.

2. The Licensing Board concluded that the AFW system "provide[s] reasonable assurance that the plant can be safely shut down in the event of a loss of main feedwater." 13 NRC at 604 (I.D., ¶119). It noted, however, seven additional long-term modifications to which SMUD is "committed" and which, in the Board's view, will enhance AFW reliability even further by reducing operator action and thus error. *Id.* at 604-605 (I.D., ¶¶119-120). The Board set forth these actions as follows (*id.* at 604 (I.D., ¶119); see also *id.* at 569 (I.D., ¶124)):

⁹Specifically, these areas were (CEC Exhibit 3 at 3-1):

- a. Non-nuclear instrumentation/ICS power supply reliability.
- b. Reliability of input signals from the nuclear instrumentation/reactor protection system to the ICS — specifically, the reactor coolant flow signal.
- c. ICS/balance of plant system tuning, particularly feedwater condensate systems and the ICS controls.
- d. Main feedwater pump turbine drive minimum speed control — to prevent loss of main feedwater or indication of main feedwater.
- e. A means to prevent or mitigate the consequences of a stuck-open main feedwater startup valve.
- f. A means to prevent or mitigate the consequences of a stuck-open turbine bypass valve.

¹⁰ For example, SMUD made changes relating to power supply reliability and ICS procedures. It also was said to be considering changes relating to hard-wiring the reactor coolant flow signal to the ICS and the purchase of a new main feed pump control system.

- (a) Provide a safety grade AFW automatic initiation and control system design that is independent of the ICS.
- (b) Provide for the automatic loading of the motor driven AFW pump onto the diesel generator buses upon loss of all offsite power.
- (c) Revise the AFW system piping and provide a remotely operated valve operated from the control room instead of the local manually operated full flow recirculation valve (FWS 055).
- (d) Incorporate into the Technical Specifications a requirement to operationally verify AFW flow capability from the condensate storage tank to the steam generators following extended cold shutdown.
- (e) Upgrade the existing condensate storage tank level indication and low level alarm to safety grade requirements.
- (f) Upgrade the existing control room indication of AFW flow to each steam generator to safety grade.
- (g) Establish procedures on how to obtain water for the AFW system from sources other than the condensate storage tank.

See fol. Tr. 1163, Matthews Testimony on Board Question CEC 1-6 at 17-19; CEC Exhibit 21 (Enclosure 1) at 3-7. The staff, in fact, identified these and still other actions it expected from SMUD¹¹ and proposed a schedule for their completion in CEC Exhibit 21 (Enclosure 2). SMUD responded favorably to each of the items listed, indicating that it would take the specified action within the time set by the staff. CEC Exhibit 22. Again, because these modifications all relate to AFW system reliability — the very essence of this special proceeding — we believe a status report on SMUD's fulfillment of its commitments is in order. We therefore request

¹¹ Other actions included, for example, revision of AFW system procedures with regard to AFW pump suction and discharge pressure instrumentation and revision of proposed technical specification for AFW Limiting Condition for Operation.

SMUD and the staff to advise us as to the progress SMUD has made on each action identified in CEC Exhibit 21 (Enclosure 2).¹²

B. Anticipatory Reactor Trips

The Commission's May 1979 order directed SMUD to "[i]mplement a hard-wired control-grade reactor trip that would be actuated on loss of main feedwater and/or turbine trip." 44 Fed. Reg. 27780. The Licensing Board concluded, and the evidence shows, that control-grade reactor trips are "acceptable in the short-term," because they do not perform a direct safety function but merely serve as an additional backup. 13 NRC at 582 (I.D., ¶57). See also fol. Tr. 1163, Thatcher Testimony on Board Question 9, etc., at 6-7.¹³ For the long term, however, the Commission ordered SMUD to upgrade this component to "safety-grade" and submit the design to the NRC staff for review "as promptly as practicable." 44 Fed. Reg. 27779-27780. "Safety-grade" describes circuitry that is more reliable than "control-grade" and that meets the design requirements of the protective safety system, such as "single failure, testability, qualification, independence and automatic removal of operating bypasses." Fol. Tr. 1163, Thatcher Testimony on Board Question 9, etc., at 6. The Board thus noted SMUD's commitment to install safety-grade trips "in the next few months." 13 NRC at 582 (I.D., ¶57).

The record shows that the NRC staff approved SMUD's preliminary design for the safety-grade anticipatory trip on December 20, 1979, and that the trips would be installed and operational within about six months of that date — *i.e.*, by June 1980. Fol. Tr. 1163, Thatcher Testimony on Board Question 9, etc., at 6; fol. Tr. 1163, Capra Testimony on FOE contention III(c) at 5; fol. Tr. 1988, Dieterich Testimony on Board Question CEC 1-6, etc., at 26, 27. The Board issued its decision approximately one year later, but there is no indication there or otherwise in the

¹² We note, in this regard, that most items were to have been completed by May 1, 1980, or January 1, 1981.

¹³ The Licensing Board explored at the hearing a claim that control-grade anticipatory reactor trips at B&W reactors had failed to respond on one out of four occasions during the first few months after the accident at TMI-2. Testimony showed that this one failure was attributed to initial "break-in" problems at an Arkansas reactor. Tr. 1712-1713. In seven or eight additional anticipatory trip requests over approximately the next six months, however, no failures occurred. Fol. Tr. 1988, Dieterich Testimony on Board Question CEC 1-6, etc., at 16; fol. Tr. 1163, Thatcher Testimony on Board Question 9, etc., at 8-9. The Board found, and we agree, that control-grade trips are therefore sufficiently reliable for short-term operation.

record that SMUD has yet fulfilled its commitment in response to the Commission's May 1979 order. We therefore request the staff and SMUD to inform us whether the safety-grade trip has, in fact, been installed, and, if it has not, to explain the delay and provide a projected completion date.

C. Small-break LOCA Analyses

The Commission's May 1979 order directed SMUD to "[c]omplete analyses for potential small breaks and develop and implement operating instructions to define operator action." 44 Fed. Reg. 27779. The staff reviewed SMUD's actions with regard to this "short-term" item and, although it concluded that the licensee had complied with this aspect of the Commission's order, it identified several additional studies assertedly needed for long-term operation: (1) the more detailed small-break loss-of-coolant accident (LOCA) analyses discussed in Sections 8.4.1 and 8.4.2 of NUREG-0560, "Staff Report of the Generic Assessment of Feedwater Transients in Pressurized Water Reactors Designed by the Babcock and Wilcox Company," and (2) analyses to (a) confirm that AFW, if lost, can be restored within a reasonable period of time and (b) describe the thermal-mechanical behavior of vessel materials under these conditions. Fol. Tr. 362, Staff Evaluation at 19, 23. The Licensing Board also discussed SMUD's small-break LOCA analyses (performed by B&W), eventually finding them "adequate to demonstrate that core cooling will be sufficient" so as to assure Rancho Seco's safe response to such events. See 13 NRC at 586-598 (I.D., ¶¶70-101). It is not readily apparent from either the record or the Board's decision, however, whether the specific analyses identified by the staff as necessary for long-term operation have been performed, and, if so, what the results were. Consequently, we request the staff and SMUD to submit a status report on these further analyses.

Otherwise, the Licensing Board's decision accurately and fully reflects the evidence adduced on this important issue, and we tentatively agree with the Board's general conclusions. While this matter was pending our *sua sponte* review, however, counsel for SMUD directed our attention to another matter related to the small-break LOCA analyses.¹⁴ A March 25, 1981, letter from B&W to SMUD on "Reactor Coolant Pump Suction Small Break LOCA" points out that the small-break LOCA analyses discussed in this proceeding assumed, as a "worst case," a small break at the reactor coolant pump *discharge* line. In normal circumstances, this type of break would be more severe than a pump *suction* line break, since, in the latter case, a greater degree of high pressure injection (HPI) penetration is achieved. But where HPI is not automatically initiated and

¹⁴ June 10, 1981, letter from Thomas A. Baxter, Esq., served on all parties. We commend SMUD counsel for alerting us and the parties to this matter.

AFW flow is delayed, a pump suction break can result in a greater loss of fluid inventory. Thus, the B&W LOCA analyses could be characterized as incomplete, insofar as they did not consider a “pump suction break/delayed AFW” scenario.

The B&W letter suggests further analysis is unnecessary, however, because the post-TMI-2 small-break LOCA guidelines for operator action and upgrading of the AFW control system are equally relevant to a pump suction break, and this scenario is, in any event, highly unlikely. In his cover letter, counsel indicates that SMUD’s witnesses have reviewed this information and would not alter their testimony before the Licensing Board. See, e.g., fol. Tr. 535, Karrasch and Jones Testimony on Board Questions CEC 1-2, etc., at 50-63; fol. Tr. 2948, Rodriguez Testimony on Board Questions CEC 1-2, etc., at 25-31. Nevertheless, we believe it would be useful to have the staff’s (and any other party’s) comments on the B&W letter and the “resolution paths” proposed in it.

D. High Pressure Injection

In paragraph 125, the Licensing Board properly noted its “concern” that the number of high pressure injection (HPI) initiation cycles permitted (under the design basis of Rancho Seco) on each injection nozzle for the life of the plant is being approached. The Board, however, concluded — without elaboration — that the limit imposed on these cycles “may be overly conservative, and that there are several ways to cope with the matter should it become evident that a real safety limit is being approached.” 13 NRC at 607 (I.D., ¶125). But the record, in our view, does not support the Board’s somewhat optimistic appraisal of the effect of the Commission’s May 1979 order on the HPI system.

The number of HPI cycles projected for the 40-year life of the plant is 40, or one a year for each nozzle. Tr. 994-995, 997. Another 40 “test” cycles (at low pressure) are projected, which roughly convert to 30 cycles of high pressure injection. Tr. 2014-2015. A staff witness acknowledged that “one of the high pressure injection nozzles, has been subjected to 31 thermal cycles to this date,” and a SMUD witness later stated that all three of the HPI nozzles are already in the “ballpark” of 30 thermal cycles. Tr. 1159, 2018. Because one of the consequences of the Commission’s May 1979 order is an increase in the number of reactor trips, and according to the staff, this leads to a “likely” increase in high pressure injections,¹⁵ there is a substantial chance that the permitted lifetime number of HPI cycles for each nozzle will soon be reached.

¹⁵ See fol. Tr. 1163, Rubin and Novak Testimony on CEC Contentions 1-1 and 1-12 at 3. But compare the views of SMUD’s witnesses that a resulting increase in high pressure injections is *not* anticipated. Fol. Tr. 535, Karrasch and Jones Testimony on Board Questions CEC 1-2, etc., at 41; Tr. 997. See also 13 NRC at 606 (I.D., ¶124).

Reaching this limit carries with it the implication that the nozzles will begin to experience some degradation and diminished effectiveness thereafter. Unfortunately, neither the record nor the Board's opinion deals satisfactorily with the impact that this matter may have on safety. In the first place, the record should, but does not, establish the maximum allowable number of thermal cycles for each HPI nozzle. SMUD's testimony reflects no tangible basis for the original lifetime limit of 40 HPI cycles plus 40 test cycles for each nozzle. See, e.g., Tr. 2015. Further, licensee witness Dieterich stated that recalculations based on different usage factors may or may not show that the HPI nozzles can withstand more cycles. *Ibid.* Thus, while the permitted number of cycles may well be "overly conservative," as the Board found, there is no real evidence to justify that characterization or upon which to rely in setting a new limit on thermal cycles. Moreover, although the record does show "several ways to cope with the matter,"¹⁶ it does not reflect any consideration of means to detect thermal cycle effects or to prolong the life of the HPI nozzles.

The record gives no cause to doubt that the existing design basis total of 70 cycles per nozzle (40 plus 30 converted from test cycles) is safe. But in view of the facts that (1) this limit is being approached more quickly than anticipated, and (2) an increase in high pressure injections and thus added stress on the HPI nozzles is likely, we conclude that further analysis by SMUD and the staff is warranted. Accordingly, we shall retain jurisdiction of this case to enable supplementation of the record with analyses of (1) the maximum allowable number of thermal cycles on the HPI nozzles; (2) methods of detecting thermal cycle effects on the nozzles; (3) possible means of prolonging the useful life of the nozzles; and (4) technical specifications or operating procedures that might reduce the use of the HPI without endangering the core. SMUD and the staff should submit a proposed schedule for supplying this information.

E. Operator Training and Competence

Short-term items (d) and (e) required SMUD to "implement operating instructions to define operator action" for potential small breaks and to assign to the Rancho Seco control room one senior licensed operator who

¹⁶ At least three methods were noted: (1) cutting out the old nozzle and welding in a new one — a "very costly" procedure; (2) adding a mini-flow line that bypasses the HPI valve and permits cold water to trickle through the nozzle continuously to eliminate thermal shock; and (3) limiting HPI initiation. Tr. 2016, 2019. See also Tr. 3358.

has had TMI-2 training on the B&W simulator. For the long term, the Commission's order required at least two licensed operators per shift with TMI-2 training on the simulator, one of whom is to be assigned to the control room. 44 Fed. Reg. 27779. Because the Commission directed the Licensing Board to explore whether these measures were "necessary and sufficient" for the safe response to feedwater transients, the matter of operator training and competence arose in this proceeding.

Although the principal focus of the Commission's order (insofar as operator training is concerned) was on TMI-2 simulator and other training, the Licensing Board devoted a relatively substantial portion of its decision to contentions that challenged the general adequacy of the overall Rancho Seco training program. See 13 NRC at 609-624 (I.D., ¶¶130-165). Indeed, the Board affirmatively disclaimed any mandate to review the adequacy of the post-TMI-2 program, in particular. *Id.* at 613 (I.D., ¶140). See also *id.* at 611 (I.D., ¶137). We have no quarrel with either the relevance in this case of some discussion of the overall training program at Rancho Seco, or the Board's favorable conclusions on this issue. We point out, however, that SMUD, like all licensees, is *expected* to comply with the NRC regulations that govern training and operator competence, obviating any lengthy discussion to the effect that SMUD is doing what it is supposed to do. More importantly, as noted, the emphasis in this special proceeding was to be on the training undertaken in the wake of the events at TMI-2. Thus, we find it somewhat disconcerting that the Board devoted comparatively little of its decision to the special post-TMI-2 training given Rancho Seco's operators.

We are nonetheless convinced by the underlying record that SMUD personnel adequately understand the TMI-2 sequence of events and the proper responsive action.¹⁷ Where the NRC staff identified weaknesses in the program, SMUD undertook additional training and corrective measures that the staff audited and later found to be acceptable.

One other aspect of the Licensing Board's discussion of operator training and competence warrants comment. CEC contended, on the basis of its depositions of three Rancho Seco operators (CEC Exhibits 36, 37, and 38), that a senior operator did not display a complete understanding of plant operations and an operator had an inadequate understanding. The Board, however, concluded on the basis of the entire record that SMUD's operators have sufficient knowledge and understanding of the facility. 13 NRC

¹⁷ Of particular value are the following portions of prefiled testimony: fol. Tr. 1163, Capra Testimony on FOE Contention III(c) at 5-6; fol. Tr. 2948, Rodriguez Testimony on Board Questions CEC 1-2, etc., at 15-18, 23-24, Appendix III, fol. Tr. 3496, Bridenbaugh-Minor Testimony at 6-13; fol. Tr. 3788, Wilson Testimony on Board-CEC Question 1-7, etc., at 4-7, 11, 15, 17, 19-21; fol. Tr. 362, Staff Evaluation at 24-26.

at 615 (I.D., ¶147). In reaching this conclusion, the Board discounted CEC's reliance on the three depositions by noting that "[a] considerable portion of each deposition was devoted to matters such as description of the facility, operator experiences with various transients, equipment availability, descriptions of the SMUD organization, and other matters not germane to the operators' training and knowledge." *Ibid.* We disagree with the Board's characterization of these matters as "not germane" and find them to be of obvious relevance to an inquiry of operator competence.

The Board also indicated its reluctance to give much weight to the depositions because of its inability to observe the witnesses' demeanor. It opined that the operators were unaccustomed to answering questions under oath and thus might not give their best answers. The Board further stated that this may have been the reason for an operator's incorrect answer regarding "feed and bleed" cooling. *Ibid.* n.15. But rather than engaging in such speculation, in our view, the Board should have either focused on the totality of the depositions and the exact way the questions were phrased and answered, or — if it still had *serious* concerns — called the deponents as witnesses for additional questioning.

We have reviewed the depositions in question (ranging from approximately 80 to 150 pages) and find that, overall, they and the other evidence of record reflect adequate knowledge and training on the part of the three operators. The few instances cited by CEC to show a lack of operator understanding involved questioning that was confusing or vague and thus susceptible to responses in kind.¹⁸

F. Instrumentation

In response to the Commission's May 1979 order and the accident at TMI, SMUD made various modifications to the instrumentation in the Rancho Seco control room and elsewhere.¹⁹ See 13 NRC at 628-629 (I.D., ¶¶179-181). The Licensing Board noted, however, two instances in which the NRC staff assertedly found that additional instrumentation or study was needed — extended pressurizer level indication and reactor vessel water level indication. *Id.* at 584, 631 (I.D., ¶¶63, 185). As to the former, the Board agreed with the staff's alleged recommendation that "steps [should] be taken to assure that pressurizer level indication not be lost." *Id.* at 584 (I.D., ¶63). See also *id.* at 586 (I.D., ¶69). But as to vessel level indication in particular, and Rancho Seco's instrumentation in

¹⁸See, e.g., CEC Exhibit 38 at 18-19; CEC Exhibit 36 at 16.

¹⁹The hearing devoted significant attention to the configuration of the Rancho Seco control room itself, particularly the placement of the main feedwater and auxiliary feedwater controls. See 13 NRC at 632-633 (I.D., ¶¶188-192). Our review of the record convinces us that the control room design is a good one, *provided* two operators are present, as is now required (see p.801, *supra.*)

general, the Board concluded that the present instrumentation is "state-of-the-art" and adequate to cope with feedwater transients. *Id.* at 631-632 (I.D., ¶¶186, 187). We believe these matters merit further attention and clarification.

1. A contention raised by Hursh and Castro, and later adopted as a Board question, concerned whether the capacity of Rancho Seco's pressurizer is adequate to accommodate various feedwater transients. It was in this context that the related issue of maintenance of pressurizer liquid volume arose. While testimony referred to data showing that, in each instance of a reactor trip at a B&W PWR, the pressurizer did not actually empty, there was other evidence that level *indication* had occasionally been lost at the lower end of the scale. *Id.* at 584 (I.D., ¶¶62, 63). In its Exhibit 4, NUREG-0667, "Transient Reponse of Babcock & Wilcox-Designed Reactors," at 5-13, the staff stated that "the loss of pressurizer level, along with the need for operator actions of the kind described, places the plant in an undesirable condition and should be remedied." Relying on this staff document, the Licensing Board found that, although loss of pressurizer level indication may not pose a threat to safety, "the Staff recommendation should be complied with" so as to facilitate operator action. 13 NRC at 584 (I.D., ¶63). Later, the Board directed SMUD and the staff "to proceed directly with plans for extended pressurizer level indication." *Id.* at 586 (I.D., ¶69).

We find both the staff's position on this matter and the Licensing Board's direction to the staff and SMUD to be somewhat unclear. The pressurizer at Rancho Seco, as described in the licensee's testimony, has three separate, temperature-compensated water level indications, calibrated to cover "the normal operating level range of the pressurizer and provid[ing] sufficient margin above and below that operating range to allow the operators additional time to take action and to restore a proper level within the pressurizer in the event of an off-normal condition." Fol. Tr. 2948, Rodriguez Testimony on Board Questions CEC 1-2, etc., at 46. There are also alarms to alert the operator to off-normal conditions. *Ibid.* The staff's prefiled testimony stated that similar B&W pressurizer level indication was "reliable" during the TMI-2 accident, but described circumstances in which level indication might be lost. Fol. Tr. 1163, Norian Testimony on Board Question 22 at 3, 4. See also Tr. 774. The staff did not suggest there, however, that extended pressurizer level indication was necessary. Further, staff Exhibit 4 — contrary to the Board's interpretation — recommends study of ways to mitigate loss of pressurizer

level, not pressurizer level indication. Staff Exhibit 4 at 5-13.²⁰ The staff's oral testimony seems to support this interpretation of Exhibit 4, though it is not entirely free of confusion. See Tr. 1460-1464.

While we agree with the Board that the loss of level indication down-scale may not be a threat to safety, we nonetheless request the staff to clarify its position on this matter, particularly since the Board instructed SMUD and the staff to proceed "directly" with "plans" for extended level indication.²¹ Following receipt of the staff's statement, we will determine whether it is necessary to formalize the Licensing Board's direction in paragraphs 63 and 69.

2. The Licensing Board, in paragraph 185 (13 NRC at 631), found a difference of opinion among the witnesses on the desirability of direct detection of reactor vessel water level. While SMUD concluded that no available designs for such instrumentation would give unambiguous indications,²² the staff — according to the Board — expressed a "need" for a reactor vessel water level indicator.²³ The Board nonetheless concluded that existing instrumentation is sufficient, particularly in view of the pending rulemaking on "Interim Requirements Related to Hydrogen Control and Certain Degraded Core Considerations," in which the need for a reactor vessel water level indicator is under consideration. 13 NRC at 631 (I.D., ¶186). See 45 Fed. Reg. 65466, 65471, 65473 (October 2, 1980).

Our concern is not with the Board's conclusions, but, again, with its somewhat misleading characterization of the staff's views. The relevant prefiled staff testimony stated that "[t]he existing instrumentation will be reviewed as part of the ICC [inadequate core cooling] studies to determine if any additional instrumentation is needed, such as reactor vessel water level, to supplement existing devices." Fol. Tr. 1163, Norian Testimony on Board Question 22 at 5 (emphasis added). The same testimony indicated that any such additional instrumentation would serve as a "backup" to the existing systems. *Id.* at 6. At no point did the staff aver that reactor vessel level indication was "needed." See also fol. Tr. 3788, Wilson Testimony on

²⁰ This document also assigns a relatively low priority to "System Response Modifications to Prevent Pressurizer Level Loss and ECCS Actuation." See Staff Exhibit 4 at 7-18, 7-21, 7-38 - 7-39.

²¹ Specifically, the staff should address whether it intended in NUREG-0667 to recommend extended pressurizer level indication, and, if so, whether that is still its position.

²² SMUD also emphasized that the loss of subcooling, and not reactor vessel level, is the key to operator action, and that existing instrumentation enables the operators to monitor this condition. Fol. Tr. 2948, Rodriguez Testimony on Board Questions CEC 1-2, etc., at 46-48. See also fol. Tr. 1163, Norian Testimony on Board Question 22 at 5-6.

²³ CEC testified generally as to the desirability of such an indicator, but recognized the need for careful research on the best measurement system. Fol. Tr. 3496, Bridenbaugh-Minor Testimony at 15.

CEC Issue 5-3a at 5. Later at the hearing, a staff witness, in response to Board questioning, opined that this item is "not ... required." Tr. 3877. Finally, in our review of the record, we have discovered no evidence that the staff subsequently recommended this instrumentation for Rancho Seco after the ICC study and review to which the Norian testimony referred.

G. Hydrogen Control

One of the issues raised by former intervenors Hursh and Castro concerned Rancho Seco's ability to cope with the generation of hydrogen within the containment following an accident like that at TMI-2. Noting several reports on TMI-2, the Licensing Board found that it could not "accept without question the notion that, following a feedwater transient, no serious accumulation of hydrogen could occur before a recombiner could be installed." Order of February 14, 1980, at 7. It therefore adopted the Hursh-Castro contention as a Board question and received evidence on it at the hearing.

In its initial decision, the Board found — without much elaboration — that, even though Rancho Seco is not protected by recombiners or purging of hydrogen in amounts like those produced at TMI-2, the facility could withstand the generation and combustion of such amounts of hydrogen. The Board also pointed out, however, that since the Commission has initiated a rulemaking to explore ways to mitigate the consequences of hydrogen within the containment,²⁴ it could "rely upon the Commission's implied judgment that operation of Rancho Seco ... in the interim will not present an undue hazard to health and safety." 13 NRC at 637 (I.D., ¶206).

Premitting the question of whether hydrogen control is even within the scope of this special proceeding, we would ordinarily expect a more substantial treatment of this matter than that set forth in the initial decision. But, as the Licensing Board observes, the Commission now has under consideration the consequences of the generation of large amounts of hydrogen within the containment following a TMI-2 event. In this circumstance, we rely on our prior holding that "licensing boards should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission." *Potomac Electric Power Co.* (Douglas Point Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974). We thus leave the matter of hydrogen control at Rancho Seco to the Commission's consideration in the ongoing

²⁴See 45 Fed. Reg. at 65472, *supra*.

rulemaking and refrain from any explicit comment or judgment on this portion of the Board's decision.²⁵

III.

This memorandum has identified several areas that require additional analyses or information from SMUD and the staff before we are able to find that the actions ordered by the Commission in May 1979 are necessary *and* sufficient to assure Rancho Seco's safe response to feedwater transients. To summarize, we request the following information by *November 20, 1981*:²⁶

1. Status reports from SMUD and the staff on the six recommendations in BAW-1564 to enhance AFW safety and reliability;
2. Status reports from SMUD and the staff on SMUD's commitments to improve AFW reliability, as described in CEC Exhibit 21 (Enclosure 2);
3. Status reports from SMUD and the staff on the installation of the safety-grade anticipatory reactor trip;
4. Status reports from the staff and SMUD on the need for the additional analyses identified in the Staff Evaluation at 19, 23 (see p. 809, *supra*);
5. Staff comments on the March 25, 1981, letter from B&W to SMUD concerning "Reactor Coolant Pump Suction Small Break LOCA";
6. SMUD and staff *schedules* for HPI analyses; and
7. Staff clarification of its position on the need *vel non* for extended pressurizer level indication.

Following the receipt and consideration of this material, we will determine whether it is necessary to order additional action.

²⁵ We note that the Board itself took this course with regard to the exclusion from this proceeding of contentions concerning emergency response plans. See Order of October 5, 1979, at 2-4.

²⁶ The parties may each submit this material in one document.

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

Before Administrative Judges:

Peter B. Bloch, Chairman
Jerry R. Kline
Hugh C. Paxton

In the Matter of

Docket Nos. 50-266-OLA
50-301-OLA

WISCONSIN ELECTRIC
POWER COMPANY
(Point Beach Nuclear Plant,
Units 1 and 2)

October 1, 1981

In order to help expedite the proceeding, the Board asked a series of questions based on a technical report submitted in support of the application for a license amendment. The Board also adopted special procedures to attempt to resolve the case fairly prior to the time Applicant seeks to conduct a demonstration program.

RULES OF PRACTICE: BOARD QUESTIONS

Under extraordinary circumstances created by the need to decide rapidly whether to authorize Applicant to conduct a tubesleeving demonstration program, it is appropriate for the Board to address questions to Applicant even before formal action has been completed concerning the admission of an Intervenor into a license amendment proceeding.

RULES OF PRACTICE: DISCRETION OF PRESIDING OFFICER

The Board can authorize a variety of special filings in order to expedite a proceeding sufficiently to permit a decision to be made prior to the date on which Applicant requests approval to conduct a demonstration program pursuant to its license amendment request.

RULES OF PRACTICE: FAIRNESS IN AN EXPEDITED PROCEEDING

Special sensitivity must be shown to Intervenor's procedural rights when the cause for haste in a proceeding was a voluntary decision by Applicant concerning both the timing and content of its request for a license amendment.

RULES OF PRACTICE: *SUA SPONTE* ISSUES

Board questions designed to elicit information rapidly in order to expedite a license amendment proceeding, need not be considered *sua sponte* issues requiring notification of the Commission.

RULES OF PRACTICE: DISCOVERY

When haste is required, Petitioners can be granted the right to utilize discovery even before they are admitted as parties.

RULES OF PRACTICE: ORDER TO SHOW CAUSE

Applicant can proceed with a proposed demonstration program requiring a license amendment unless Petitioner/Intervenor can show cause why it would be appropriate not to authorize the demonstration program.

**MEMORANDUM AND ORDER
Requesting Additional Information**

On September 28, 1981, Applicant filed a Motion for Authorization of Interim Operation of Unit 1 with Steam Generator Tubes Sleeved Rather than Plugged. Neither petitioner nor Staff have yet had the five days we allotted to them for a response. However, we find that this filing contains insufficient information and we have therefore framed a series of requests for additional information which will help us to decide the question on its merits. Since we do not believe that any party's rights will be prejudiced by ordering a response to these requests for information, we are issuing these requests subject to comment by all parties. Unless we are persuaded otherwise, failure to respond to these questions could result in an adverse determination concerning facts or legal conclusions.

We recognize that this Board action, taken even before we have decided whether or not to grant the intervention petition filed by Wisconsin's Environmental Decade (Decade), is extraordinary action. However, this is no ordinary case, as the ensuing chronology documents.

I. BACKGROUND OF THE CASE

On July 2, 1981, Wisconsin Electric Power Company (WE) asked the Office of Nuclear Reactor Regulation to amend the licenses for Units 1 and 2 (Point Beach). WE's license requires it to plug tubes in its steam generator when the walls of the tubes have been degraded by more than 40 percent of their original thickness. The amendment seeks permission to insert new tubes or "sleeves" inside of the defective tubes and to operate the reactor with sleeved rather than plugged tubes. The sleeving would occur in two parts: a demonstration involving up to 12 tubes to be sleeved in the fall of 1981 and a program involving about 1,000 tubes to be sleeved in March 1982.

A. Claims Concerning Urgency

WE urges substantial urgency for the treatment of its application. In particular, it requests approval of the amendment in time to conduct the sleeving demonstration program "during the Point Beach Unit 1 fall refueling outage." The WE assertion of urgency was reiterated in a September 18 filing requesting issuance of a hearing schedule to assure completion of the proceeding by March 16, 1982. Even greater urgency is sought because of WE's most recent request, for interim operation of Point Beach Unit 1 with sleeved tubes, following a refueling outage scheduled to begin on October 9, 1981.

Decade requested a hearing in a filing of July 20, 1981, antedating the NRC's publication of federal register notice which announced the opportunity for a hearing. 46 Federal Register 40359 (August 7, 1981). Decade vehemently contests the need for expediting this hearing, stating:

Steam generator tube degradation and sleeving programs have been the subject of intense controversy in this country, sufficient to alert the Licensee of the possible necessity for a hearing. If the Licensee did not file its application in time for the normal procedures to run their due course, then it is not in a position to request an abbreviated schedule that restricts the rights of others. This is especially the case when the other party has extremely limited financial resources and when shorter time periods effectively act to bar meaningful public participation.

It should be noted, as well, that the licensee makes no claim that there is any compelling need to complete the sleeving program for Point Beach Unit 2 in March 1982, other than the fact that this apparently is the time which has been scheduled for the overhaul. A matter of apparent convenience to the Licensee is not a sufficient ground to override a matter of meaningful participation for members of the public; this is especially true in a case involving a controversial project of the size and nature proposed by the Licensee.

Intervenor's Response to Licensee's Proposed Hearing Schedule at 2-3.

B. The Board's Approach.

On September 16, 1981, the Board held an on-the-record telephone conference for the purpose of clarifying the status of the case and working out procedures for the fair and expeditious handling of the proceeding.

During the conference a number of steps were taken in order to attempt to expedite the proceeding. One step was to authorize WE to file an "interim motion with supporting information, affidavits if necessary, to show that there is no problem with this sleeving program." Tr. 8. The supporting information was intended to include "full documents on the amendment, including [a] ... Westinghouse study" being prepared for Applicant. Tr. 6, 17.

We conducted oral argument, subject to subsequent briefing, concerning the relevance to the proceeding of three of Decade's contentions. Tr. 29-37. During the Conference the parties agreed that the issue of whether or not the Staff must prepare an Environmental Impact Analysis would be held open until the Staff decides whether or not to prepare one. Tr. 46-47. We ordered the parties to facilitate discovery by discussing "everything that is available and relevant." Tr. 49-50. We set deadlines for the filing of a request for scheduling the hearing and for responses to that request. Tr. 21-26.

Both WE and Staff have conceded that Decade has standing to intervene. Tr. 41, 55. The Board agrees. However, WE and Staff object to the lack of basis for Decade's contentions. The Board invited a fast-track particularization of the contentions, based on Decade's representations that further basis was available. Tr. 62. We even established a procedure by which WE and Staff might waive their rights to respond to the basis that was to be offered. Tr. 71. However, on September 28, 1981, we were informed that WE would not waive that right; so we are awaiting its response.

Meanwhile, with Applicant's support (Tr. 57) and opposition from both Staff (Tr. 72) and Decade (Tr. 61, 64.), we also ordered that discovery could commence even before a decision was reached on the admissibility of

contentions. At the time, we anticipated that the matter of basis could be rapidly decided in petitioner's favor. Now, however, WE insists on responding, so that presumption is no longer called for. Hence, discovery shall not be had against Decade. But it would continue to expedite the proceeding by permitting to allow Decade to propound discovery requests to WE. Although this will involve some risk of wasted expense should Decade not be admitted as a party, we are hopeful that it will nevertheless proceed to use this authorization.

The Commission's procedural rules are designed for fair and efficient proceedings. Ordinarily, those rules should be used as helpful tools. When we deviate, as we do in this case, we do so because those usual procedural tools will not provide us with the timely decision that is required. However, in our innovations, we are cautious because we do not wish to compromise any party's rights to a fair proceeding. Consequently, we will be receptive to any serious claim of prejudice from our unorthodox methods. Simultaneously, we will be grateful to parties who join us in a cooperative spirit that seeks to determine this case on its merits and avoid unnecessary adversary squabbles.

In this case, we expect to be particularly sensitive to petitioner's procedural rights because we agree with Decade that the need for expedition has been created by WE, which delayed filing its amendment only because of its incorrect assumption that a hearing would not be necessary. (Tr. 16.) In fact, WE's plans concerning sleeving were formulated well before its filing and have already been the subject of a decision of Wisconsin's Public Service Commission. *Investigation ... into the ... Ratemaking Effects of Steam Generator Degradation, etc.*, Public Service Commission of Wisconsin, 6630-UI-2, 6630-CE-20, 6630-ER-10 (August 11, 1981).

II. THE BOARD'S QUESTIONS

In this overall setting, the Board must decide how to attempt to reach a fair determination concerning an interim order before October 9 and concerning the full Amendment Application by early March, without compromising any party's rights. With that in mind, we carefully read WE's request for interim relief and the accompanying *Point Beach Steam Generator Sleeving Report for Wisconsin Electric Power Company*, WCAP-9960 (proprietary)(Westinghouse Report).

The Westinghouse Report and WE request left us with a series of unanswered questions. Ordinarily, answers would be obtained by waiting for Staff analysis, Decade's response and WE's clarifications. However, there is no time for such a delay. To wait would be to moot the WE request. Hence, we have decided to propound our questions immediately. We believe that this procedure will be helpful to Decade but that this

assistance is permissible because it results from our concern for necessary expedition rather than from an attempt to assist an intervenor. Staff's rights also should not be prejudiced, since Staff will have the opportunity to ask questions of its own and to help to provide answers to the Board's questions. (We do not consider these questions to be *sua sponte* issues requiring Commission notification.)

We urge WE to respond fully to our questions. Any full response will suffice, including a cross-reference to a portion of the Westinghouse Report which may have escaped our notice. Our questions are these:

- (1) Describe fully the demonstration you are proposing to conduct and its importance to the overall sleeving project. More specifically, what techniques are to be tested, what empirical information will be collected and how will the data be evaluated?
- (2) What basis is there for believing that the demonstration is sufficiently safe to proceed without full discovery and a hearing? In particular, what problems might arise if from 6 to 12 tubes involved in sleeving were to shear?
- (3) What is the basis for the statement in §4.1.2 (section references are to the Westinghouse Report) concerning the tube-to-tubesheet weld? (Some of these questions may be difficult to understand without reference to arguably confidential information contained in the Westinghouse Report.)
- (4) With how much force is the sleeve driven into the tube? What happens if there is an obstruction in the tube? (§4.2.1.)
- (5) Is it possible for the internal dimension of the sleeve to be too large? If so, what is done to remedy the situation. (§4.3.)
- (6) Will all the joints be measured during the demonstration? (§§4.6.1, 4.6.2.) What criteria will be applied to decide whether the sample size should be increased in light of preliminary results? (§§4.6.1, 4.6.2.)
- (7) What is the basis for the conclusion of "no significant effect" on page 4.17?
- (8) Has provision been made to adjust processing of tubes if they are crooked? (§5.1.) How, if at all, will crookedness affect tube preparation or insertion?

- (9) What is the basis for believing it to be safe to conduct a demonstration program before testing is completed? (§§6.1.3.1, 6.1.3.2; Tables 6.1-11, 6.1-3.)
- (10) How, if at all, do the tests now being performed on the sleeves and joints differ from tests performed for initial licensing? Please explain any differences.
- (11) One of five samples appears to have experience axial translation at 1610 lbs. and the range of test results was almost equal to the average. Are these test results consistent with safety? (Table 6-16.) Please compare these results to Task M4 in Appendix A.
- (12) Has there been any corrosive weakening of the joints between the tubes and tubesheet?
- (13) Has there been any shearing or rupturing of tubes in Units 1 and 2 or in similar steam generators located elsewhere?
- (14) Please explain the basis for using the adjective "unrealistically" on p. 6.61 and for believing that the substituted calculation is realistic.
- (15) Are we correct in assuming that Westinghouse is planning maintenance procedures to reduce the number of personnel/hours of exposure and not merely to "provide for the minimum number of personnel." (§8.0.)
- (16) How much corrosion can be expected in normal operation in crevices which may occur between a corroded outside tube and the sleeve?
- (17) For how long a time are the sleeves expected to function?
- (18) On what date did WE inform the State of Wisconsin Public Service Commission of its interest in sleeving tubes in its steam generator?
- (19) What is the legal basis for us to issue an Order for Interim Operation before completion of the full hearing process?

III. FURTHER PROCEEDINGS

Although our questions may advance discovery and expedite the proceeding, there still remains the task of fashioning a method to satisfy the legitimate procedural needs of the parties.

First, we plan to act expeditiously on the admission of contentions upon receipt of WE's response.

Second, we encourage Decade to make immediate use of the discovery process, even before it is admitted as a party.

Third, we solicit comments from the parties concerning the following procedural plan, which we expect to implement providing the Decade is admitted as a party. Pursuant to this plan, Decade and the Staff would have 14 days from receipt of WE's answers to Board questions to show cause why an Order authorizing immediate operation with up to 12 tubes sleeved should not be issued. Cause might consist of legal argument or of a substantive matter which should be pursued before the Board can reach a reasonable conclusion concerning the safety and environmental acceptability of the amendment. Cause could include comment on whether the demonstration proposed by WE is important to its overall sleeving program. It would be understood that a showing of good cause would require that something important be shown but that, given the fact that WE could have alleviated the urgency in this matter by filing earlier, the Board will listen receptively to attempts to show cause.

Fourth, we urge the Staff to disclose to the Board at as early a time as possible whether staff expects to be prepared to act in a timely fashion on the interim order request. Since it is the Director of Nuclear Regulation who issues an Amendment, and not the Board, the inability of the Staff to achieve timely action could moot WE's request.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this first day of October 1981

ORDERED

- (1) Wisconsin Electric Power Company shall respond to the questions propounded in the accompanying memorandum.
- (2) The parties and petitioner have 5 days to comment on the issuance of the show cause order discussed in the accompanying memorandum.

- (3) Wisconsin's Environmental Decade is authorized to make immediate use of the discovery process with respect to its contentions 3 through 7.
- (4) This is an interlocutory order and is not subject to appeal.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**October 1, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H. Frye, III, Chairman
Elizabeth B. Johnson
Quentin J. Stober

In the Matter of

Docket Nos. 50-259-OL
50-260-OL
50-296-OL

TENNESSEE VALLEY AUTHORITY
(Browns Ferry Nuclear Plant,
Units 1, 2 and 3)

October 2, 1981

Licensing Board denies petitions to intervene in regard to Applicant's request for temporary onsite storage of low-level radioactive waste because the petitions fail to raise an acceptable contention.

NEPA: SCOPE OF REVIEW

The environmental assessment of a proposed Federal action may be confirmed to that action together with its unavoidable consequences.

RULES OF PRACTICE: CONTENTIONS, ADMISSIBILITY OF

Contentions which raise matters outside the scope of an application for a license amendment are inadmissible.

PREHEARING CONFERENCE MEMORANDUM AND ORDER
(Ruling on Petitions to Intervene and Requests for Hearing)

On July 31, 1980, the Tennessee Valley Authority (TVA) submitted a request for an amendment to its operating licenses for the Browns Ferry Nuclear Plant. This amendment would have permitted TVA to store low-level radioactive waste (LLRW) generated at Browns Ferry on the Browns Ferry site for the life of the plant. (Request of July 31, 1980, to Harold R. Denton, Director, NRR, from L. M. Mills, Manager, Nuclear Regulation and Safety, TVA.) This request was prompted by restrictions imposed on the amount of LLRW that will be accepted for burial at Chem-Nuclear Systems, Inc.'s commercial disposal site at Barnwell, S.C. (Request, Enclosure 2, pp. 1-2.) Following a conference with the NRC Staff, TVA amended its request to seek authorization to store LLRW for a period of five years (Letter of November 17, 1980).

On December 4, 1980, the NRC issued a Notice of Consideration of Amendments to Facility Operating Licenses with respect to TVA's request (45 F.R. 81697, December 11, 1980). This Notice provided that any person whose interest might be affected could petition to intervene in the proceeding and request a hearing by January 12, 1981. In response to this Notice five timely petitions were received from David R. and Uvonna J. Currott, Nancy Muse, Richard L. Freeman, Noel M. Beck, and Robert W. Beck of Florence, Alabama; Alice N. Colcock, and Betty L. and John R. Martin of Sheffield, Alabama; and Thomas W. Paul, Richard W. Jobe, Marjorie L. Hall, Gregory R. Brough, Michael D. Pierson, David Ely, and Debbie Havas of Huntsville, Alabama. Hollis Fenn of Florence, Alabama, and Rebecca Hudgens and Tom Thornton of Huntsville, Alabama filed a timely petition which was not received by NRC. (See this Board's "Order Setting Special Prehearing Conference" of March 10, 1981, at p. 2.) A copy of that petition was furnished on February 2, 1981. The petitions are identical.

All of the Petitioners live approximately 30 to 35 miles from the plant. They allege that they will be adversely affected by this proceeding in that they are: (1) customers of electric utilities which purchase electricity from TVA; (2) dependent on sources of water, food stuffs and air in proximity to the plant; and (3) owners of property which is subject to damage as a result of this proceeding. More specifically, Petitioners state that the granting of TVA's request may affect their interests by "... increasing the on-site radioactive inventory and increasing the risk of radioactive contamination to [petitioners and their] descendants, increasing the risk of fire, air contamination, water pollution and other dangers to [petitioners and their] descendants." (Petitions, p. 3.)

TVA opposes the petitions on the ground that Petitioners have not demonstrated that they have standing. Among its objections, TVA notes that while Petitioners' residences are geographically close enough to the plant to support standing in a reactor licensing case, these residences are too distant to afford standing in this case because the request for the amendment contemplates levels of radiation at the site so low as to cause no concern for public health and safety. (TVA's Reply of January 27, 1981.)

The Staff, on the other hand, conceded Petitioners' standing but urged that they be permitted to amend their petitions to satisfy the requirement of 10 CFR §2.714 that they state the aspects of the proceeding with which they are concerned. (NRC Staff's Responses of January 28 and February 23, 1981.)

On March 10, 1981, this Board* ordered that a prehearing conference be held. Petitioners were directed to file supplements to their petitions setting forth their contentions 15 days prior to the conference.

On March 26, Leroy J. Ellis, III and Robert B. Pyle entered their appearance on behalf of Petitioners and filed an amendment and supplement to the petitions setting forth aspects of the proceeding on which Petitioners wish to intervene as well as four contentions. Additionally, some Petitioners wrote to set forth their concerns in response to the Board's March 10 Order.

On April 3, TVA responded to Petitioners' March 26 filing reiterating its objection to standing and opposing the admission of any of the four-stated contentions. On April 7, the Staff responded opposing contentions two through four and agreeing to the admission of contention one as a legal issue only.

A prehearing conference was held on April 10 at which TVA, Staff and Petitioners were represented by counsel. Both standing and the four contentions advanced by Petitioners were considered. Subsequently, on April 27 Petitioners filed five additional contentions. On May 15, Staff responded with an opposition on the ground that Petitioners had not attempted to satisfy the requirements of 10 CFR §2.714 relating to untimely contentions. On May 8, TVA filed a response reiterating its former position and opposing the five new contentions on the grounds that they are both inadmissible and impermissibly late. On May 27, Petitioners filed a pleading addressing the 10 CFR §2.714 factors pertaining to untimely filings. On June 4, following a request from the Board, the Staff filed an opposition to the admission of contentions five through nine. In this filing, the Staff also took the position that contention one is now moot, and thus opposed all Petitioners' contentions.

* On September 9, 1981, this Board was reconstituted by appointing John H. Frye, III Chairman vice Herbert Grossman who was unable to serve because of a schedule conflict.

Standing

TVA's position with respect to Petitioners' standing to intervene in this proceeding presents an interesting argument which may not have been previously considered. TVA asserts that because the activity which it seeks to undertake (storage of low-level waste) involves a lesser degree of threat to the public health and safety than that ordinarily involved in a reactor licensing case, the traditional rules governing standing should not be applied. TVA in essence asserts that Petitioners' residences are too distant from Browns Ferry to support a claim of injury in fact which is required to support standing. In the absence of another basis for standing, TVA argues that the petitions should be dismissed. Staff did not address itself to the merits of this argument. Although we find the argument interesting, we also find it unnecessary to address it, and confine ourselves to a consideration of the Petitioners' contentions. Consequently, for purposes of this Memorandum and Order, we have assumed without deciding the question, that Petitioners have standing based upon their residence in proximity to Browns Ferry.

Contentions

As background to a detailed review of Petitioners' contentions, it is helpful to focus on Petitioners' principal concern. Petitioners do not question TVA's five-year LLRW storage plans. (Tr. 81-82.) Rather, Petitioners are concerned about what appears to them to be an overall plan to deal with LLRW at the Browns Ferry site. (Tr. 12-13, 74.) The source of this concern appears to stem from TVA's Environmental Assessment of February 28, 1980. The second paragraph of that document states:

It is the purpose of the Environmental Assessment (EA) to consider the potential environmental impacts of the proposed low-level radioactive waste (LLRW) management plans for Browns Ferry Nuclear Plant (BFNP). TVA's proposed LLRW management plan is threefold. It consists of (1) implementing the establishment of temporary LLRW storage areas, (2) installing equipment designed for volume reduction and solidification of LLRW, and (3) constructing facilities designed to safely store the LLRW generated at BFNP for the remaining operational life of the plant. Although each segment of the LLRW management plan could be implemented independently, each is an integral part of the proposal for BFNP and all will be considered together as a single action for the purpose of this document.

Petitioners focus in particular on the second aspect of the LLRW management plan, volume reduction and solidification (VRS) and are

concerned about TVA's expressed proposal to employ incineration of LLRW as a part of this plan. (Environmental Assessment, p. 11; Tr. 12-13.) The LLRW management plan as detailed in TVA's Environmental Assessment, together with TVA's amendment of its request to NRC for LLRW storage authority which reduced the term of the requested authority to five years from the life of the plant leads Petitioners to claim that TVA is seeking to improperly segment its overall LLRW management plan for purposes of NRC review.

These concerns are offset by other factors. First of all, Counsel for TVA has assured the Board in writing (Response to Petitioners' Second Amendment to Petitions to Intervene, pp. 2-4) and at the prehearing conference (Tr. 21-22, 43-44, 50-51, 54-55, 71-72) that TVA has not yet decided whether to pursue any LLRW management techniques other than the five-year storage for which NRC approval has been requested. Further, TVA's representations that the five-year storage proposal has immediate utility regardless what decisions may be made in the future with regard to other management techniques is beyond question.

Clearly, storage of LLRW onsite for five years will alleviate the present shortage of available disposal facilities and permit TVA to evaluate its options in light of future developments. Petitioners do not question this proposition. Nor does it appear likely that granting this authority would in any way prejudice NRC action on future TVA applications dealing with LLRW management.

In this connection, the need for further onsite LLRW management techniques may depend, at least to some extent, on the success of the Southern States Energy Board in providing for the disposal of LLRW. The staff informs us (Response to Petitioners' Motion Proposing Admission of Five Additional Contentions, p. 4) that this Energy Board was established pursuant to the Low-Level Radioactive Waste Policy Act of 1980 (Pub. L. 96-573, 94 Stat. 3347, December 23, 1980) and is exploring the formation of a "Southern Interstate Low-Level Radioactive Waste [Management] Compact." Should the Energy Board's efforts bear fruit, there could be no need to consider further LLRW management techniques for Browns Ferry.

In any event, should TVA in the future decide to implement additional onsite management techniques such as VRS, an application will have to be filed with NRC and hence the applicable hearing requirements of the Atomic Energy Act would once again come into play.

On September 4, Counsel for TVA wrote the Chairman of this Board to request action on the pending petitions and to point out a relevant recent decision of an Appeal Board: *Duke Power Company* (Amendment to Materials License SMM-1733 — Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station (ALAB-651, 14 NRC 307 (1981)). That Decision reversed an Initial

Decision (LBP-80-28, 12 NRC 459 [1980]) which had found that Duke Power's application to transport spent fuel from Oconee to McGuire for storage was part of a so-called Cascade Plan regarding transfers of spent fuel among Duke's nuclear stations. The Initial Decision denied authority to make the requested transfers in part because it found that request to constitute an illegal segmentation of the Cascade Plan, consideration of which was required under NEPA. The Appeal Board, in ALAB-651, found that NEPA consideration of the Cascade Plan was not required. In so doing, the Appeal Board noted that, were Duke a Federal agency committed to the Cascade Plan, NEPA would mandate a consideration of the entire plan. Because Duke, a private entity, had not requested Federal permission to implement the Cascade Plan, no proposal for Federal action existed which required consideration of the *entire* Cascade Plan, provided that the requested amendment had independent utility and approval of the amendment would not foreclose later disapproval of subsequent portions of the overall plan (ALAB-651, 14 NRC at 312-14).

We believe that *Northern States Power Company* (Prairie Island Nuclear Generating Plant, Units 1 and 2), *et al.*, ALAB-455, 7 NRC 41 (1978), is more on point with this case. *Prairie Island* pointed out that, in accord with *Kleppe v. Sierra Club*, 427 U.S. 390 (1976), "... the environmental assessment of a particular proposed Federal action coming within the statutory reach [of NEPA] may be confined to that action together with, *inter alia*, its *unavoidable* consequences." (7 NRC at 48, emphasis in original.) NRC licensing of further LLRW management techniques (such as VRS) is clearly not an unavoidable consequence of permitting five-year LLRW storage. Consequently NRC need only consider the environmental consequences of the request for five-year storage pending before it.

On appeal of *Prairie Island* to the court of appeals, it was argued that, because the operating license amendment in question (expansion of the facility's spent fuel pool) would, if granted, permit storage of spent fuel only until 1982, another amendment permitting yet more spent fuel storage would have to be sought. This, it was argued, constituted improper segmentation of the consideration of environmental impacts under NEPA.

The court rejected this argument, noting that its proponent had failed to point to any consequences of future expansion which could not adequately be considered at the time such authority was requested. *State of Minnesota v. U.S.N.R.C.*, 602 F.2d 412 at 416 n.5 (D.C. Cir. 1979). Similarly, in this case, Petitioners have failed to allege why the environmental impacts of any future LLRW management techniques for which TVA may seek approval cannot be adequately addressed at the time sought. Consequently their contentions based on improper segmentation of the LLRW management plan under NEPA must fail.

Contention one raises Petitioners' argument that "... TVA, by seeking only authority for five years' storage of [LLRW] onsite is seeking incremental decisionmaking on its onsite LLRW storage and management plans, in violation of Federal law." (Amendment and supplement to Petitions to Intervene, p. 2.) The contention goes on to state that TVA contemplates operation of VRS by 1985, a part of VRS is incineration and TVA has already begun plans to incinerate LLRW (apparently, in Petitioners' view, because the number of LLRW storage modules planned will not accommodate the amount of LLRW likely to be generated during the life of the facility). The contention concludes that, in essence, incremental decisionmaking in this case will violate NEPA.

TVA opposes this contention. Staff initially supported its admission as a legal issue. At that time, Staff proposed a NEPA review confined to TVA's request for five-year storage. Subsequently, after deciding to expand its NEPA review to life-of-the-plant storage, Staff took the position that the contention was moot.

We believe that the contention raises the legal issue discussed, *supra*, with respect to Petitioners' principal concern. For the reasons given in that discussion, the legal issue is decided adversely to Petitioners and the contention denied.

Contention two incorporates the allegations of contention one and asserts that TVA's application does not contain adequate data to permit NRC to discharge its responsibilities under NEPA with respect to TVA's LLRW management plans. TVA opposes. Staff views this contention as both outside the scope of the proceeding and as too vague to give adequate notice of what is to be litigated. Contention two is denied for the same reasons as contention one.

Contention three also incorporates the allegations of contention one and asserts that an EIS is required for TVA's LLRW management plans. TVA opposes. Staff views this contention as outside the scope of the proceeding. It is denied for the same reasons as contention one.

Contention four asserts that TVA has not submitted sufficient data to permit evaluation of its LLRW management plan under the Atomic Energy Act. In particular, the contention points to a lack of information on the specifications or health effects of the operation of VRS. TVA and Staff oppose this contention both as outside the scope of the proceeding and as too vague and nonspecific. The Board agrees. Clearly the only matter pending consideration under the Atomic Energy Act is TVA's request for five-year storage of LLRW. To the extent that the contention raises matters beyond that application, it is outside the scope of the proceeding. To the extent it might be viewed as questioning the adequacy of the application for five-year storage (and we do not so view it), it is entirely too vague to be litigated.

Contentions five through nine were filed after the deadline set by this Board for the filing of contentions. TVA and Staff both take the position that they should be denied for failure to satisfy the provisions of §2.714 with respect to untimely contentions. We do not address this argument because, as set out below, we believe the contentions are otherwise inadmissible.

Contention five incorporates the allegations of contention one and relies on quotations from TVA's environmental assessment as well as on an alleged decision of the TVA Board to authorize installation of VRS. It apparently asserts essentially the same matters as contentions one and three. Clearly, the contention seeks review of TVA's environmental assessment which concluded that an EIS is unnecessary. In response, TVA points out that its Board has authorized onsite storage facilities for LLRW and preliminary design and investigative studies which, on satisfactory completion, could lead to procurement of VRS. TVA asserts that this contention is outside the scope of this proceeding because NRC need only consider the application for five-year LLRW storage presently before it and has not jurisdiction to consider TVA's Environmental Assessment.

Staff views the contention as challenging TVA's Environmental Assessment only and agrees with TVA that this matter is not within NRC's jurisdiction.

To the extent that contention five asserts the same matters as contentions one and three, it must be denied for the same reasons. To the extent that it seeks review of matters considered in TVA's Environmental Assessment which are not the subject of licensing requests to NRC, it raises matters outside NRC's jurisdiction. Cf. *Public Service Company of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-493, 8 NRC 253 (1978).

Contention six asserts that TVA's LLRW management plan constitutes a major Federal action significantly affecting the environment for the reasons stated in contention five and because of certain enumerated aspects of VRS. TVA opposes this contention for largely the same reasons it opposed contention five. Staff views the contention as, among other things, outside the scope of the proceeding. The contention must be denied for the same reasons as contention one.

Contention seven incorporates the provisions of contention five and asserts that the application for five-year LLRW storage is defective because the LLRW management plan is subject to the provisions of 10 CFR Part 30 which have not been followed. Petitioners apparently have reference to §30.32(f) which requires the filing of an application to receive and possess byproduct material which significantly affects the environment at least nine months prior to construction of the facility where the licensed activity will be conducted.

TVA does not believe this contention raises a factual issue, and can find no basis for the legal argument invoking Part 30. Similarly Staff does not believe it raises a litigable issue.

As best the Board can determine, Petitioners attack the application in question because, in their view, TVA's LLRW management plan is a major Federal action significantly affecting the environment. If the application for five-year LLRW storage may not be considered separately from TVA's management plan (the assertion of contention five which is incorporated by reference), and if that plan is a major Federal action significantly affecting the environment for NEPA purposes, then §30.32(f) would require filing of a byproduct material license application nine months prior to construction of the facility where the licensed activity is to be carried out. Construction of the LLRW storage modules began some time ago.

Because the contention depends on the need to consider the five-year LLRW storage application in connection with the LLRW management plan in order to succeed, it is denied for the same reasons as contention one.

Contention eight asserts that TVA's November 17, 1980 amendment to its request seeking authority for LLRW storage for a period of five years as opposed to the life of the plant should not be recognized for environmental purposes because it was filed for the improper purposes of avoiding environmental consideration of the LLRW management plan and other licensing requirements related to the plan. Three factors are said to illustrate this: (1) TVA's stated reason for amending its application to seek authority to store LLRW for five years rather than for the life of the plant (a lack of NRC policy on onsite LLRW storage); (2) an alleged desire to avoid the provisions of 10 CFR Part 30; and (3) TVA's reevaluation of its Environmental Assessment.

TVA finds this contention to be an admixture of prior contentions; thus it suffers from the same defects as the others. Staff believes that to the extent the contention asserts a need to consider the environmental consequences of LLRW storage for the life of the plant, it is moot because the Staff has undertaken such an assessment. Staff also notes Petitioners' attempt to show an improper purpose for the filing of the November 17 amendment to its request and finds no litigable issue to have been raised.

In the Board's view, the contention merely seeks another means to expand the five-year LLRW storage application to include the broader LLRW management plan. We have held that NRC consideration of the overall plan is unnecessary. In the absence of some improper or unlawful purpose, motivation is irrelevant. The contention is denied.

Contention nine is the only contention which directly addresses the application for five-year LLRW storage. It asserts that the environmental

impacts of this proposal are inadequately addressed by TVA because the costs of decommissioning or long-term disposition of LLRW at the end of five years have not been considered.

TVA objects on the grounds that its Environmental Assessment is not reviewable in this proceeding, that the contention is too vague, and that the costs of ultimate waste disposal are not litigable in an operating license proceeding. Staff agrees that the adequacy of TVA's Environmental Assessment is outside the scope of this proceeding and also points out that the contention impermissibly challenges 10 CFR §§30.32 and 50.90 which do not require submission of decommissioning or long-term disposition cost data.

The Board agrees with TVA that to the extent this contention seeks to litigate the adequacy of the consideration of matters in TVA's Environmental Assessment which are not the subject of requests for license authority pending before NRC, it is outside the Board's jurisdiction. To the extent the contention seeks to challenge the sufficiency of the environmental information furnished NRC it also fails. As a general proposition, the Board does not view economic costs as constituting an environmental impact. Thus the Board has difficulty in faulting the application for failing to adequately address environmental impact because certain economic costs are omitted. Perhaps Petitioners had environmental costs in mind. In any event, the contention fails to indicate what sorts of costs Petitioners believe need to be considered and totally fails to indicate why such consideration is necessary. Consequently it is too vague to be admitted.

ORDER

For the foregoing reasons, it is this 2nd day of October, 1981,
ORDERED

That the petitions to intervene and requests for hearing filed herein are hereby denied.

Pursuant to 10 CFR §2.714a, Petitioners may appeal this ORDER to the Atomic Safety and Licensing Appeal Board within ten (10) days of the service of this Order by filing a notice of appeal and accompanying brief. Any other party may file a brief in support of or opposition to the appeal within ten (10) days after service of the appeal.

Judges Johnson and Stober concur in this Memorandum and Order but were unavailable to sign it.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**John H Frye, III, Chairman
ADMINISTRATIVE JUDGE**

Dated at Bethesda, Maryland,
the 2nd day of October, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Michael A. Duggan
Robert M. Lazo
Ivan W. Smith, Alternate

In the Matter of

Docket No. 50-389-A

**FLORIDA POWER &
LIGHT COMPANY**
(St. Lucie Plant, Unit No. 2)

October 2, 1981

The Board's Order denying intervention to Parsons & Whittemore, Inc., is affirmed after considering objections and making minor changes in the initial Order.

MEMORANDUM AND ORDER
Concerning
Parsons And Whittemore, Inc.'s Objections
To The Memorandum And Order Of August 5, 1981

On consideration of the Objections filed by Parsons & Whittemore, Inc., and Resources Recovery (Dade County), Inc. ("RRD") on September 25, 1981, the Board affirms its August 5, 1981 Memorandum and Order (14 NRC 333), except as indicated below.

The Board is persuaded that were RRD to become a party there would be no procedural bar to its challenging the settlement agreement approved in this case. Hence, the paragraph in our memorandum decision stating a contrary conclusion on this point (*id.* at 339) should be considered deleted.

We also have decided to clarify two portions of our memorandum. First, it is our understanding that if RRD obtains title to the disputed small power production facilities as a result of the pending arbitration, then Florida Power & Light Co. (FPL) would have no choice but to honor RRD's PURPA rights. Were this to occur, RRD's entire problem could be cleared up, as we stated in our opinion. *Id.* at 338-339.

Second, in our August 5 opinion we deal with whether or not RRD has shown good cause for late filing. *Id.* at 344-345. For the purpose of that discussion, we assume that the settlement agreement did not create a cause of action but that RRD must rely on an underlying cause of action, if any. Consequently, it is important to determine the first date at which RRD should have known of the availability of that cause of action and whether there is good cause for waiting until the present time to raise an antitrust claim. We concluded that the pivotal date was when RRD first learned it had contractual problems which would require it to sell power to and demand power from FPL; and we found that RRD should have known of its potential cause of action against FPL at the time it reached a contractual impasse with Dade County.

It was RRD's burden to show good cause for late filing. Hence, it had to show us the date on which it first learned of a need which could lead to the current cause of action. RRD did not even allege what that date was, despite hints dropped to it by the Board in its July 7 Order, 14 NRC 87 (1981). It also was unable at the conference to contradict FPL's statement that in February 1980 RRD informed Dade that it would not operate the electrical generating facility. Indeed, Counsel for RRD admitted that "we were saying, that the shortfall was so great that we simply wouldn't be able to operate and we would walk away from it." 14 NRC 344-345.

RRD knew that the details of its contract dispute with FPL were in sharp issue in this proceeding. We cannot accept its view that it did not have an adequate opportunity to set forth its own version of the timing of that dispute.

We are convinced that the remainder of our Memorandum and Order does not require any further clarification.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 2nd day of October 1981

ORDERED

- (1) The Objections of Parsons & Whittemore, Inc. and Resources Recovery (Dade County), Inc., filed on September 28, 1981, are denied except to the extent indicated below.

- (2) The first full paragraph of our Memorandum and Decision of August 5, 1981, (14 NRC 333, 339) shall be considered deleted and the remainder of that Memorandum and Order shall be interpreted in light of this Memorandum and Order.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD,
WITH THE CONCURRENCE OF
JUDGE MICHAEL A. DUGGAN
AND
JUDGE ROBERT M. LAZO

Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE

October 2, 1981
Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Dr. Jerry R. Kline
Mr. Frederick J. Shon

In the Matter of

Docket Nos. 50-440-OL
50-441-OL

CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.
(Perry Nuclear Power Plant,
Units 1 & 2)

October 2, 1981

An electromagnetic pulse (EMP) contention was excluded from the proceeding because 10 CFR §50.13 prohibits consideration of design features related to attacks on the facility by an enemy of the United States (U.S.). Any explosion causing an EMP that affects the plant would be considered to be an attack on the facility by an enemy of the U.S.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTION

A brief suspension of an admitted contention concerning anticipated transients without scram (ATWS) can no longer be continued when it no longer appears likely that the Commission is about to issue a proposed rule on the subject.

RULES OF PRACTICE: ADMISSIBILITY OF CONTENTIONS

Contentions regarding the effect of an EMP are barred from consideration by 10 CFR §50.13 because such a pulse necessarily constitutes an attack on the facility by an enemy of the U.S.

MEMORANDUM AND ORDER
Concerning

**Ohio Citizens For Responsible Energy's Motion
For Leave To File A Contention About Electromagnetic
Pulses And Possible Readmission To Discovery
Of The ATWS Contention**

I. ELECTROMAGNETIC PULSES CONTENTION

On July 8, 1981 the Ohio Citizens for Responsible Energy (OCRE) filed a motion seeking permission to file Contention 14, relating to the disruptive effect of electromagnetic pulses (EMP) on plant operation. Answers were filed by applicant and staff. Then, at the direction of the Board, OCRE filed a reply on August 19, 1981.

OCRE's contention arose from an article in *Science News*, May 19, 1981 at p. 300. That article states that high altitude nuclear explosions would generate electromagnetic pulses that would induce current or voltage through electrically conducting materials, thereby either destroying or temporarily disrupting control systems in Perry that are essential for safety.

Applicant argues that the admission of this contention is barred by 10 CFR §50.13 (upheld in *Siegel v. Atomic Energy Commission*, 400 F.2d 778, 780-782 (D.C. Cir. 1968)), which states:

An applicant for a license to construct and operate a production or utilization facility, or for an amendment to such license, is not required to provide for design features or other measures for the specific purpose of protection against the effects of (a) attacks and destructive acts, including sabotage, directed against the facility by an enemy of the United States, whether a foreign government or other person, or (b) use or deployment of weapons incident to U.S. defense activities.

Staff joins Applicant in this ground for opposition but also argues that this is a late-filed contention that does not meet the criteria for admission established by 10 CFR §2.714.

If we accepted staff's arguments concerning late filing, we would not reach the merits of admitting this contention. However, we disagree with staff. Intervenor learned of this issue from a responsible current publication. To the extent that the current publication induced substantial fresh doubts in intervenors' minds about the safety of Perry, we do not think that technicalities should be used to exclude the issue in this still young proceeding. In addition, we have been impressed by OCRE's technical sophistication in arguing its corbicula contention and with its responsible

approach to this particular contention, which it has presented logically and for which it has presented well conceived technical and legal arguments.

Having decided that the contention may not be dismissed for late filing, we must turn to the proper interpretation of 10 CFR §50.13. OCRE contends that the section does not bar its contention because: (1) an EMP could be caused by an accidental nuclear explosion rather than by an enemy attack on the plant, and (2) an explosion at 200 miles above ground level caused by an attack on Canada, Mexico or even El Salvador, would not be "directed against the facility by an enemy of the United States" but would cause Perry serious disruption. For this second proposition, OCRE cites specific portions of the *Science News* article as a basis.

The merit of OCRE's position depends on the interpretation of the crucial phrase, "directed against the facility." OCRE apparently would have us apply a subjective test in order to interpret this phrase. It implies that we should inquire into the mind of the attacker and decide whether the act was intentional or merely incidental to some other purpose.

We disagree with OCRE's application of a subjective test. We apply an objective test which asks whether the consequences were a reasonably foreseeable result of the act of detonating a nuclear device.

Nuclear weapons are dangerous instrumentalities. Just as with guns, less dangerous instrumentalities, users of nuclear weapons are subject to a more stringent standard than a subjective test. If a person fires a gun into a crowd and kills someone, he is responsible for the result and is guilty of murder or of voluntary manslaughter. Similarly, if a nation fires a nuclear device which causes electromagnetic pulses over the United States, that nation is responsible for the result. By that hostile act, the nation becomes an enemy of the United States and is responsible for direct or indirect consequences resulting from its use of a nuclear weapon. If that weapon damages the control system at Perry, then the nation firing it is responsible for that consequence and we would consider the attack to have been "directed against the facility", as well as against all other targets it destroys through blast, pulses or other foreseeable physical consequences of its act.

This interpretation is consistent with the Statement of Consideration issued by the Commission when it promulgated §51.13. 32 F.R. 13445 (September 26, 1967). The Statement of Consideration explained that:

The protection of the United States against hostile enemy acts is a responsibility of the nation's defense establishment and of the various agencies having internal security functions. The power reactors which the Commission licenses are, of course, equipped with numerous features intended to assure the safety of plant employees and the public. The massive containment and other

procedures and systems for rapid shutdown of the facility included in these features could serve a useful purpose in protection against the effects of enemy attacks and destructive acts, although that is not their specific purpose. One factor underlying the Commission's practice in this connection has been a recognition that reactor design features to protect against the full range of the modern arsenal of weapons are simply not practicable and that the defense and internal security capabilities of this country constitute, of necessity, the basic "safeguards" as respects possible hostile acts by an enemy of the United States.

. . .

Furthermore, assessment of whether at some time during the life of a facility, another nation actually would use force against that particular facility, the nature of such force and whether that enemy nation would be capable of employing the postulated force against our defense and internal security capabilities are matters which are speculative in the extreme. Moreover, examination into the above matters, apart from their extremely speculative nature, would involve information singularly sensitive from the standpoint of both our national defense and our diplomatic relations.

See also Siegel at 780.

We also reject OCRE's argument that an EMP could be generated by an accident. First, we note that OCRE's example, involving a missile silo accident, flows from the deployment of weapons by the United States. Hence, that risk is explicitly barred from consideration by §50.13. In addition, OCRE has failed to provide a basis for believing that there is any plausible mechanism by which there could be an accidental explosion of a non-defense related nuclear device at sufficient altitude to create a problem of the sort described in the *Science News* article.

For all these reasons, we have decided that the EMP contention is not admissible as an issue in this proceeding.

II. ATWS Contention

In our Order of September 9, 1981, we suspended from discovery the ATWS issue which we had admitted to the proceeding in our July 28 Order. The reason for suspending discovery on this issue was Applicant's argument that the Commission was about to promulgate a proposed rule on this subject and that the rule would preclude any ATWS issue from our proceeding.

Applicant was correct in arguing that the Commission had acted to publish a proposed rule for comment. On June 22, 1981, Samuel J. Chilk, Secretary to the Commission, issued a memorandum to William J. Dircks, Executive Director for Operations. In that memorandum, the Office of General Counsel and the Executive Director for Operations were authorized to publish for comment two ATWS rules.

However, it is now October. Two new Commission members have been appointed, including a new Chairman. No action has ensued concerning publication of the Rule. Hence, we conclude that imminent publication is no longer a reason for suspending the ATWS issue from the proceeding.

Our discussion of the ATWS issue occurs in our July 28, 1981, Special Prehearing Conference Order 14 NRC 175, 219-221. In its brief of August 11, 1981, Applicant objects that the Sunflower Alliance Inc., *et al.*, cannot contribute meaningfully to the resolution of this issue. However, we are unwilling to bar a contention at this stage of the proceeding by making such a determination. We simply have not had enough experience to render such a serious judgment about competence before Sunflower has had a chance to use discovery and demonstrate its ability. Furthermore, we note that OCRE also expressed an interest in this contention in its August 8 brief; and OCRE has already demonstrated its competence to our satisfaction.

We note that the readmission to discovery of the ATWS issue is a tribute to the correctness of staff's assertion, in its August 12 brief, that there was no pending rulemaking on ATWS.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 2nd day of October 1981

ORDERED

- (1) The Motion of the Ohio Citizens for Responsible Government for leave to file its Contention #14 is granted; but the contention shall not be admitted as an issue for reasons stated in the accompanying memorandum.

- (2) Issue #6 in Ordering paragraph (7) of our July 28, 1981 Order is readmitted to discovery.
- (3) This is an interlocutory order from which there is no appeal.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**October 2, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Jerry R. Kline
Hugh C. Paxton

In the Matter of

**Docket Nos. 50-266-OLA
50-301-OLA**

**WISCONSIN ELECTRIC POWER
COMPANY**

**(Point Beach Nuclear Plant,
Units 1 and 2)**

October 7, 1981

The Board issued a written order establishing the agenda for an on-the-record telephone conference call convened by the Board in order to expedite the proceeding.

MEMORANDUM AND ORDER

Setting Agenda for October 9 Conference Call

Subject to change by motion of a party at the beginning of the 10 am, October 9, 1981, on-the-record telephone conference call, the agenda shall be:

- I WE's schedule for responding to Decade's September 24, 1981 filing, containing further particularization of contentions. (Including a discussion of the procedural implications of WE's not yet having responded.)
- II WE's schedule for responding to the Board's request for information and its representations concerning the last feasible date for acting on its request for interim relief.
- III Staff's schedule for responding to the particularization of contentions and for completing its analysis of the Westinghouse report.
- IV Scheduling a conference to discuss Decade's contentions concerning the appropriateness of according confidential treatment of all or part of the Westinghouse report. Devising a method for Decade

to obtain access to the report for the purpose of arguing its contentions knowledgeably and preparing its case in chief.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**October 7, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Jerry R. Kline
Hugh C. Paxton

In the Matter of

**Docket Nos. 50-266-OLA
50-301-OLA**

**WISCONSIN ELECTRIC POWER
COMPANY**

**(Point Beach Nuclear Plant,
Units 1 and 2)**

October 13, 1981

The Board requested further information from the Applicant in order to clarify the record.

RULES OF PRACTICE: SHOW CAUSE

Intervenor may be required to show cause why a licensing amendment should not be issued to permit Applicant to conduct a demonstration program.

RULES OF PRACTICE: BOARD QUESTIONS

Under exceptional circumstances, Board questions may precede discovery by the parties.

**MEMORANDUM AND ORDER
Concerning Further Board Questions**

On October 9, 1981, Wisconsin Electric Power Company (WE) responded to questions asked of it by the Board in its October 1, 1981 Order. Although these answers resolved some of the Board's questions, they left some incompletely resolved. The purpose of these questions is to help to

resolve remaining questions. Wisconsin's Environmental Decade (Decade) shall have at least seven days from receipt of the answers to these questions to show cause (pursuant to our October 1 Order) why WE should not be granted permission to conduct its proposed tube-sleeving demonstration program.

We urge WE to answer these questions clearly and fully. The Board's objective is to ascertain what is known, in a scientifically rigorous manner, and what is not known. We are aware that any engineering program will have areas of uncertainty. However, in order to evaluate the acceptability of that uncertainty, we must know where it exists. Fully forthcoming answers will assist the Board in understanding what is and is not known.

The procedure we are following continues to be unusual. However, in this case we face unusual time pressures and the likelihood that Staff documents will not be available in time for Board and intervenor review. Under the circumstances, we consider our probing review of the Application to be necessary.

The following are the Board's additional questions:

- (1) Was plug removal performed at San Onofre or R.E. Ginna?
- (2) Please show in one table (or set of tables) all tests performed on tubes from which plugs were removed and the results of those tests. Minimum values and ranges should be indicated. Tables should be clearly labeled so that they disclose differences between the testing conditions and the Point Beach project.
- (3) What empirical tests will be performed prior to sleeving unplugged tubes in order to assure the integrity of the tube-to-tube-sheet weld and its resistance to stress? What uncertainty will exist after these empirical tests are performed? What laboratory tests or engineering studies narrow these areas of uncertainty? What uncertainty will continue to exist?
- (4) What radiation exposure is expected for the workers who will manually insert sleeves?
- (5) Please file the relevant sections of the San Onofre Repair Report which you rely on in answer to Board questions. Be sure to include all related sections.
- (6) What is the criterion for "unacceptable expansion" which would cause sleeves to be plugged?
- (7) What quality control measures, if any, will be used to assure accurate measurement and data collection during the demonstration program?
- (8) Please explain your answer to our previous Question 7 more fully. More particularly, why is there a difference in torque indicated? Does this entry merely mean that Point Beach can withstand more torque or does it mean something else?

- (9) Please indicate in a single table or set of tables the extent to which you rely on San Onofre tests rather than on laboratory tests of the Point Beach configuration and the extent to which there are no data whatever available concerning the Point Beach configuration. Provide explanations where applicable.
- (10) Please explain the improvements in the Model 44 steam generators which make the Table 6.1-16 results no longer applicable. Please provide actual observation data for Table 6.1-15, which has only "averages" rather than actual observations from which a variance or range could be computed.
- (11) What is a safe minimum value for axial translation? Why is it a safe value? Does your reliance on Task M5 mean that you have not yet done a test comparable to Task M4? Is that acceptable?

FOR THE ATOMIC SAFETY AND
LICENSING BOARD
(WITH THE CONCURRENCE OF
KLINE, J.; PAXTON, J., NOT
PARTICIPATING)

Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE

October 13, 1981
Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Jerry R. Kline
Hugh C. Paxton

In the Matter of

Docket Nos. 50-266-OLA
50-301-OLA

WISCONSIN ELECTRIC
POWER COMPANY
(Point Beach Nuclear Plant,
Units 1 and 2)

October 13, 1981

The Board admitted a single, broad contention based on four admitted contentions. It decided, based on a review of Applicant's filing, that the contentions should be admitted because they provided reasons for doubting the safety of the proposed steam generator tube sleeving program. It then admitted the single broad contention because it concluded that a decision was required within a short time which was insufficient to accommodate the usual procedure for deciding whether late-filed contentions should be admitted.

RULES OF PRACTICE: CONTENTION, ADMISSIBILITY OF

Whether or not basis for contentions has been established must be decided by considering the contentions in the context of the entire record of the case up to the time that the contentions are filed.

RULES OF PRACTICE: CONTENTION, ADMISSIBILITY OF

When an application for a license amendment is itself incomplete, the standard for the admission of contentions is lowered because it is easier for petitioners to have reasons for believing that the application has not demonstrated the safety of the proposed procedures for which an amendment is sought.

RULES OF PRACTICE: CONTENTION, ADMISSIBILITY OF

When quick action is required on a license amendment, it is appropriate to interpret petitioner's safety concerns broadly and to admit a single broad contention which will permit wide-ranging discovery within the limited time without the necessity to decide repeated motions for late filing of new contentions.

A contention may not be admitted unless it is related to the license amendment which is requested. Petitioner may not challenge the safety of activities already permitted under the license.

If a contention states more than is required for its admission into the proceeding, its admission should be considered in light of the minimum necessary allegation for admission into the proceeding.

RULES OF PRACTICE: DISCOVERY

Parties are required to set forth the purpose for each discovery request, to discuss differences concerning contentions informally before filing formal objections and to file discovery progress reports.

MEMORANDUM AND ORDER CONCERNING THE ADMISSION OF A PARTY AND ITS CONTENTIONS

On September 24, 1981, Wisconsin's Environmental Decade (Decade) submitted a letter providing additional bases for its contentions but objecting to having to particularize its contentions at such an early stage of the proceeding. This letter was submitted in response to the Board's invitation. (Tr. 62-66.) Applicant responded on October 5, 1981 and Staff on October 9. Hence, the matter is ripe for decision.

We have concluded that Decade should be admitted as a party. This conclusion accords with Staff's recommendation.

We also have concluded that Decade's contentions should be simplified by being combined into the following single issue: "Wisconsin Electric Power Company has not demonstrated that Point Beach Nuclear Plant, Units 1 and 2, will operate as safely with its degraded steam generator tubes sleeved as it would if they were required to be plugged."

After discovery is completed, Decade will have the burden of coming forward to demonstrate that there are one or more genuine issues of fact related to this contention. Wisconsin Electric Power Company (WE) will then have the burden of persuasion concerning the existence of a genuine

issue of fact; and it will of course have the burden of persuasion on any issue admitted for hearing.

I. THE BACKGROUND

On July 2, 1981, Wisconsin Electric Power Company asked the Office of Nuclear Reactor Regulation to amend the licenses for Units 1 and 2 (Point Beach). WE's license requires it to plug tubes in its steam generator when the walls of the tubes have been degraded to less than 40 percent of their original thickness. The amendment seeks permission to insert new tubes or "sleeves" inside of the defective tubes and to operate the reactor with sleeved rather than plugged tubes. The sleeving would occur in two parts: a demonstration involving up to 12 tubes to be sleeved in the fall of 1981 and a program involving about 1,000 tubes to be sleeved in March 1982.

WE's filing of July 2 cannot be characterized as an attempt to demonstrate the safety of the sleeving program. It was WE's expectation at the time that it would not need to participate in a hearing but that its amendment could be approved informally, and this filing reflects those expectations. By contrast, on September 28, WE submitted a formal request for authorization for interim operation, containing an affidavit of the Manager of its Nuclear Engineering Section. This was quickly followed by a Westinghouse proprietary report, providing extensive documentation about the structure of the tubes and welds involved in this project and discussing laboratory tests and engineering data marshalled in support of the safety of the process.

We note that Decade's letter preceded the filing of the affidavit and the Westinghouse report; and we conclude that it would be unfair to require Decade to respond to information in those latter filings, which it had not even seen. (This point would seem obvious, but response to the Decade filing cited both the subsequently submitted affidavit and report.)

II. THE PROCEDURAL SETTING

The admissibility of contentions in proceedings involving the amendment of operating licenses is governed by 10 CFR §2.714, which requires petitioner to

file a supplement to his petition to intervene which must include a list of the contentions which petitioner seeks to have litigated in the matter, and the bases for each contention set forth with reasonable specificity.

It is solely petitioner's compliance with this section that is in issue, as Decade has demonstrated that it has met the other standing requirements, as Applicant and Staff concede. Tr. 41,55.

Despite the long history of Commission proceedings, the proper meaning of "reasonable specificity" in §2.714 is somewhat ambiguous. However, standards governing the interpretation of that phrase were discussed in *Cleveland Electric Illuminating Company, et al. (Perry Nuclear Power Plant, Units 1 & 2)*, LBP 81-24 (1981), 14 NRC 175, 181-184, 189-192, 197. We find those standards helpful. See also *Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3)*, ALAB-216, 8 AEC 13, 20-21 (1974).

The first principal utilized in *Perry* is that "reasonable specificity" should be interpreted in light of the "full procedural context." *Id.* at 182. In that case, the extensive Final Safety Analysis Report and Environmental Analysis worked in Applicant's favor. *Ibid.* In addition, the Board in that proceeding had required Applicant to file a brief setting forth specific objections to contentions; and it was considered to be appropriate to require intervenors to respond to those specific objections. *Id.* at 183-184.

By contrast, the filings of WE at the time Decade was invited to particularize its contentions were quite rudimentary. Instead of 22 thick volumes, we had six pages, consisting largely of conclusory statements without documentation. Some of the undocumented conclusions were that "the sleeves will be designed and analyzed to the latest edition of Section III of the ASME Boiler and Pressure Vessel Code as well as applicable Regulatory Guides", "the corrosion resistance of the sleeve material exceeds that of the original tube material", and "confirmatory testing [unspecified] will be performed".

In addition, the six pages were vague at key junctures. For example, the letter stated that sleeves would be inserted into "several" tubes, the joints between sleeves and tubes would be formed by a "brazing, mechanical or combination process" and the program would be "of the same or similar design" to that at San Onofre. Furthermore, although the proposed change in technical specifications would have permitted any number of tubes to be sleeved, the letter failed to disclose that within one year WE was planning to sleeve about 1000 tubes.

Under these circumstances, Decade was invited to file additional bases for its contentions. As WE correctly points out in its brief, Decade does not have the opportunity to wait until all applicable technical documents are filed. It must file its contentions at an early stage of the proceedings. However, the consequence of this procedural practice is that Decade may take the case as it finds it. It need not anticipate subsequently filed documents or plausible responses that WE has not already included in the record.

III. DISCUSSION OF CONTENTIONS

A. Admissibility of Contentions 3, 4, 5 and 7

In reviewing Decade's contentions, we find that it often says more than is necessary for it to gain consideration of its contentions as issues in the proceeding. We think it appropriate to consider whether Decade has met minimum standards for the admission of issues rather than to play a technical game and exclude issues which have been overstated. For example, contention 3 states that "the braze or weld between the upper rim of the sleeve and the inner surface of the original tube will weaken the integrity of the tube". All Decade had to state is that WE has not specified the nature of the braze or weld nor demonstrated that it would be safe.

When Contention 3 is looked at in this light, Decade's reliance on a statement of a witness called by WE in a prior proceeding is appropriate. That statement documents that laboratory tests show a 10 percent reduction in the ultimate strength in the area of the weld. Although Mr. Porter then stated, without proof, that the reduction is still "within the design factors of safety", it is still appropriate for Decade to come forth and demand WE's proof for this self-serving statement. Finally, the decision of the Public Service Commission of Wisconsin to permit sleeving is simply irrelevant to us in performing our responsibilities. (Subsequently, extensive proof on this and other admitted issues has been offered by WE, but that proof is not relevant to the admission of contentions, for reasons we discussed above.)

Similarly, Contention 4 questions whether stagnant water might collect between the tube and sleeve, causing unexpected corrosion. Given the history of unexpected corrosion at Point Beach and WE's failure even to discuss this possibility, this simple assertion might provide reason enough to admit the contention. However, Decade did more. It pointed out that Commission Staff had required San Onofre's owners to explain why this special corrosion would not occur. September 22, 1980 memorandum concerning San Onofre Unit No. 1. See Attachment 1 to Staff's Response. This establishes the seriousness of the concern. And it is an incomplete answer that the owners of San Onofre satisfied the Staff because the relevant record in this case does not establish the extent of similarity between the vaguely described WE project and the San Onofre project. (This deficiency was addressed by the subsequently filed Westinghouse report.)

We also find sense in Contention 5, concerning whether the sleeved tubes might make eddy current testing more difficult, thereby inhibiting discovery of incipient structural weaknesses. Decade tells us that Staff showed concern about eddy current testing in San Onofre. Contrary to

Staff's assertion in its Response, the Staff did question "inspectability" in the San Onofre repair application and we interpret this to include the question of eddy current testing. WE has not answered those concerns in the relevant record in this proceeding. It was sensible for Decade to raise the question.

Contention 7, which speculates that radioactive conditions may lead to shoddy sleeve installation procedures, also is admissible. There are obvious problems in conducting repairs on a steam generator of an operating nuclear reactor. Radiological exposure of workers is one problem. Since the problem was not even addressed by WE in its filing, Decade's concern is eminently understandable.

Consequently, contentions 3, 4, 5 and 7 are admitted as contentions to be tried within the scope of the simplified issue which we stated near the outset of this order.

B. Other Contentions

In Contention 6, Decade states that sleeving would "reduce the flow of primary core cooling water and the cooling capacity of the core under various accident scenarios to an extent not bounded in previous safety analyses." We find this Contention inadmissible in this proceeding. First, we note that WE is already permitted to plug degraded sleeves. The safety of plugging is not open to question in this amendment proceeding because it is already permitted. Since WE is merely asking to sleeve tubes which it could already plug, the amendment does not permit it to restrict cooling capacity. In addition, as WE points out, it is not permitted to reduce coolant flow below the minimum level provided in its Technical Specifications. Consequently, the sleeving program does not waive or otherwise reduce cooling flow requirements and this contention is not admissible as an issue because it fails to be relevant to the pending amendment.

Contentions 8 & 9 are not truly contentions, as Decade has conceded. Tr. 67. Furthermore, contentions 1 & 2 are allegations of the seriousness of the consequences which might occur if sleeving leads to steam generator failure. Decade will be permitted to demonstrate the consequences of failure which might occur as the result of its admitted contentions; consequently, it is not necessary to admit these contentions as separate issues.

C. Contention 10

At the September 16 telephone conference, Decade explained that Contention 10, dealing with the cost of the sleeving program, was relevant because of its impact on environmental issues. Tr. 40. Decade acquiesced at that time in the Board's statement that strictly ratemaking issues are excluded from Commission proceedings. Tr. 39-40.

However, Contention 10 should be interpreted, because of Decade's explanation, as raising generally the issue of whether the sleeving program requires the preparation of an environmental assessment or statement and whether the sleeving program is acceptable under the National Environmental Policy Act. This issue was more specifically stated in ¶4 of the section of Decade's filing called "The Petitioner's Position", but the failure to call it a contention should not exclude it from the proceeding.

In fact, Decade has not provided sufficient basis for the admissibility of this contention at this time because it has not made any allegations about the ultimate environmental balance. Apparently Decade intends to call that balance into question, but it feels it first to be necessary to assure that an environmental impact statement be written.

It is WE's position that neither an environmental impact statement nor an environmental assessment need to be prepared for this amendment. For this proposition it cites 10 CFR §51.5(b)(2). Tr. 42-43. However, we construe that section differently. §51.5(b) governs only whether an environmental impact statement need be prepared. On the other hand, §51.5(c)(1) dictates that the environmental impact of a licensing amendment "will be evaluated"; and part (2) of that subsection requires publication of "a negative declaration and an environmental impact appraisal, prepared pursuant to §51.7."

It therefore appears that an environmental impact appraisal should be prepared in this case. The Staff has agreed to inform us when it may be able to complete this work.

IV. SCOPE OF DISCOVERY

Having decided that we should admit four contentions, we consolidated them into a single issue.

On October 9, intervenor received technical documents relating to the sleeving program. Prior to that date, it had resisted signing a "protective agreement" which would provide confidential treatment to the documents. Consequently, it denied itself access to the documents. Only as a result of the telephone conference of October 9 did Decade agree to sign the protective agreement and begin studying the documents.

Were we to proceed in the ordinary fashion, Decade would examine these documents in order to determine whether to file additional contentions. Each contention would need special prehearing attention and would be admitted or not, on a case by case basis.

For a construction permit proceeding or an operating license proceeding, this procedure makes sense. Dozens of contentions might be raised by intervenors, and a winnowing process could reduce the burden of the parties from unfocused discovery.

In this proceeding, the issues are more narrowly defined. The sleeving process is not as broad an ocean as is the entire reactor. There is less room for rational fishing. There is less danger of burdensomeness and delay from an open discovery process than there would be from a staged process requiring decisions before new issues are admitted to discovery.

It is for this reason that we have decided to simplify Decade's contention into the single issue quoted at the outset of this memorandum. This will provide Decade latitude for discovery in rational areas concerning safety effects. And it is understood that it may also pursue questions rationally related to the environmental balance concerning this amendment (but not the operation of the entire reactor).

V. DISCOVERY RULES

Parties must explain the purpose of each discovery request or set of requests so that requests may be reasonably interpreted.

Formal objections to a request will be dismissed by the Board unless they are accompanied by a statement concerning the party's reasonable attempts to resolve differences in direct discussions with the requester.

Discovery progress reports will be filed on the last working day preceding the 22nd of each month and on the last working day preceding the 7th of each month. These reports will indicate accomplishments in the discovery process since the last report, progress expected before the next report, and suggestions for reducing delay. Reports are not expected to be longer than two pages, unless necessary to convey the party's message.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is this 13th day of October 1981

ORDERED

- (1) The Petition to Intervene filed by Wisconsin's Environmental Decade is granted.
- (2) The following contention is admitted as an issue in this proceeding: "Wisconsin Electric Power Company has not demonstrated that Point Beach Nuclear Plant, Units 1 and 2, will operate as safely with its degraded steam generator tubes sleeved as it would if they were required to be plugged."
- (3) Liberal discovery rules, accompanied by requirements that requests be accompanied by statements of purpose and that objections document attempts at informal settlement, shall be instituted as outlined in the accompanying memorandum.
- (4) Parties shall file discovery progress reports as discussed in this memorandum.

- (5) Pursuant to §2.751a(d), objections to this Order may be filed by a party within five days after service of the order, except that the regulatory staff may file objections to the order within ten days after service.
- (6) Wisconsin Electric Power Company and the regulatory staff may appeal the portion of this order granting the petition to intervene pursuant to §2.714a(c); otherwise, it is an interlocutory order from which there is no appeal.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD
(WITH THE CONCURRENCE OF
KLINE, J. AND PAXTON, J.)**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**October 13, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Jerry R. Kline
Hugh C. Paxton

In the Matter of

Docket Nos. 50-266-OLA
50-301-OLA

**WISCONSIN ELECTRIC
POWER COMPANY**
(Point Beach Nuclear Plant,
Units 1 and 2)

October 15, 1981

In a license amendment proceeding in which expedition was required in order to make a timely decision, the Board issued an Order calling a single hearing related to an order to show cause, a motion for summary judgment and the hearing of evidence.

RULES OF PRACTICE: DISCOVERY

When time pressure causes special difficulties for intervenors, discovery against intervenors may be restricted in order to prevent interference with their preparation for a hearing.

RULES OF PRACTICE: DISCRETION OF PRESIDING OFFICER

A Board may authorize specially tailored proceedings in the interest of expedition.

MEMORANDUM AND ORDER
Setting Agenda And Rules
For October 29-30 Hearing

Subject to change by motion of a party, the agenda for the 9:30 am, October 29-30, 1981, combined hearing will be:

- I A show cause hearing concerning Wisconsin Electric Power Company's (WE) motion to obtain interim relief so that it can operate its power reactor with up to six deteriorated steam generator tubes sleeved rather than plugged.
- II Additional argument, if any, concerning WE's motion for summary judgment. (However, the Board is inclined to rule that at this stage of a proceeding, when discovery has not yet been completed, that the standards for summary judgment are the standards already articulated with respect to the show cause order.)
- III If necessary, to conduct a limited evidentiary hearing for the purpose of helping to resolve the show cause or summary judgment motions.
- IV If necessary and helpful, to conduct an evidentiary hearing on unresolved issues of material fact.

The parties are required to exchange a witness list and documents that will be relied on at the hearing at least 48 hours prior to the hearing, unless they have good cause for being unable to do so with respect to particular witnesses or documents. The witness list should include a curriculum vita (including principal publications) for each witness and a reasonably complete statement of the particular safety or environmental aspects of the sleeving project that will be of concern to each witness. In addition, parties may file briefs (including WE's response to intervenor's brief attempting to show good cause for blocking the demonstration program) up to 24 hours prior to the hearing.

Due to the tight time schedule within which Wisconsin's Environmental Decade must work, WE may conduct discovery only to the extent that Decade agrees that the scope of the requested discovery will not unduly interfere with it in the preparation of its case.

Parties are advised to be prepared for night sessions and possibly, a Saturday session if required for the completion of business. In addition, parties are advised that the hearing may be reconvened on November 6 and 7 if necessary.

IT IS SO ORDERED.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE**

**October 15, 1981
Bethesda, Maryland**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

**Herbert Grossman, Chairman
Dr. Frank F. Hooper
Gustave A. Linenberger**

In the Matter of

Docket No. 50-395-OL

**SOUTH CAROLINA ELECTRIC
and GAS COMPANY, *et al.*
(Virgil C. Summer Nuclear Station,
Unit 1)**

October 15, 1981

The Licensing Board reaffirms its intention of calling seismology experts as Board witnesses and orders the NRC Staff to respond to the experts' reports.

ADJUDICATORY HEARINGS: STATUS OF NRC STAFF

The Licensing Board's determination to call its own expert witnesses is not sufficient cause for the NRC Staff to impugn the motivation of the Board Chairman where the record of the case does not demonstrate improper motives.

**LICENSING BOARDS: DISCRETION IN MANAGING
PROCEEDINGS**

Rule 706 of the Federal Rules of Evidence, which permits Federal courts to appoint expert witnesses of their own selection, merely codified existing law under which the inherent power of a trial judge to appoint an expert of his own choosing is virtually unquestioned.

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS

Scott V. Spanjer Bros. Inc., 298 F.2d 928 (2d Cir. 1962) and *Danville Assn. v. Bryant-Buckner Assocs., Inc.*, 333 F.2d 202 (4th Cir. 1964) are the principal Federal appellate decisions recognizing the inherent power of a trial court to appoint its own expert, a practice which dates back to cases recorded in the 14th century.

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS

Appellate tribunals have not reversed, or even granted interlocutory review of, decisions by Federal administrative judges to call their own experts.

RULES OF PRACTICE: EXPERT WITNESSES

NRC Licensing Boards have adopted the practice of calling their own expert witnesses when the circumstances warrant it.

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS

The Appeal Board has indicated that the decision to call a witness for the Board rests ultimately and solely upon the sound discretion of the tribunal which called the witness. *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-382, 5 NRC 603, 608 (1977).

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS

In order to call its own expert witness, a Licensing Board need not satisfy a standard requiring that there be an extraordinary situation in which it is demonstrated without question that the Board cannot otherwise reach an informed decision.

ATOMIC ENERGY ACT: LICENSING STANDARDS

If the safety of the plant is not established in the record, the Board must deny the operating license. It would be improper and contrary to the public interest for a Board to presume that a license must issue and be required to affirmatively seek evidence to support the issuance.

LICENSING BOARDS: AUTHORITY TO REGULATE PROCEEDINGS

Matters pertaining to trial management are not always apparent to appellate tribunals.

LICENSING BOARDS: AUTHORITY TO REGULATE PROCEEDINGS

Administrative boards cannot voluntarily adopt rules that curtail their own powers in conflict with established legal standards.

ADMINISTRATIVE PROCEDURE ACT: PRESIDING OFFICER

A policy standard for Licensing Boards which derogates from the commonly accepted powers of a hearing tribunal may conflict with §191 of the Atomic Energy Act, which established the Licensing Boards as independent tribunals, and the Administrative Procedure Act, under which they function.

ADJUDICATORY BOARDS: DELEGATED AUTHORITY

Licensing and Appeal Boards lack the power to make policy. *Offshore Power Systems* (Floating Nuclear Power Plants), CLI- 79-9, 10 NRC 257, 261 (1979).

APPEAL BOARD: EFFECTIVENESS OF DECISION

Where the Appeal Board has not decided the Staff's motion for directed certification and has not issued an order on the merits of the Staff's motion, it has not issued a holding establishing a new standard that must be followed by Licensing Boards.

MEMORANDUM AND ORDER
(Reaffirming Board's Intention of Calling Independent Experts,
and Requiring Further Prefiled Staff Testimony)

MEMORANDUM

Statement

On June 22, 1981, the evidentiary hearing in this operating license proceeding began with the introduction of testimony on the seismic issue. The Board has already been alerted to the sensitivity of this issue by a discussion in the Safety Evaluation Report, which indicated that the facility had been designed to withstand ground motions of 0.15g for a safe shutdown earthquake (SSE) and 0.10g for operating basis earthquake (OBE); and that a ground acceleration from a recent seismic event in the vicinity of the plant had been recorded at 0.25g. In addition, the SER reported that: the frequency of seismic occurrences in the area had increased greatly due to the impoundment of the Monticello reservoir needed to provide cooling water; the ground motion already encountered, of greater than design basis, resulted from a magnitude 2.8 earthquake; and, there were differing opinions by the Applicants, Staff, ACRS, and a dissenting Staff member as to the maximum earthquake that might be expected from the reservoir induced seismicity, varying from a magnitude 4.0 to a magnitude 5.3 (each of these projected magnitudes being far in excess of the magnitude 2.8 which had already produced ground motion in excess of the design basis).

The Board received the Applicants' and Staff's testimony on seismicity from June 22, 1981 through June 24, 1981. Intervenor had no seismic witnesses and indicated at the outset that he was not well equipped to cross-examine on this issue, not knowing the distinction between magnitudes of earthquakes and ground accelerations. Tr. 755-757. The Board's concern for the seismic safety of the facility was further heightened by the presentation of Applicants' and Staff's testimony which indicated that their respective analyses of the seismic design basis did not depend upon traditional methods of estimating magnitude and ground motion parameters on the basis of empirical data but, rather, upon certain state-of-the-art modelling techniques. While the Staff reviewers appeared to the Board to be highly competent and credible experts in the fields of geology, seismology, geophysics, and structural engineering, none of them was established to be in the forefront (as opposed to being merely highly competent) in the formulation of the highly complex modelling required to

arrive at maximum magnitudes and ground motion, and the application of response spectra, in this unique situation involving extremely shallow reservoir-induced seismicity in the Eastern United States.

After prolonged discussion and with the unanimous agreement of its members,¹ the Board decided to seek out those persons in the forefront of the various disciplines to review the record and give their opinions. From the U.S. Geological Survey (USGS), we were successful in acquiring the assistance of Drs. William B. Joyner, David M. Boore and J. P. Fletcher. Drs. Boore and Joyner are recognized as outstanding authorities in estimating ground motion, and were co-authors of two USGS circulars (672 and 795) which supplied much of the foundation for the Appeal Board's decision in *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-644, 13 NRC 903, (June 16, 1981). They have recently updated the subject of those circulars to include strong motion records from the 1979 Imperial Valley, California earthquake. USGS Open File Report 81-365. Dr. Fletcher was responsible for stress drop calculations at the Monticello reservoir which were the subject of differing professional opinion among the Staff experts regarding the estimates of earthquake magnitude and ground acceleration. He also co-authored USGS Open File Report 81-0448 containing an analysis of accelerograms that recorded ground motions of 0.25g, 0.22g, and 0.24g at the Monticello reservoir.

The Board was also fortunate in acquiring the assistance of Drs. Enrique Luco and Mihailo Trifunac, who are seismic consultants to the ACRS and who had previously been called by Licensing and Appeal Boards as Board experts. Some of Dr. Trifunac's state-of-the-art work has been utilized by Drs. Boore and Joyner in their formulations. In addition to his other qualifications, Dr. Luco is a colleague of Dr. J. M. Brune at the University of Southern California whose model (the Brune model) was a large factor in the Applicants' and Staff's formulations in this case. We expect that Dr. Luco will have great familiarity with applying the results of the Brune formula to physical structures.

In a conference call during the week of July 6, 1981, the Board indicated to the parties that it was considering retaining Board experts. We formally announced that decision when the hearing recommenced on July 13, 1981. On July 17, 1981, we fully explained what it was that we

¹ We are aware of the Appeal Board Panel's practice of requesting additional evidence where only one of the board members believes that the additional information will assist in the discharge of his adjudicatory functions. See unpublished Memorandum and Order (March 3, 1980), concurring opinion (Chairman Rosenthal), p. 5, *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), Docket Nos. 50-338-OL, 50-339-OL. Because of the unanimous agreement of our members that the testimony of independent Board experts would be desirable, we did not have to resort to such a practice.

intended the experts to do and why we had decided to retain them. At a conference call held the next week, we reaffirmed that decision and gave the parties the names of our potential witnesses.

On August 7, 1981, the NRC Staff filed a motion seeking directed certification of the Licensing Board's determination to call independent experts. A substantial portion of that motion concerned itself with the allegation that the Licensing Board had failed to explain the reasons for seeking the assistance of independent consultants. On August 10, 1981, the Appeal Board requested our full explanation. On August 13, 1981, this Board issued a memorandum which indicated, *inter alia*, that a full explanation had been contained in the transcript of the hearing on July 17, 1981 at Tr. 3790-3817. Later that same day, the Appeal Board issued an order requiring responses to the Staff motion and providing the Staff with an opportunity to file a supplement to its motion.

The Staff filed that supplement on August 21, 1981 in which it shifted its focus from the allegation of its August 7, 1981 memorandum that the Board had failed to give a thorough explanation for its determination to retain Board witnesses to an allegation that the Board's action was based upon the Board Chairman's supposedly pejorative thoughts and accusations. The Board Chairman remarked at Tr. 3792 that the Staff should recognize that an applicant should be expected to present information and experts primarily in support of its position, and that the Staff should review Applicants' information critically before making a final determination. The Staff read into that discussion (NRC Staff Supplement August 21, 1981, p. 4) a "clear implication ... that Staff cannot be trusted to present independent, unbiased information for the Board's decision;" a "conclusion ... that the Staff would ignore pertinent data or information which is potentially adverse to the Staff's position;" and "a prejudgement without good cause ... that the Staff would be less than candid with the Board regarding such matters with the consequence that the 'Staff's concern for its position' would prevail over truth." None of these implications, conclusions, or prejudgements (even the phrase in quotations) are to be found in the record of the case. Staff's memorandum also indicated that it would present further prefiled testimony of its seismic panel by September 15, 1981.

On August 25, 1981, the Appeal Board ordered that the Staff file that supplemental testimony no later than September 15. The Appeal Board conjectured that, following the Licensing Board's consideration of that supplemental testimony, the Licensing Board might no longer find it necessary to call the independent experts. The Appeal Board's order indicated that it would issue a further memorandum elaborating upon the matter.

On August 27, 1981, the Appeal Board issued an unpublished memorandum elaborating on its thinking. With a view towards the Licensing Board's reviewing the expected Staff prefiled testimony due on September 15, 1981, the Appeal Board suggested a standard to be applied to the calling of Board experts. The Appeal Board opined (p. 6) that "such an undertaking ... [the calling of Board experts] should be reserved for that most extraordinary situation in which it is demonstrated beyond question that a Board simply cannot otherwise reach an informed decision on the issue involved."

Moreover, even before reaching the point at which that suggested general rule might be applied to determine whether Board witnesses could be called, the Appeal Board suggested options that must be explored if the Licensing Board has been persuaded for one reason or another that certain of the evidence is unreliable. As stated by the Appeal Board, "among other things, the [Licensing] Board can (1) simply reject that evidence and decide the issue without regard to it (*i.e.*, on the basis of the other evidence of record); or (2) require the sponsoring party to produce supplemental testimony which is not subject to the same infirmities."

In its August 10, August 25 and August 27, 1981 issuances, the Appeal Board had not acted on the Staff's motion for directed certification and, consequently, had not ordered us to take any specific action. Nonetheless, on the Appeal Board's suggestion that we review the Staff's September 15, 1981 prefiled testimony, which we have now received, we decided to delay any further proceedings on the seismic issue to reconsider our position in light of Staff's testimony. On October 2, 1981, the Appeal Board issued a further "Memorandum," which appeared to *order* us "*not* to call any independent consultants as Board witnesses" until we have supplied our reasons to the Appeal Board and that Board has had a chance to act. We have now read the further Staff testimony and, for the reasons that follow, have concluded that our decision of July 17, 1981 to call Board experts was correct, was desirable under the circumstances, and finds further support in the Staff's September 15 testimony. Although the Board witnesses have completed their written reports and, like Staff's and Applicants' seismic witnesses, are prepared to testify, we are staying our hand in the matter of further scheduling until the Appeal Board has had an opportunity to decide whether it wishes to act on the motion for directed certification.²

² The Licensing Board had originally established a schedule of requiring the Board experts' reports by September 10, 1981 and holding the further hearing on seismicity during the week of September 21, 1981. We note that 10 C.F.R. §2.730(g) provides that the filing of a motion for directed certification shall not stay the proceeding unless otherwise ordered. We interpret the Appeal Board's direction to us to consider the further staff testimony before

CONTINUED

The Legal Basis for Calling Board Witnesses

Rule 706 of the Federal Rules of Evidence, which became effective on July 1, 1975, permits a Federal Court to appoint expert witnesses of its own selection. The Rule did not confer new powers upon the trial court, but merely codified existing law and established specific procedures by which expert witnesses would be appointed, compensated, and examined. As stated in the Advisory Committee's note to Rule 706 with regard to existing law, "the inherent power of a trial judge to appoint an expert of his own choosing is virtually unquestioned."

The Advisory Committee cited the two principal cases in the area, *Scott v. Spanjer Bros., Inc.*, 298 F.2d 928 (2d Cir., 1962) and *Danville Tobacco Association v. Bryant-Buckner Associates, Inc.*, 333 F.2d 202 (4th Cir. 1964). In *Scott v. Spanjer*, p. 930, the 2nd Circuit indicated its understanding that "appellate courts no longer question the inherent power of a trial court to appoint an expert under proper circumstances to aid in the just disposition of a case." It further quoted (*Ibid.*) McCormick on Evidence that "the existence of judge's power to call witnesses generally and expert witnesses particularly seems fairly well recognized in this country," and that cases have been recorded as early as the 14th century on the summoning of experts by the judges to aid them in deciding scientific issues.

Not only have trial courts claimed this inherent right to call experts of their own choosing, but so have Federal administrative judges.³ See *e.g.*, 1) Federal Power Commission—*Permian Basin Area Rate Case*, 34 F.P.C. 17, 238 (1965); 2) Civil Aeronautics Board—*Continental-Western Merger Proceeding*, Docket No. 38733; 3) Postal Rate Commission—Docket No. MC73-1; Docket No. R74-1; 4) Federal Communications Commission—*AT&T Rate Matter*, Docket No. 19129; 5) Federal Energy Regulatory Commission—*Pacific Power & Light Co.*, Docket Nos. E7777, E7296.

We have found no court cases or administrative board proceedings in which a trial court or board was reversed in calling its own expert, or even one in which the matter has been given interlocutory review by an appellate tribunal. We doubt that any such case or proceeding exists: the inherent power of a trial court to call its own experts when it deems that procedure desirable is too firmly ingrained in the common law to be

calling the experts as equivalent to an "order," even though the direction was contained in "Memorand[a]" dated August 27, 1981 and October 2, 1981. Consequently, we did not hear the seismicity experts during the week of September 21, 1981 and have left the further hearing dates open until the Appeal Board acts, even though we do not wish to delay the proceeding.

³ Court cases generally involve only private parties. Where the public interest is involved, the reasons are stronger for permitting the presiding officer to call his own witnesses, especially where the matters involve the public health and safety.

successfully challenged at this late date, especially after the adoption of Rule 706 of the Federal Rules of Evidence.

Nor do we have to look beyond the Nuclear Regulatory Commission to find authority for a licensing board's calling its own experts. In addition to the two cases cited in the Appeal Board's unpublished memorandum of August 27, 1981, fn. 5, *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2) ALAB-519, 9 NRC 42 (1979), ALAB-604, 12 NRC 149, 150-151 (1980) and *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), Docket Nos. 50-443 and 50-444 (November 6, 1980 unpublished order), there are other cases in which board experts were called, e.g., *Southern California Edison Company* (San Onofre Nuclear Generating Station, Units 2 and 3), Docket Nos. 50-361-OL and 50-362-OL; *Public Service Electric Gas Co.* (Hope Creek Generating Station, Units 1 and 2), LBP-78-15, 7 NRC 642 (1978); and *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), LBP-78-26, 8 NRC 102 (1978). See also *Consumers Power Company* (Midland Plant, Units 1 and 2), ALAB-382, 5 NRC 603, 608 (1977), in which the Appeal Board indicated that "the decision to call or not to call a witness for the Board must rest and does rest ultimately in the sound discretion of the tribunal alone."

The Licensing Board's Present Position .

We have reviewed the Staff's further prefiled testimony submitted on September 15, 1981. We have also received and issued to the parties the written reports from the independent consultants, although we do not consider the substance of those reports in re-evaluating our July 17, 1981 ruling. Staff, however, has reviewed the USGS experts' report in their September 15, 1981 further testimony, and has concluded (p. 46) that the report contains "implicit support of the Staff's methodology in deriving the maximum reservoir-induced earthquake" and that any Staff differences with those experts' estimate of ground motion relate to high frequencies that would not cause damage to the Summer plant. If Staff's conclusion is correct that the report corroborates the Staff's position, and that corroboration can be established by those witnesses appearing at further hearing, in our opinion our decision to call independent witnesses has been justified. If the testimony of the independent consultants allays the safety concerns of the Board that prompted the retention of those experts, it will further our ability to make recommendations on the issuance of the operating license. If the other reports also corroborate the Staff's position on the other aspects of seismicity, they will supply added support to the record; if they do not, we would want to explore the reasons why.

Taking into account the established precedents, which unanimously support the power of the trial tribunal to retain independent witnesses, and Staff's representations that the report of at least one group of experts will serve to satisfy our safety concerns, we believe that the correctness of our decision of July 17, 1981 to retain these experts is beyond question. We cannot, however, claim to have satisfied the new standard that the Appeal Board has suggested for calling Board experts, that this is "that most extraordinary situation in which it is demonstrated beyond question that a Board simply cannot otherwise reach an informed decision on the issue involved." In view of the fact that the burden is on the parties to establish that the safety issues can be resolved in favor of plant operation, we do not see how that standard can ever be satisfied; if the safety of the plant is not established in the record, the Board's informed decision must be to deny the license. The suggested standard, as we see it, becomes appropriate only if we presume that the operating license *should* issue and that we must affirmatively seek evidence that would support the issuance—a licensing standard that we think would be improper and contrary to the public interest.

Furthermore, as we have established previously, the standard for calling Board experts suggested by the Appeal Board is not a reflection of established precedent. All authorities of which we are aware are unanimous in upholding the power of the trial tribunal, even when the public interest is not present, to call its own independent witnesses and in treating that action as an interlocutory one which can only be reviewed in the final appeal.⁴ For this Licensing Board to voluntarily adopt the suggested standard, in derogation of the unanimously-accepted powers of a trial tribunal, in order to moot the pending motion for directed certification,

⁴ The Appeal Board's August 27, 1981 memorandum was the third in a series of recent Appeal Board issuances in this proceeding which have an unintended effect of denigrating the role of the Licensing Board to that of an adversary party in the proceeding. In its June 1, 1981 Decision (ALAB-642), reversing the Licensing Board's admission of the Fairfield United Action petitioner into the proceeding, the Appeal Board indicated (Op. 17, 20-21) its preference for having the Licensing Board assume the role of cross-examiner over that of the late-filing petitioner, without apparently considering the attendant consequence of the Licensing Board's sacrificing some of its appearance of impartiality.

Similarly, the Appeal Board's issuances of August 10, 1981 and August 27, 1981, requiring the Licensing Board's "explanations," invite the Licensing Board into an adversary relationship with the Staff and Applicant in a brief-writing contest to the Appeal Board.

We do not raise this matter to imply an intentional denigration of licensing board authority or to question the Appeal Board's authority to reverse this Licensing Board on discretionary matters. We raise it only to point out a dimension to the process of reviewing matters of trial management that is not always apparent to appellate tribunals.

would constitute a policy decision on our part rather than the application of an established legal standard. We have some question as to whether even the Commission would consider adopting such a policy standard in derogation of the commonly accepted powers of a hearing tribunal, which might violate at least the spirit of §191 of the Atomic Energy Act, as amended, which established the Licensing Boards as independent tribunals, and the Administrative Procedure Act, as amended (5 U.S.C. §§551, *et seq.*), under which they function.

Moreover, even if we could agree with that suggested new policy, we lack the power to adopt it. In *Offshore Power Systems* (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 261 (1979), the Commission indicated that only it, and not the licensing boards (in that case an appeal board), was "empowered to make policy as well as to apply it."

We do not mean to appear as disobeying an Appeal Board order. We acknowledge that the Appeal Board has the authority to review our acts and to reverse our position even on the basis of what we consider to be the adoption of a new policy. What we consider to be a matter of policy may be determined by the Appeal Board to be a reflection of legal precedents and, between the two boards, the Appeal Board's decision would be controlling. It is only the Commission that could then question the Appeal Board's ruling, regardless of how strongly we might feel.

However, as we read the issuances of the Appeal Board in this proceeding, we do not find any order to us that requires the application of the suggested standard. The Appeal Board has made it clear that it has not yet even decided to accept for consideration and decide on the merits the Staff's motion for directed certification. Moreover, in its August 27, 1981 Memorandum, which suggested the new standard, the Appeal Board indicated (Op. 1, fn. 1) that it had not yet reviewed the testimony in the preceding, seemingly a prerequisite to deciding the Staff's motion on the merits. We have no doubt that if the Appeal Board were to consider the Licensing Board's decision to call expert witnesses in the context of the live facts of this case, as would be disclosed by its reading the transcript of hearing, it would reconsider proposing that new standard and would affirm this Board.

In sum, we find the procedural context of the Appeal Board's issuances uncertain. We interpret them as directing us only with regard to reading the Staff's September 15, 1981 further testimony and stating our views on calling the Board witnesses. We view the standard enunciated in the August 27, 1981 Memorandum as a suggested standard that we might apply in considering the Staff's supplemental testimony if we wish to obviate an Appeal Board consideration on the merits of the Staff's motion for directed certification. In our opinion, however, we cannot voluntarily apply the standard proposed by the Appeal Board because we cannot

accept that standard as reflecting applicable legal precedent. Were we to adopt that standard, we would be establishing policy for the Commission in violation of the prohibition of *Offshore Power Systems, supra*. Furthermore, it is a policy which we believe might violate the statutorily imposed responsibilities of a licensing board under the Atomic Energy Act and the Administrative Procedure Act, and thus would have an undesirable effect upon licensing board's responsibilities to the public health and safety. However, we recognize the authority of the Appeal Board to decide these matters contrary to how we view them and to reverse our actions. We do not claim the last word on these matters—only the first. We, therefore, reaffirm our ruling of July 17, 1981 to call the independent consultants as board witnesses to appear together with the Applicants' and Staff's seismic witnesses at a further hearing, but do not schedule such a hearing pending a further issuance by the Appeal Board.

ORDER

For all of the foregoing reasons, upon which the Board relies to proceed with calling its own expert witnesses, it is this 15th day of October, 1981

Ordered

That Staff file by October 26, 1981 further written testimony, to be presented at further hearing, responding in full to the Board experts' reports.

Judge Hooper joins in this Memorandum and Order, but is not available to sign it.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Herbert Grossman, Chairman
ADMINISTRATIVE JUDGE**

**Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Sheldon J. Wolfe, Chairman
Dr. Walter H. Jordan
Dr. Harry Foreman

In the Matter of

Docket No. 50-382-OL

**LOUISIANA POWER &
LIGHT COMPANY**

**(Waterford Steam Electric Station,
Unit 3)**

October 20, 1981

The Licensing Board grants the Applicant's motion for summary disposition of one of the Joint Intervenors' contentions which related to safety-related concrete, and dismisses the contention.

RULES OF PRACTICE: SUMMARY DISPOSITION

It is the party seeking summary judgement, not the party opposing it, which has the burden of showing the absence of a genuine issue as to any material fact, and, where the moving party's evidentiary matter in support of the motion does not establish the absence of a genuine issue, summary judgment must be denied even if no evidentiary matter is presented. *Adickes v. Kress and Company*, 398 U.S. 144 (1970).

RULES OF PRACTICE: SUMMARY DISPOSITION

If the movant has properly supported its motion for summary disposition, it is incumbent upon the opposition to answer, setting forth specific facts showing that there is a genuine issue of fact. *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451 (1980).

RULES OF PRACTICE: SUMMARY DISPOSITION

A party cannot avoid summary disposition on the mere hope that at trial he will be able to discredit movant's evidence nor can he be permitted to go to trial on the vague supposition that something may turn up. *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246 (1975).

RULES OF PRACTICE: SUMMARY DISPOSITION

If the issue is demonstrably insubstantial, it should be decided pursuant to summary disposition procedures in order to avoid unnecessary and possibly time-consuming hearings. *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).

MEMORANDUM AND ORDER (Granting Applicant's Motion for Summary Disposition Of Joint Intervenors' Contention 22)

On August 21, 1981, pursuant to 10 CFR §2.749, Applicant filed a Motion For Summary Disposition of Joint Intervenors' Contention 22 (Safety-Related Concrete). The NRC Staff filed an Answer In Support thereof on September 15, 1981. The Joint Intervenors (Save Our Wetlands, Inc. and Oystershell Alliance, Inc.) neither responded to Applicant's Motion for Summary Disposition nor responded to any new facts and arguments presented in Staff's supporting answer.

MEMORANDUM

I. Background

With respect to Joint Intervenors' Contention 22,¹ our Order dated September 12, 1979 reflects the following:

During the Special Prehearing Conference [held on April 26, 1979], the Joint Petitioners' counsel, Mr. Jones, acknowledged that, when drafted, there was no specific basis for this contention,

¹As originally submitted Contention 22 read:

It is contended that Applicant has failed to discover, acknowledge, report or remedy defects in materials, construction and workmanship such as improperly poured and set concrete and concrete poured without required reinforcement during the fabrication of the containment vessel (reactor vessel) and/or related integral systems.

and that it had been predicated upon reports by several members of the Joint Petitioners concerning conversations with various construction employees who were unidentified and unknown to him. He was reluctant to file such a contention in the absence of a specific allegation or affidavits. However, counsel stated that he decided to file the contention after a local newspaper article appeared, which reported that three concrete masons, who declined to give their names or to provide detailed explanations to the newspaper reporter, stated that they had witnessed numerous mistakes being made in the concrete work at Waterford. (A copy of the New Orleans States-Item article, dated April 3, 1979, was appended to the Joint Petitioners' submission of June 1, 1979.) Mr. Jones urged that this contention be admitted in order that discovery could be initiated, and represented to the Board that the Joint Petitioners would abandon this contention should discovery fail to disclose facts proving the allegations in the contention (Tr. 102-105).

At the request of the Board, under date of May 30, 1979, the Staff furnished a copy of a memorandum prepared by a member of the Office of Inspection and Enforcement on April 4, 1979. The memorandum reflected that, upon being interviewed, the staff writer for the States-Item newspaper indicated that he had no further information than that presented in the article. The memorandum also reflected that the staff writer stated that the three concrete workers were working on the intake structure, a non-safety related structure, but that these workers did say that their comments also applied to previous work. The staff writer was unaware whether these three workers were employed by a subcontractor who performed safety related work or by another subcontractor who performed non-safety related work. The memorandum concluded that "Based on the vagueness of the allegation and the reported employees' relationship to previous safety related work activities, it is not considered practical to pursue this matter further".

We are loathe to admit any contention founded on purported allegations of unidentified individuals. On the other hand, however, a portion of the contention relating to safety related concrete construction is reasonably specific and perhaps may be fleshed out upon use of the discovery procedure. Further, after discovery has been concluded, in the event the Joint Petitioners do not withdraw this contention, Applicant and/or Staff may move for summary

disposition pursuant to 10 C.F.R. §2.749. In sum, the contention is specific enough to evoke our concern. The contention, as rephrased by the Board, is admitted and reads as follows: "Applicant has failed to discover, acknowledge, report or remedy defects in safety related concrete construction."

II. Discussion

In support of its Motion, Applicant appended the affidavit of Thomas Gerrets, who is its Quality Assurance Manager for the Waterford 3 nuclear generating plant. Applicant also appended Exhibits A through G. Applicant's statement of material facts, as to which it asserts there is no genuine issue to be heard, reflects the following:

1. Applicant's architect-engineer for the Waterford 3 project is Ebasco Services, Inc., which has general supervisory responsibility for construction, including the placement of all safety-related concrete. Most of the concrete was actually placed by an Ebasco subcontractor, J. A. Jones Construction Company. Some of the specialized concrete placements were performed by another subcontractor, Fegles Power Service. At present, more than 99% of safety-related concrete construction at Waterford 3 has been completed. (Gerrets' affid., par. 2)
2. Applicant has implemented a Quality Assurance (QA) and Quality Control (QC) program for Waterford 3 in compliance with 10 C.F.R. Part 50, Appendix B. This program is described in Section 1.8 of the Waterford 3 Preliminary Safety Analysis Report and in Chapter 17 of the Final Safety Analysis Report. In addition, Ebasco independently implements its own QA/QC program, which has been generically approved by the NRC. Both concrete construction subcontractors also have detailed QA/QC programs, which have been reviewed and approved by Ebasco. (Gerrets' affid., par. 3)
3. The cement, aggregate, admixtures and other materials used in batching concrete for Waterford 3 are all obtained from supply sources with QA programs that have been reviewed and approved by Ebasco, and are inspected by the concrete batch contractor upon receipt. In addition, an independent testing laboratory, Peabody Testing Services, Inc., performs physical and chemical tests on the cement, aggregates and water. (Gerrets' affid., par. 4)
4. All concrete is batched in accordance with mix designs that meet industry standards and have been approved by Ebasco, and thereafter Ebasco and Peabody Testing Service perform appropriate tests and inspections to ensure that the concrete has

been properly mixed and is acceptable before it leaves the batch plant. (Gerrets' affid., par. 5)

5. Before any safety-related placement begins, tests upon the first truckload of concrete of the day are conducted by Peabody Testing Services for air content, slump, unit weight, ambient temperature, and concrete temperature. These tests are repeated approximately every 50 cubic yards of concrete after the first batch of the day and every batch is checked for proper water/cement ratio and the number of drum revolutions on the delivery truck. Additionally, a set of four compression cylinders is made from the first batch of the day and every 150 cubic yards thereafter. If a concrete placement is less than 150 cubic yards, but more than 50 cubic yards, a minimum of two sets of cylinders must be molded. The cylinders are then tested for compressive strength at the Peabody Concrete Testing Laboratory with one cylinder being broken at 7 days of age; two at 28 days and one which is used as a spare should problems be encountered with the 28-day breaks. Cylinders are molded, cured and broken in accordance with ASTM C-31. (Gerrets' affid., par. 6)
6. Before each concrete placement, the placement location is subjected to a pre-placement inspection by representatives of Ebasco and the concrete subcontractor. The actual placement of concrete is performed in strict compliance with Ebasco's Detailed Specifications for Concrete Placement, Curing and Finishing. The placement must also be carried out in accordance with the detailed concrete placement procedures of the concrete subcontractor. All concrete placements are observed and inspected by QC inspectors of the concrete subcontractor to ensure that the concrete is properly placed and cured in accordance with the established procedures and specifications. In addition, most of the concrete placements have been independently observed and inspected by Ebasco QC inspectors. (Gerrets' affid., pars. 7, 8)
7. All inspections and QA/QC functions concerning safety-related concrete are documented in accordance with 10 C.F.R. Part 50, Appendix B, and the documentation is retained by Applicant. In addition, Applicant's QA auditors periodically observe the work at Waterford 3 and audit the QA/QC programs of Ebasco and the concrete subcontractors to ensure that proper QA/QC procedures are followed. Ebasco also independently audits the concrete subcontractors' QA/QC procedures, and Ebasco's QA/QC program at the Waterford 3 site is in turn

audited by representatives from Ebasco's headquarters in New York. Applicant's QA/QC program is audited by Middle South Services, Inc., a subsidiary of the holding company that owns Applicant. Finally, the NRC performs its own on-site inspections of the construction at Waterford 3 and audits of the QA/QC program. (Gerrets' affid., par. 9)

8. During the course of construction, the placement of safety-related concrete has resulted in only four Construction Deficiency Reports. Each deficiency was duly reported to the NRC, corrected by Applicant, and closed out through an NRC inspection.² (Gerrets' affid., par. 11)
9. During the course of construction, the NRC made a number of unannounced visits to the Waterford 3 site to inspect the construction, including the placement of safety-related concrete. None of the NRC inspections revealed any significant defect in the safety-related concrete placed at Waterford 3 of such seriousness that it should have been reported to the NRC under 10 C.F.R. §50.55 (e) because of its effect on safety. All of the deficiencies concerning safety-related concrete identified by NRC inspections have been relatively minor, mostly involving problems with QA/QC procedures and documentation. In each case, the problem discovered has been corrected by Applicant, and the matter has been closed following a reinspection by the NRC.³ (Gerrets' affid., par. 12)
10. With regard to the New Orleans States-Item newspaper article, Applicant investigated the allegations contained therein, including numerous interviews with construction workers, but was unable to locate the three concrete workers in question, and was unable to discover any factual basis for the questions they had reportedly raised.⁴ (Gerrets' affid., par. 13)

² These facts were confirmed in NRC Inspector Joseph Tapia's affidavit (par. 3) which was appended to the NRC Staff's supporting answer.

³ In his affidavit, NRC Inspector Tapia attested that, during the past five years, the NRC Office of Inspection and Enforcement had conducted seven inspections of concrete construction activities, and that, while two notices of items of non-compliance were issued, all such items have been satisfactorily resolved. (pars. 4, 5)

⁴ In an affidavit appended to the Staff's supporting answer, Ramon Hall, Acting Chief, Engineering and Materials Section, Office of Inspection and Enforcement, attested that, after interviewing the newspaper's staff writer who had written the article, he had prepared the memorandum dated April 4, 1979, and that, since that conversation, he had received no further communication from the staff writer or from any other person which provided any elaboration, substantiation, or further allegation concerning the subject matter of that article. (pars. 4-6)

We note again that the Joint Intervenors neither responded to Applicant's Motion for Summary Disposition nor responded to any new facts and arguments presented in the Staff's supporting Answer. Except for the circumstances herein, these failures to respond would not necessarily be fatal because, in *Adickes v. Kress and Company*, 398 U.S. 144 (1970), the Supreme Court held that it is the party seeking summary judgment, not the party opposing it, which has the burden of showing the absence of a genuine issue as to any material fact, and that, where the moving party's evidentiary matter in support of the motion does not establish the absence of a genuine issue; summary judgment must be denied even if no opposing evidentiary matter is presented. Herein, however, the movant supported by the Staff's answer, has sustained its burden of establishing the absence of a genuine issue of material fact via the affidavit of its quality assurance manager and via supporting exhibits which show that detailed specifications and the test and inspection procedures were followed by Applicant and by its architect-engineer and subcontractors, and that any deficiencies were corrected and/or resolved. Where, as here, the movant had properly supported its motion for summary disposition, it was incumbent upon the Joint Intervenors to answer, setting forth specific facts showing that there is a genuine issue of fact. *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 & 2), ALAB-584, 11 NRC 451, 453 (1980). A party cannot avoid summary disposition on the mere hope that at trial he will be able to discredit movant's evidence nor can he be permitted to go to trial on the vague supposition that something may turn up.⁵ *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975). In sum, the safety-related concrete issue is one of those "demonstrably insubstantial issues" that should be decided pursuant to summary disposition procedures in order to avoid unnecessary and possibly time-consuming hearings. See *Houston Lighting and Power Company* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542, 550 (1980).

ORDER

⁵ In their answers to Staff's Interrogatories and Response To Request for Documents served on January 18, 1980, while stating that they were in the process of identifying appropriate witnesses in support of Contention 22 and would seasonably disclose this information, the Joint Intervenors thereafter did not furnish this information. Further, with respect to other interrogatories regarding this contention, the Joint Intervenors stated that they were unanswerable until such time as the Board granted their Motion to Compel Applicant to answer certain interrogatories. In an Order of January 11, 1980, the Board denied the motion to compel because the information sought was not related to the issue placed into controversy by Contention 22.

For the foregoing reasons, it is this 20th day of October 1981
ORDERED

That Applicant's Motion For Summary Disposition of Joint Intervenors'
Contention 22 is granted, and the Contention is dismissed.

Judges Jordan and Foreman concur.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Sheldon J. Wolfe
ADMINISTRATIVE JUDGE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Robert M. Lazo, Chairman
Gustave A. Linenberger
David R. Schink

In the Matter of

Docket No. 50-133-OLA

**PACIFIC GAS & ELECTRIC
COMPANY**

**(Humboldt Bay, Power Plant,
Unit No. 3)**

October 20, 1981

In a license amendment proceeding, the Licensing Board seeks information from the Staff on whether maintaining the plant in long-term cold shutdown pending issuance by the Commission of backfit requirements for older plants presents risk to the health and safety of the public.

MEMORANDUM AND ORDER

In an order entered on July 14, 1981, the Atomic Safety and Licensing Board (Board) directed Pacific Gas and Electric Company (Licensee) to submit a written statement setting forth its intentions regarding plant modifications necessary to bring Humboldt Bay Power Plant, Unit 3, into compliance with current NRC requirements and, if it wished to retain the operating authority provided in Facility Operating License No. DPR-7, a proposed schedule for completing such plant modifications. In response thereto, on August 13, 1981, Licensee filed an affidavit executed by its Senior Vice President for Facilities Development.

According to Licensee, additional studies are necessary to evaluate various alternatives for the plant. These studies include updating Licensee's analysis of those actions which must be taken in order to resume power operation as well as various decommissioning options. Licensee has already embarked upon such a program which should be completed by December 15, 1981. However, an additional six months will be required, to reassess the costs associated with various alternatives being evaluated, after the

Commission determines backfit requirements for older plants such as Humboldt and issues guidance on those requirements.

Licensee's response concludes with the statement that it is extremely reluctant to abandon a proven source of generation located in a relatively isolated area within its system and with the assertion that:

"Since the unit, in its present cold shutdown condition, presents no risk to the health and safety of the public, PGandE believes that there is no compelling reason for this Board to issue an Order to Show Cause why the operating authority for Humboldt Bay Unit No. 3 should be revoked. We are convinced that it is beneficial to maintain the plant in an operational status pending a decision on NRC backfit requirements and an assessment of their effect on the economics of returning the Unit to operation."

Before taking further action in this proceeding, the Board would like to have the views of the NRC Staff on Licensee's assertion that the Humboldt Bay nuclear plant in its present cold shutdown condition, presents no risk to the health and safety of the public. Specifically, the Staff is directed to provide answers to the following Board questions:

1. What regulatory requirements apply to a plant in cold shutdown mode.
2. Are applicable regulatory requirements currently being met by Licensee?
3. Has the Staff given consideration to the question of whether the exceptionally long shutdown of Humboldt Bay Unit No. 3 might give rise to the potential for significant safety problems? What unusual problems might arise?
4. Has there been any evidence whatsoever of seismic effects within the exclusion area? If so, please describe.
5. What physical security measures are currently in force? What was date and nature of last change to physical security procedures? What changes are planned between now and end of CY 1982? (Assume no change in operational status).
6. What surveillance is being routinely performed by I&E? What was date and nature of last change in routine surveillance? What changes are planned between now and end of CY 1982? What nonroutine surveillance has been performed? What were

the results of surveillance efforts in 1980, 1981? (Assume no change in operational status).

7. What is status of facility, including components and systems that are routinely operated; and including location and conditions of storage of all new, partially used, and spent fuel? What is currently being done to maintain fuel integrity and assure its safety with respect to security, criticality and thermal stability?
8. Describe physical and preventive maintenance being performed to assure continued integrity of safety related components. What is size, makeup (by discipline) and duty cycle of standby crew? What will be required to return facility to operational readiness? Is there known deterioration of any components such that replacement is contemplated in order to retain adequate standby conditions - in order to achieve operational readiness? Has state of technology advanced to such an extent that any significant components on instrumentation and control systems will need to be modified to achieve operational readiness?

ORDER

It is this 20th day of October 1981

ORDERED

That within thirty (30) days of the date of service of this Order, the NRC staff shall file written responses to the Board's questions set forth above. Other parties may file their comments regarding questions or the Staff's responses thereto within fifteen (15) days after service of the Staff's responses.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Robert M. Lazo, Chairman
ADMINISTRATIVE JUDGE**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judge

Gary L. Milhollin as Special Master Chairman

In the Matter of

**Docket No. 50-289-SP
(Restart)
(Reopened Proceeding)**

**METROPOLITAN EDISON COMPANY
(Three Mile Island Nuclear Station,
Unit 1)**

October 22, 1981

The Special Master issues a Memorandum and Order ruling that there is no right, on behalf of the individuals involved in cheating incidents, the Licensee, or the NRC Staff, to prevent the disclosure of the identities of these individuals during the hearing process.

FREEDOM OF INFORMATION ACT: PRIVATE RIGHT OF ACTION

Under *Chrysler Corporation v. Brown*, 441 U.S. 281, 60 L.Ed.2d 208, 995 S. Ct. 1705 (1979) neither the Privacy Act, 5 U.S.C. §552a (1974) nor the Freedom of Information Act, 5 U.S.C. §552 (1977) gives a private individual the right to prevent disclosure of names of individuals where the Licensing Board elects to disclose.

REGULATIONS: INTERPRETATION

10 CFR §2.744 requires a weighing of the need for a proper decision against the interest in privacy where information is eligible for exemption from disclosure under 10 CFR §2.790(a) (7).

**LICENSING BOARD(S): AUTHORITY TO REGULATE
PROCEEDINGS**

It is within the discretion of the Special Master to hold information

confidential if to do so would increase the likelihood of a fair and impartial hearing.

MEMORANDUM AND ORDER ON CONFIDENTIALITY

I. Background

On July 31, 1981, the Office of Inspector and Auditor of the United States Nuclear Regulatory Commission reported that candidates for the positions of reactor operator and senior reactor operator at the nuclear power reactor at Three Mile Island, Unit 1, cheated on their NRC licensing examinations. It also reported that the NRC had failed to proctor the examination properly and had failed to detect the cheating when grading the examination papers. On August 1, 1981, the NRC's Office of Inspection and Enforcement filed a similar report, in which two candidates admitted in signed statements facts which constitute an admission of cheating. As a result of these investigations, the Atomic Safety and Licensing Board on September 14, 1981, ordered that the above-entitled proceeding be reopened to evaluate the effect this cheating might have on the conclusions the Board reached in its Partial Initial Decision of August 27, 1981. The Board also appointed me Special Master under 10 CFR §2.722 (1981) for the purpose of conducting the reopened proceeding.

The purpose of this Memorandum and Order is to decide to what extent individuals who may have cheated on examinations, or who have been or may in the future be accused of cheating, are entitled to have their identities held confidential. The parties to the reopened proceeding have taken the following positions on this question: the NRC Staff urges that confidentiality is required by the NRC's Rules of Practice and by the regulations which implement the Freedom of Information Act; the Intervenor, Mr. and Mrs. Aamodt and Three Mile Island Alert (TMIA), urges that confidentiality is inconsistent with the need to examine and to refer to those who cheated in order to discover whether management condoned or encouraged cheating and to discover how much cheating there was; attorneys for the individuals who were involved in cheating oppose public disclosure on the ground that intense feeling in the community may result in threats or other harm to the individuals and their families; the Licensee, GPU Nuclear Corporation, takes the position that it has no legal right to refuse to identify these individuals by name through the normal process of discovery, but suggests a lettering system which, if adopted by the Special Master through exercise of his discretion, could preserve anonymity at least until individuals are called to testify; the Commonwealth of Pennsyl-

vania takes no position of the legality of disclosure, but recommends discretionary use of the Licensee's lettering system. The parties were given an opportunity to make these arguments orally and in writing at a conference among the parties held in Harrisburg, Pennsylvania on October 2, 1981. At that time the Special Master ruled from the bench that the Licensee's lettering system should be used to facilitate discovery until such time as a final ruling on confidentiality could be made. (Tr. 23,228.)

II. The timing of this decision

As stated above, the parties are now using the lettering system proposed by the Licensee. That system consists of replacing, by letters, the names of individual candidates in investigatory reports, examination papers, and seating diagrams. The system is working; discovery is proceeding rapidly. However, when the evidentiary hearing begins on November 10 it will then be necessary to decide whether confidentiality will be maintained. Individual operator candidates will be called to testify; they will be asked about their own conduct, their knowledge of the conduct of other operators, and the conduct of management. That decision will be appealable, first to the Atomic Safety and Licensing Board (Tr. 23,119-120) and then, perhaps, to the Atomic Safety and Licensing Appeal Board, and to the Commission. The time required to decide such an appeal would probably amount to three or four weeks, at a minimum. Unfortunately, the schedule for this reopened proceeding cannot accommodate such a delay.

The balance of the Licensing Board's initial decision will be issued in late November (unpublished Licensing Board Order of September 3, 1981). If that decision is favorable to restart, the Commission will decide by early January whether to make the decision immediately effective. *Metropolitan Edison Company* (Three Mile Island Nuclear Station, Unit 1), CLI-81-19, 14 NRC 304, 305 (August 20, 1981). At that point, however, the Commission will not have a complete record before it because the Licensing Board rendered its first Partial Initial Decision (P.I.D.) subject to the outcome of this special proceeding. P.I.D., August 27, 1981 at 27. Therefore, in order to provide the Commission with a timely opportunity to rule on a complete record, this proceeding must go forward (and will go forward) on an extraordinarily rapid schedule. As things now stand the evidentiary hearing in this proceeding should be completed in November of 1981. Under this schedule the Special Master could, if necessary, make preliminary report in December or early January regarding the content of the record. A delay to decide appeals on confidentiality would preclude such a report. Under the present schedule the Special Master's final report is due in early January, and the Licensing Board's decision on the final report on the first of February, 1982.

For the reasons stated above, a ruling on confidentiality will now be made so that an appeal can be decided before the evidentiary hearing begins.

III. Confidentiality as a matter of right

A. With respect to the Licensee.

The Licensee now stands ready to disclose to any party in this case the identity of any present or former employee whose name may be linked to cheating on operator examinations. The Licensee points out that neither the Privacy Act nor the Freedom of Information Act (both of which are discussed below) applies to the Licensee's records. Thus, the Licensee does not assert any legal basis for refusing a properly-drawn discovery request which seeks these identities. The Licensee also states that, in its opinion, there are no solid grounds upon which individual employees would be legally entitled to prevent disclosure by the Licensee. From this it follows that the only way in which the Licensee could refuse to supply the identities would be if the Licensee were ordered not to supply them by the Special Master. As stated above, the Licensee recommends that the Special Master make such an order through the use of his discretion. The Special Master's decision on discretion is set out below.

With respect to the law applicable to the Licensee, there is little doubt about the soundness of the Licensee's position. Both the Privacy Act, 5 U.S.C. §552a (1974) and the Freedom of Information Act, 5 U.S.C. §552 (1977), apply to government agencies only, not to the Licensee. Nor does either of these Acts give a private individual the right to prevent disclosure. *Chrysler Corporation v. Brown*, 441 U.S. 281, 60 L.Ed. 2d 208, 99 S.Ct. 1705 (1979) (no private right of action where a government agency elects to disclose). The result is that the litigants to this case are fully entitled under the law to obtain the information they seek. In the absence of the Special Master's discretion, mentioned above, there is no barrier to discovery from the Licensee.

B. With respect to the NRC Staff.

The Staff urges that the identities of the individuals accused of cheating are not discoverable from the Staff because they fall within two exceptions to 10 CFR §2.790, the rule which makes final NRC documents generally available to the public. These exceptions are contained in §§2.790(a)(6) and 2.790(a)(7). The first, in §2.790(a)(6), exempts "personnel and medical files and similar files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy." This language is the same as that in 10 CFR §9.5(a)(b), which implements the Freedom of Information Act (5 U.S.C. §552 (1977)). The second, in §2.790(a)(7),

exempts "investigatory records compiled for law enforcement purposes, but only to the extent that the production of such records would... constitute an unwarranted invasion of personal privacy...". There is, again, a parallel provision in 10 CFR §9.5(a)(7), implementing the Freedom of Information Act. With respect to §2.790(a)(6), there is considerable doubt whether that exemption is intended to shield the type of information sought here. The concern of the exemption, as the Staff points out, is with the "personal quality of the information in the file," *Wine Hobby U.S.A. v. I.R.S.*, 502 F.2d 133, 135 (3d Cir. 1974), and with "intimate details of a highly personal nature," *Getman v. N.L.R.B.*, 450 F.2d 670, 675 (D.C. Cir. 1971). The qualifications of an individual reactor operator for his job are rather different from that. They are not "intimate details of a personal nature," they are objective facts necessary to resolve an issue of central relevance to the restart proceeding. Those qualifications include, of course, the fact of whether the operator cheated on a licensing examination.

With respect to §2.790(a)(7), however, which deals with investigatory reports, it is clear that the exemption applies. The names of the operators involved in cheating first appear in NRC investigative reports, so the policy of protecting the privacy interests of individuals named in these reports is brought squarely into play. In order to decide whether to implement that policy in a particular case, a balancing test is required. 10 CFR §2.744 provides that the presiding officer may order production of an NRC record exempt under §2.790 if its "disclosure is necessary to a proper decision in the proceeding and the document, or the information therein is not reasonably obtainable from another source...". This balancing test in §2.744, which weighs the need for a proper decision against the interest in privacy, is similar to that used by the courts in cases under the Freedom of Information Act where this same language is at issue. *See Columbia Packing Co., Inc. v. Department of Agriculture*, 563 F.2d 495, 498 (1st Cir. 1977); *Wine Hobby, supra*, at 136; *Getman v. N.L.R.B., supra*, at 674. However, this balancing test is apparently not required under §2.744 if the "information ... is ... reasonably obtainable from another source ...". Here, of course, it is "reasonably obtainable" from the Licensee. This would appear to make the above inquiry moot unless the Special Master exercises his discretion so as to block the Licensee's disclosure. As indicated below, this discretion will not be so exercised, at least at this time. The result with respect to the Staff, therefore, is that it is unnecessary to decide which way the balance under §2.744 should tip with respect to information which is also obtainable from the Licensee.

Such a result might not be reached if it were decided that the protection enjoyed by the Staff's reports should be extended, as a matter of policy, to the Licensee. It could be argued that the policy underlying the exemption for investigatory reports is principally one of preserving the

government's power to investigate effectively. If identities of persons mentioned in raw investigatory data are released, persons could be inhibited from speaking candidly to investigators. This power might well be undermined if the same information contained in the government's reports could be obtained directly from the Licensee through routine discovery. However, the fact that Congress did not choose to make the Freedom of Information Act or its exemptions applicable to private entities weakens such an argument considerably. Further, the NRC staff in this case has not requested that the exemption be extended to the Licensee. Finally, the language of §2.744, quoted above, appears to view disclosure of information by the Licensee as a clear alternative to disclosure by the NRC Staff. The result is that no basis appears *in law* for extending any of the concepts peculiar to the Freedom of Information Act to the Licensee. The only basis could lie in the Special Master's discretion as discussed below.

There remains the question of information which may be available only from the Staff's investigatory records. In this case, those records contain the identities of persons who have provided information relative to cheating. These persons will be called as witnesses. They may give testimony which describes acts or words which amount to cheating by others, or which reflects upon management's possible implication in the cheating. Such testimony is very likely to be contradicted by other testimony. It is obvious that whatever facts emerge from this conflicting testimony will be important to the question of operator competence at TMI-1, and of great interest to the community surrounding the reactor. The policy in favor of public hearings is designed to avoid having testimony such as this received *in camera*. Absent a far stronger showing in favor of confidentiality than the Staff has made so far, the community's right to have these matters aired publicly means that the balance under 10 CFR §2.744 must be struck in favor of public disclosure. It follows that there is no *legal* right on the part of the Staff to hold these identities confidential.

C. With respect to rights asserted by private individuals.

Counsel for three persons who have been involved in cheating incidents entered appearances. They argued that their clients' names should be held confidential. However, they cited no persuasive authority for the proposition that their clients had any individual rights against either the Staff or the Licensee. Instead, they cited evidence that the intense feeling in the community, where all the individuals still reside, may result in harm to the individuals and their families if identities are disclosed. They indicated that this fact should be taken into account by the Special Master in the exercise of his discretion.

In the recent decision of *Chrysler Corporation v. Brown, supra*, the Supreme Court of the United States decided that individuals have no

private right of action under the Freedom of Information Act to enjoin disclosure of documents by a governmental agency. This decision would be relevant to a decision to disclose by the NRC Staff. However, in this case the Licensee stands ready to disclose, and no authority whatever has been cited for the proposition that private individuals have a right against the Licensee.

IV. Confidentiality as a matter of discretion

Under 10 CFR §2.718, a presiding officer has all powers necessary to conduct a fair and impartial hearing. Under 10 CFR §2.722, a Special Master must be assumed to have these same powers with respect to those matters which the Master has been appointed to hear. From this it follows that a Special Master has the power to hold information confidential if to do so would increase the likelihood of a fair and impartial hearing. In this case, it appears that confidentiality would have that effect to the extent that it increases the likelihood of compiling a full and accurate evidentiary record. If such a record were made more likely, for example, because witnesses accused of wrongdoing would be more cooperative under confidentiality, then it might be proper to exercise discretion to facilitate such cooperation. Also, granting confidentiality might advance the policy underlying the exemption for investigatory reports, as explained above. However, these benefits of confidentiality may be possible only at the cost of placing practical burdens on other parties, and at the cost of subordinating the general policy, contained in 10 CFR §2.751, of having NRC hearings be public. A weighing of these considerations determines whether discretion should be exercised, and to what extent.

The information sought from the Staff's investigatory reports can be divided into two types. First is the identity of those who cheated. Second is the manner in which they cheated, the extent to which they cheated, their knowledge of cheating by others, their knowledge of management's attitude toward cheating, and their knowledge of the extent to which the integrity of the examination process could have been or was in fact compromised by other devices, such as coaching, or knowledge of questions in advance, which would permit an unqualified candidate to become licensed. It is possible that the second type of information could be explored without going into the first. It is also possible that it could not be. The persons involved in cheating will be called as witnesses. Other persons called as witnesses will be asked about the persons involved in cheating. Both TMIA and Mr. and Mrs. Aamodt assert that disclosure is necessary. TMIA contends that it would be confusing, and perhaps impossible, to develop a factual record on the cheating without referring to specific individuals by name during questioning of the witnesses. There is also the public interest

in open hearings. At this time it is difficult to predict what, if any, arrangements for confidentiality will be feasible. It is, however, clear now that testimony by those involved in cheating, and about those involved in cheating, will be of vital importance to issues in the reopened proceeding, and it is clear that all litigants have the right to participate effectively in exploring this testimony. Any claim of confidentiality which conflicts with this right must give way. Since it is not possible now to say with confidence whether it will eventually be feasible to reconcile confidentiality with litigants' rights and the public interest in open hearings, it is imprudent to exercise discretion to prevent disclosure. This is true even though it still appears that a reasonable accommodation may be possible through *in camera* proceedings and protective orders.

V. Ruling

It is the ruling of the Special Master that there is no right, on behalf of the individuals involved in cheating incidents, the Licensee, or the NRC Staff, to prevent the disclosure of the identities of these individuals during the hearing process.

VI. Effectiveness of this ruling

This Order refusing to grant confidentiality is immediately appealable to the Atomic Safety and Licensing Board (Tr. 23,120). A party may appeal this Order within seven (7) days after its service by filing a notice of appeal and a supporting brief. Any other party may file a brief in support of or in opposition to the appeal within seven (7) days after the appeal. During pendency of any appeal, and until further notice, confidentiality shall be maintained by use of the lettering system, referred to above, or by such other order of the Special Master as shall become necessary.

IT IS SO ORDERED.

Gary L. Milhollin
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 22nd day of October, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Kenneth A. McCollom
Dr. Richard F. Cole

In the Matter of

Docket Nos. 50-445-OL
50-446-OL

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

October 23, 1981

The Licensing Board in an operating license proceeding declines to defer consideration of contentions relating to financial qualifications. Although the Commission is considering adopting a new regulation related to financial qualifications review, the notice of proposed rulemaking indicates that only when final is the rule to be applied to ongoing proceedings.

FINANCIAL QUALIFICATIONS: APPLICABLE STANDARD

Although a rulemaking concerning review of financial qualifications is pending, hearings on contentions concerning financial qualifications may go forward when the contentions were previously admitted. The intention of the Commission, shown by the notice of proposed rulemaking, is that proceedings with financial qualifications contentions continue. (46 *Fed. Reg.* 41786.)

RULES OF PRACTICE: CONTENTIONS

When a contention is admitted before the issue in contention becomes the subject of a general rulemaking by the Commission, the Commission's intention, as shown by the notice of proposed rulemaking, determines whether consideration of that contention should be deferred. *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station,

Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974).

MEMORANDUM AND ORDER
Denial of Motions to Defer Considerations
of Contentions 22, 24 and 25

By the Board's Scheduling Order entered July 23, 1981, an evidentiary hearing on Contentions 9, 22, 24, 25 and Board Question No. 2 was scheduled to commence December 2, 1981. This hearing schedule was confirmed by our duly published Notice of Evidentiary Hearing and Prehearing Conference entered September 17, 1981 (46 *Fed. Reg.* 47033-34).

On October 19, 1981, the Applicants and CASE filed a joint motion to defer consideration of Contention 25, concerning Applicants' financial qualifications to operate Comanche Peak. The basis for the motion was the Commission's proposed rule concerning requirements for financial qualifications review, published in the *Federal Register* August 18, 1981.¹ That notice stated that the Commission was considering amending its financial qualifications review regulations:

- "(1) To eliminate entirely these requirements for construction permit applicants; and either
- (2)(i) To also eliminate entirely these requirements for operating license applicants; or
- (2)(ii) To retain these requirements for operating license applicants to the extent they require submission of information concerning the costs of permanently shutting down the facility and maintaining it in a safe condition (i.e., decommissioning costs)."

The comment period for this proposed rule was stated to expire October 19, 1981.

This proposed rulemaking results from a directive in *Seabrook*² that the Staff initiate a rulemaking proceeding to reevaluate the financial qualifications issue. The Commission thereupon published a *Federal Register* notice of its proposed study on May 25, 1978, and requested comments from interested persons.³ On August 8, 1981, the Commission stated in its notice

¹46 *Fed. Reg.* 41786-91.

² Public Service Company of New Hampshire, et al. (*Seabrook Station, Units 1 and 2*), CLI-78-1, 7 NRC 1, 20 (1978).

³43 *Fed. Reg.* 22373.

of proposed rule:

"The Commission has tentatively concluded that the present financial qualifications review can appropriately be eliminated for electric utility applicants, which can be presumed to be able to meet the financial demands of constructing and operating nuclear power plants. As an alternative to entirely eliminating the present financial qualification review, the Commission is considering retaining, at least as an interim rule, that portion of the current operating license review related to financing the permanent shutdown and maintenance of the facility in a safe condition." (46 *Fed. Reg.* at 41788)

As the Applicants state, it was held in *Douglas Point*⁴ that "the *Vermont Yankee* line of cases stands for the proposition that licensing boards should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission." However, it should also be observed that *Douglas Point* refers to the acceptance of contentions by licensing boards. It does not necessarily or automatically apply to contentions or issues which have been admitted and remain pending for a long period of time, and which are the subject of imminent consideration at a scheduled evidentiary hearing. Under those circumstances, it is necessary to determine the intention of the Commission itself, which has plenary power over our proceedings.

The Appeal Board further stated in *Douglas Point* that regulatory agencies may (and many do) decide so-called generic issues on a case-by-case basis. The Supreme Court decisions it cited teach that "the choice made between proceeding by general rule or by individual, ad hoc litigation is one that lies primarily within the informed discretion of the administrative agency."⁵

The issues involved in *Douglas Point* and that line of cases⁶ concerned the proper evaluation of the environmental consequences of the uranium fuel cycle. As stated in *Shoreham*, they involved "matters which the Commission has *explicitly reserved* for its own consideration in the exercise of its rulemaking authority," citing 37 *Fed. Reg.* 24292 and 38 *Fed. Reg.* 49, 50⁷ (Emphasis supplied). Similarly, in its notice of Proposed

⁴ Potomac Electric Power Company (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 85 (1974).

⁵ *Douglas Point*, *supra*, 8 AEC at 84.

⁶ Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-56, 4 AEC 930 (1972); Long Island Lighting Company (Shoreham Nuclear Power Station), ALAB-99, 6 AEC 53 (1973).

⁷ 6 AEC at 57.

Rulemaking on the Storage and Disposal of Nuclear Waste, the Commission explicitly stated that "during this proceeding the issues being considered in the rulemaking should not be addressed in individual licensing proceedings ... However, all licensing proceedings now underway will be subject to whatever final determinations are reached in this proceeding."⁸

The instant proposed rule regarding financial qualifications review does not purport presently to bar consideration of these matters in ongoing licensing board adjudicatory proceedings. The notice of rulemaking states:

"If the Commission decides to retain the financial qualifications requirements relating to decommissioning costs, the rule will serve as an interim rule until completion of a future rulemaking on decommissioning that will consider the costs of decommissioning and the necessary financial assurances."⁹

The notice further provides:

"As an alternative to entirely eliminating the present financial qualification review, the Commission is considering retaining, at least as an interim rule, that portion of the current operating license review related to financing the permanent shutdown and maintenance of the facility in a safe condition."¹⁰

Finally, with regard to the proposed application of the final rule, it was stated that "the Commission notes that the final rule, when effective, will be applied to ongoing licensing proceedings now pending and to issues or contentions therein."¹¹ Unlike *Douglas Point* and its progeny, the Commission has expressly recognized that there are ongoing proceedings which will continue to have pending issues and contentions relating to financial qualifications, which will continue until there is a final rule which, "when effective, will be applied" to such ongoing proceedings. Accordingly, there is no need to defer consideration of Contention 25, and the joint motion of applicants and CASE will be denied. In view of the pending prehearing and trial schedule, which is reconfirmed, the movants "request expedited treatment of this motion" (page 7). The Board has authority to extend or shorten time limits for good cause (10 CFR §2.711). Accordingly, the Board considers it appropriate to give the requested expedited treatment of this motion, and also of two motions to defer filed by CASE on October 17, 1981, discussed below. To that end, all parties and counsel were

⁸ 44 *Fed. Reg.* 61372, at 61373 (October 25, 1979).

⁹ 48 *Fed. Reg.* 41786 (August 18, 1981).

¹⁰ *Id.*, at 41788.

¹¹ *Id.*, at 41789.

notified by telephone this date (October 23, 1981) that the Board had denied all motions to defer.

In order to give any party who so desires an opportunity to state its views on these motions, the Board will permit such matters to be brought to its attention by seasonably filed motions for reconsideration which show good cause therefor.

CASE has filed motions to defer consideration of Contentions 22 and 24. These motions are also denied for the reasons discussed above. It is important for all contested operating license proceedings to go to evidentiary hearings promptly and expeditiously. It may be that all of the selected contentions set for hearing on December 2, 1981 cannot be fully completed at that time, but we can certainly start to receive evidence thereon. The admitted contentions have been pending since June 16, 1980, and are well known to all parties. Orders concerning discovery were entered by the Board on December 5 and 19, 1980, and on April 13 (2), May 21, July 20, July 22, July 23, July 24, July 28, July 29 (2), July 30 (2), August 3, August 4, August 20, August 21 and September 25, 1981. It is high time that this proceeding advance beyond the discovery and motion stage to at least the commencement of an evidentiary hearing. An additional Schedule will be entered shortly, taking cognizance of the issuance of SSER's and establishing discovery and motion deadlines leading to the commencement of the final evidentiary hearing in mid-February, 1982.

There is one final matter to be considered regarding CASE's motion in connection with Contention 24. CASE stated that if its motion to defer is denied, it "in the alternative moves that the Board grant CASE voluntary withdrawal from Contention 24 (CASE Motion, pp. 4-5). That motion is granted and CASE withdraws from Contention 24. CASE's further motion, "that the Board adopt the issues covered by Contention 24 *sua sponte*," is denied. No adequate grounds are shown for such a motion, and none is apparent to the Board.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 23rd day of October, 1981.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Marshall E. Miller, Chairman
Dr. Richard F. Cole
Dr. A. Dixon Callihan

In the Matter of

**Docket Nos. STN 50-454-OLA
50-455-OLA**

COMMONWEALTH EDISON COMPANY
(Byron Station, Units 1 and 2)

October 27, 1981

In considering the applicant's motion for sanctions because of the intervenor's failure or refusal to answer interrogatories, the Board found nothing to excuse or condone the willful failure to provide responsive answers to interrogatories and the intervenor was consequently dismissed as a party.

RULES OF PRACTICE: DISCOVERY (INTERROGATORIES)

An applicant is entitled to prompt answers to interrogatories inquiring into the factual bases for contentions and evidentiary support for them, as intervenors are not permitted to make skeletal contentions and keep the bases for them secret.

RULES OF PRACTICE: DISCOVERY (SANCTIONS)

The willful failure or refusal of an intervening party to answer interrogatories and its unexcused failure to comply with a Licensing Board's orders to do so, warrant the imposition of sanctions (10 CFR §§2.707, 2.718, 2.740).

RULES OF PRACTICE: DISCOVERY (SANCTIONS)

Where a party's derelictions of duty concerning the furnishing of ordered discovery were part of a pattern of behaviour rather than isolated incidents, such conduct resulted in the striking of all of its contentions (114) and its dismissal as a party (Commission's "Statement of Policy on Conduct of Licensing Proceedings" [CLI-81-8, 13 NRC 452, 454 (1981)]).

MEMORANDUM AND ORDER

The Commonwealth Edison Company (Applicant) on October 2, 1981, filed a motion for the entry of an order imposing sanctions on the Intervenor Rockford League of Women Voters (League) for its continuing failure or refusal to answer interrogatories. A response to this motion was filed by the League October 13, 1981. The League also filed a motion for sanctions against the Applicant on the same date. The Applicant's opposition to the latter motion was filed October 22, 1981. The Staff has indicated that it does not intend to take a position with respect to these motions. For the reasons set forth *infra*, the Applicant's motion for sanctions will be granted, and the League's motion will be denied.

The League filed its revised contentions on March 10, 1980, consisting of 146 numbered contentions. Many of these contentions were vigorously opposed by the Applicant and the Staff, but the pleading rules were liberally construed by the Board and 114 contentions were admitted as pleading issues.¹ However, it was specifically stated that "Of course, all admitted contentions are subject to motions for summary disposition after the completion of discovery, if 'there is no genuine issue to be heard.'² And our Order further provided that "discovery shall commence forthwith upon all issues included in the admitted contentions."³

The Applicant served written interrogatories on the League on July 8, 1981. These interrogatories inquired into the factual bases for the conten-

¹ Memorandum and Order entered December 19, 1980, LBP-80-30, 12 NRC 683.

² *Ibid.*, at 696.

³ *Ibid.*, at 698.

tions, any evidentiary support for them, and the identity of witnesses and the substance of their expected testimony.⁴ The use of interrogatories such as these has been approved by the Appeal Board as a common and reasonable method of discovering the evidentiary and factual bases for contentions.⁵ This is especially true where intervenors have filed a very large number of contentions.

The Appeal Board in *Susquehanna* held that "it is not proper for a party to ignore a discovery request,"⁶ and quoted with approval the Licensing Board's statement that:

"The Applicants in particular carry an unrelieved burden of proof in Commission proceedings. Unless they can effectively inquire into the position of the intervenors, discharging that burden may be impossible. To permit a party to make skeletal contentions, keep the bases for them secret, then require its adversaries to meet any conceivable thrust at hearing would be patently unfair, and inconsistent with a sound record."⁷

Answers to the Applicant's interrogatories were due under our rules by July 27, 1981 (10 CFR §2.740(b)). No answers were filed by that date, so on July 30, 1981 the Applicant filed a motion to compel discovery by the League. On August 5, 1981, the League by one of its attorneys⁸ filed objections to these interrogatories, which in substance argued that they were "premature" but gave no factual or other bases for the contentions.

On August 7, 1981, the League's attorneys filed a response to the Applicant's motion to compel discovery. This response asserted that lead counsel for the League (Myron M. Cherry, Esq.) was engaged full-time,

⁴ "Interrogatories: 1. With respect to each Contention advanced by the League which has been admitted by the Atomic Safety and Licensing Board in the above-captioned proceeding, list the following:

- a. A concise statement of the facts supporting each Contention together with references to the specific sources and documents and portions thereof which have been or will be relied upon to establish such facts;
 - b. the identity of each person expected to be called as a witness at the hearing;
 - c. the subject matter on which the witness is expected to testify;
 - d. the substance of the witness's testimony.
2. With respect to each witness identified in the League's response to interrogatory 1 above, identify each document which the witness will rely upon in whole or in part in the preparation of his testimony or in the development of his position.
 3. With respect to each witness identified in the League's response to Interrogatory 1 above, identify the witness's qualifications to testify on the subject matter on which the witness will testify.
 4. Identify all persons who participated in the preparation of the answers, or any portion thereof, to these Interrogatories."

⁵ Pennsylvania Power and Light Company and Allegheny Electric Cooperative, Inc. (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 333-35, 340 (1980).

⁶ *Ibid.*, at 322.

⁷ *Ibid.*, at 338.

⁸ Peter Flynn, Esq., of the firm of Cherry and Flynn, Chicago, Illinois.

and his partner (Peter Flynn, Esq.) virtually full-time, in a discovery and pretrial schedule in connection with a preliminary injunction hearing in a circuit court in Illinois. The League's attorneys also opined that "the great burden of time and expense entailed in attempting to respond to those Interrogatories at this juncture is grossly disproportionate to the minimal benefit (if any) which might be gleaned from responses...." (Response of League, p. 2). It further stated that counsel should have an opportunity for consultation with opposing counsel to resolve differences concerning discovery (*Id.*, p. 3).

The Board considered the League's objections to these interrogatories, and it entered an Order on August 18, 1981 that expressly overruled such objections, and rejected counsel's excuses for failing to file timely discovery responses.⁹ That Order provided:

"It is sufficient for an intervenor at the pleading stage merely to state his reasons (*i.e.*, the basis) for contentions, and he is not required to plead evidence or to establish that the assertions are well-founded in fact. The Applicant is entitled to obtain discovery concerning the bases of these contentions, since a good deal of information is already available to the League from the FSAR and other documents. The League must furnish such information promptly, and it cannot delay until the SER or other documents are filed. The factual or evidentiary bases for such contentions may in part reflect such later information, but discovery may precede such filings, subject to later supplementation....

"The original Order entered December 19, 1980 directed that discovery should commence immediately upon all issues included in the admitted contentions. All parties are directed to proceed expeditiously with discovery and other trial preparation." (Footnotes omitted) (*Ibid.*, 369-370).

Our Order of August 18 further stated:

"To clarify and expedite further discovery in this proceeding, the board adopts the following measures:

1. All parties are directed to confer directly with each other regarding alleged deficiencies in discovery before resorting to motions involving the Board. To this end, voluntary discovery and disclosure are highly encouraged. All motions involving discovery controversies shall describe fully the direct efforts of the parties to resolve such disputes themselves." (*Ibid.*, 371- 372).

⁹LBP-81-30-A, 14 NRC 364 (1981).

The League's prematurity argument and its excuses for ignoring interrogatories because its attorneys were busy, were dealt with as follows:

"The League's objections based largely upon the argument that the four interrogatories are premature, are denied. While more information may be available when the SER is filed, there is presently available a large amount of documentary and other information. The movant is entitled to full and responsive answers based upon the presently known status of these matters, and to additional information when it becomes available.

"The League's response to the motion to compel discovery is likewise overruled. The involvement of a party's lawyers in litigation or other professional business does not excuse noncompliance with nor extend deadlines for compliance with our rules of practice. The League's response is also a bit too casual about the length of time available for trial preparations leading to the commencement of evidentiary hearings. A schedule will be issued soon by the Board. However, a large number of somewhat complex contentions have been filed by the League, and the Applicant is not required to delay discovery or trial preparation.

"The last point relied on by the League's response concerns the request for consultation on discovery between or among the parties. This request is covered by paragraph 1 of the discovery rules set forth *supra*. The parties will be allowed a reasonable period of time to confer. However, responsive answers shall be filed to these and other interrogatories promptly, and discovery shall be conducted expeditiously." (*Ibid.*, 373-374):

It was therefore ordered that:

"The Applicant's motion to compel discovery by the League is granted, subject to a prompt conference between the parties." (*Id.* 374).

Following entry of the Board's specific directives in its Order of August 18, the League neither requested nor furnished any discovery in this proceeding. However, counsel for the Applicant pursuant to our directives contacted the League's counsel by telephone on August 25, 1981 concerning interrogatory answers. Similar conversations took place on September 3, September 10 and September 15, 1981, but no responses to Applicant's interrogatories were furnished by the League.

Letters from Applicant's counsel to the League's counsel, dated September 4, 1981 and September 16, 1981, are attached to this Order marked

Exhibits A and B, respectively, and are incorporated herein by reference. These letters and the transactions which they reflect clearly establish that the League by its counsel has willfully failed and refused to obey the Board's Order of August 18, 1981. such conduct will not be permitted.

The Board has examined the response filed by the league on October 13, 1981 to the Applicant's motion for sanctions, together with attached Exhibits A-D. We find nothing in these discursive documents to excuse or condone the League's total failure to provide responsive answers to interrogatories. The disputes between counsel concerning depositions and other discovery, as shown by the League's Exhibits A, C and D, do not relate to the instant NRC proceeding. As they show on their face, they involve some pending Illinois Commerce Commission proceeding. The Board does not intend to become involved in some collateral litigation which is not shown to be relevant to this proceeding. As the Exhibits show, copies of the letters reflecting some disputes between counsel were all mailed to "Ms. Wanda Kamphius, Hearing Examiner." None was copied to this Board, and properly so.

The Leagues response also describes at length the circuit court litigation referred to *supra*, as well as the vacations and personal problems of some of counsel's partners. Our Order of August 18, 1981 made it clear that the involvement of counsel in other litigation or business would not excuse noncompliance with our rules of practice. The lengthy period of the League's deliberate failure and refusal to obey our orders and provide discovery, makes this attempted excuse unacceptable.

A large portion of the League's response is devoted to a wholly irrelevant telephone conference held between the Board and all of the parties except counsel for the League on October 2, 1981. At the time the conference call was arranged, the Board was informed that Mr. Cherry as well as all other counsel or parties had agreed to participate. Mr. Cherry now says that "events overtook" him after he or his office was informed that a conference call would be made.¹⁰ There was also apparently some confusion whether the call referred to *Midland* or *Byron*, but in any event counsel's schedule would have prevented his participation. Counsel then objects "strenuously" to a so-called "*ex parte*" conference call.¹¹

This whole prolix objection to the conference call is a nonissue which in no way exculpates the League or its counsel from derelictions of duty concerning discovery. Fortunately, the Board requested that the telephone conference be covered by a court reporter, which was complied with. The transcript of the conference shows that Applicant's counsel informed the

¹⁰ Response of League, Exhibit B (Letter from Mr. Cherry to the Chairman of the Board, dated October 5, 1981).

¹¹ *Id.*

Board that Mr. Cherry had been contacted directly regarding the call (Tr. 5-6). Nevertheless, the Board did not go into the merits of the Applicant's complaints about the League's failure to answer interrogatories, but directed that a written motion be filed promptly because the scheduled dates are important in this proceeding (Tr. 23). We add that Mr. Cherry's nonparticipation in the conference does not render it *ex parte*. He apparently had some notice in advance of the call. One party cannot exercise a veto by absenting himself from conferences with the Board, whether because he and his office are too busy or for some other reason. No unilateral definition of *ex parte* encompasses such a result.

It is unnecessary to comment upon the League's deprecatory language regarding the schedule in this proceeding. Such pejorative comments as "hurry up and wait" (Response, p. 6), or criticizing the November 1, 1981 cutoff date for discovery (p. 4, n. 1), or false insinuations of "the instability of arbitrary cutoffs applicable in effect only to the Intervenor's (p. 6), do not merit a serious response. The dilatory conduct of the League and its counsel is the issue, and such "red herring" tactics will not obscure that issue from consideration.

The facts discussed *supra* establish that the League and its counsel have deliberately and willfully refused to comply with the Board's Order of August 18, 1981, and have not answered interrogatories or furnished ordered discovery for a long period of time. The nature of the pretexts and excuses offered for such noncompliance demonstrate that such conduct is not an isolated incident, but rather is part of a pattern of behavior which seriously impedes our proceedings and impairs the integrity of our orders. Sanctions are therefore appropriate both to give all parties due process in this proceeding, and to deter similar conduct by other parties in the future.

The Commission has indicated that the presiding officer has the necessary authority to "impose appropriate sanctions on all parties who do not fulfill their responsibilities as participants."¹² In a recent policy statement, the Commission has discussed the spectrum of sanctions available to

¹²Commission's Statement of Consideration, 37 *Fed. Reg.* 15127-28 (July 28, 1972).

licensing boards to assist in the management of proceedings, including the dismissal of a party.¹³ Unjustified refusals or failures to comply with discovery orders have resulted in the dismissal of parties or contentions.¹⁴ Under all of the circumstances shown in this proceeding, the Board finds that the League should have all of its contentions stricken, and it should be dismissed as an Intervening party (10 CFR §§2.707, 2.718, 2.740).

The motion for sanctions filed by the League on October 13, 1981, is devoid of merit and borders on the frivolous. Such motion will be denied.

ORDER

For all the foregoing reasons and based upon a consideration of the entire record, it is this 27th day of October, 1981

ORDERED

(1) That the Applicant's motion for sanctions is granted, and the Intervenor Rockford League of Women Voters is dismissed as a party.

(2) The Rockford League of Women Voter's motion for sanctions against the Applicant is denied.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

¹³ "Statement of Policy on Conduct of Licensing Proceedings", May 20, 1981, CLI-81-8, 13 NRC 452.

¹⁴ Pennsylvania Power and Light Company and Allegheny Electric Cooperative, Inc. (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 322, 339 (1980). See Metropolitan Edison Company (Three Mile Island Station, Unit No. 1), LBP-80-17, 11 NRC 893 (1980); Northern States Power Company, et al. (Tyron Energy Park, Unit 1), LBP-77-37, 5 NRC 1298, 1301 (1977); Offshore Power Systems (Manufacturing License for Floating Nuclear Power Plants), LBP-75-67, 2 NRC 813, 817 (1975); Public Service Electric & Gas Company (Atlantic Nuclear Generating Station, Units 1 and 2), LBP-75-62, 2 NRC 702, 705-6 (1975). See also National Hockey League v. Metropolitan Hockey Club, 427 U.S. 639, 640 (1976); Mertens v. Hummel, 587 F.2d 862 (7th Cir. 1978); Kelley v. United States, 338 F.2d 328 (1st Cir. 1964).

**ISHAM, LINCOLN & BEALE
COUNSELORS AT LAW
WASHINGTON OFFICE
1120 CONNECTICUT AVENUE, N.W.
SUITE 325
WASHINGTON, D.C. 20036
202-833-9730
September 4, 1981**

BY MESSENGER

Peter Flynn, Esq.
Cherry & Flynn
One IBM Plaza
Suite 4501
Chicago, Illinois 60611

Re:

In the matter of Commonwealth Edison Company (Byron Station, Units 1 and 2), Docket Nos. STN 50-454-OL, STN 50-455-OL.

Dear Mr. Flynn:

On August 25, we spoke briefly with regard to the Licensing Board's order of August 18 requesting that the parties discuss the League's response to Commonwealth Edison Company's interrogatories. At the time, you indicated that you were reviewing the League's contentions for purposes of determining in what time period you expected to be in a position to answer the interrogatories. You also stated you would advise me before the end of the week, that is, before August 28, as to an expected date for your responses. At the time, I suggested the possibility of some consolidation of contentions, inasmuch as the contentions now admitted by the Board contain a significant level of duplication and overlap. Yesterday, we spoke again to discuss discovery. You indicated that your review of the contentions still continues and you are not yet in a position to state when answers to interrogatories can be expected. You also indicated that you agreed with me that some consolidation of issues might be possible. Inasmuch as we are meeting on Thursday, September 10, to resolve discovery differences in a parallel case now pending before the Illinois Commerce Commission, it was agreed we would raise the question of responses to discovery in the NRC licensing case at the same time.

I would hope that by the September 10 meeting you will have made some progress toward responding to our interrogatories, as you have now had them since July 8, 1981. I enclose herewith a proposed method of

consolidating contentions. I would ask that you review these to the extent that time permits and be prepared, if possible, to discuss the enclosed proposal at our meeting on September 10.

Sincerely,

PMM/js

Paul M. Murphy

Enclosure

One of the Attorneys for
Commonwealth Edison Company

cc: Steven C. Goldberg, Esq.

September 16, 1981

Mr. Myron Cherry
Cherry & Flynn
One IBM Plaza
Suite 4501
Chicago, Illinois 60611

Re:

Commonwealth Edison Company (Byron Station, Units 1 and 2)
Docket Nos. 50-454 and 50-455

Dear Mr. Cherry:

This is to confirm our conversation of yesterday regarding pending discovery initiated by Commonwealth Edison Company and directed at the Rockford League of Women Voters and at DAARE/SAFE. As you recall, on July 8, 1981, Edison directed interrogatories to be answered by the League and by DAARE/SAFE. On August 18, 1981, the Licensing Board entered an Order directing DAARE/SAFE to answer the interrogatories forthwith, and directing Edison and the League to consult regarding responses to discovery.

I spoke to your partner on August 25 and September 3, and with you on September 10th and yesterday in an effort to obtain a date certain for answers to our interrogatories, as there did not appear to be any other matter to discuss in view of the Board's overruling your objections. Yesterday you agreed to provide answers on behalf of the League and on behalf of DAARE/SAFE by October 1, 1981. This date is by no means satisfactory, given that the interrogatories were served on you on July 8, 1981, and that the Licensing Board overruled your objections to the interrogatories on August 18, 1981. However, in view of your representation made on September 10, 1981 that as of that date nothing had been done towards answering the interrogatories, it does not now seem that an earlier date is achievable. We look forward to receipt of answers on behalf of the League and DAARE/SAFE by October 1, 1981.

Sincerely,

Paul M. Murphy
Attorneys for
Commonwealth Edison Company

PMM/msb
cc: Entire Service List

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James L. Kelley, Chairman
Dr. Peter A. Morris
Dr. Richard F. Foster

In the Matter of

Docket Nos. 50-254-OLA
50-265-OLA

COMMONWEALTH EDISON COMPANY
(Quad Cities Station, Units 1 and 2)

October 27, 1981

The Licensing Board held a prehearing conference and admitted as parties two petitioning organizations who satisfied the Commission's standing and valid contention requirements in this spent fuel pool expansion proceeding. The Board deferred ruling on one disputed contention and rejected two other disputed contentions.

NEPA: CONSIDERATION OF ALTERNATIVES

A Licensing Board has no litigation to explore alternatives under NEPA except upon a showing that the action in question will constitute a "major Commission action significantly affecting the quality of the human environment." This determination should not be made until the NRC Staff's environmental impact assessment is available.

**FINANCIAL QUALIFICATIONS: OPERATING LICENSE
AMENDMENTS**

Applicant for operating license amendments, such as an amendment authorizing expansion of a spent fuel pool, are not required to prove their financial ability to implement the amendment.

ORDER
(Reflecting Actions Taken
at Prehearing Conference)

A special prehearing conference pursuant to 10 CFR 2.751a was held at the Rock Island County Office Building in Rock Island, Illinois, on October 14, 1981. Representatives of the Applicant, the NRC Staff, and each of the organizations petitioning to intervene in this proceeding were present and participated. This Order reflects the major matters discussed and actions taken at the Conference.

Admission of Petitioning Organizations as Parties. Timely petitions to intervene were filed by Citizens for Safe Energy ("CSE") and Quad-City Alliance for Safe Energy and Survival ("QASES"). Subsequent discussions among the petitioners, the Applicant and the NRC Staff resolved some initial questions from the Applicant about standing, and a list of agreed-upon contentions was developed. Our independent application of the standing-plus-one-valid-contention test satisfies us that the petitions for intervention of these two organizations should be granted. CSE and QASES are admitted as parties. We will refer to them collectively as "the Intervenors."

A third organization, Older Americans for Elderly Rights ("OAER"), also petitioned for leave to intervene. However, the areas of interest indicated in their petition were too vague to qualify as contentions. Although reminded in our notice of the prehearing conference of their right to file further contentions, they chose not to do so. They were represented at the prehearing conference by Mr. Jack Smith, their Director, who indicated that OAER was no longer interested in participating as a party in this case. Tr. 14. The Chairman informed Mr. Smith that, under the circumstances, he could choose to withdraw the OAER petition, or the Board would deny it. Mr. Smith indicated his preference for a Board denial. Tr. 16. The OAER petition is denied.

Admitted Contentions. The parties have stipulated that a list of nine contentions — set forth in Appendix A to their joint "Stipulation of Issue and Contentions" of October 2, 1981 — "should be admitted for consideration as matters in controversy." Our independent review of these proposed contentions leads us to agree that these contentions should be admitted. Their admission is, of course, without prejudice to the possibility that one or more of them may later prove to be fit candidates for summary disposition under 10 CFR 2.749.

Disputed Contentions. The Intervenors' propose three additional contentions which the Applicant and the Staff oppose. Each contention and our ruling on its admissibility are set forth below.

Contention 2: The Licensees have not considered in sufficient detail the possible alternatives to the proposed expansion of spent fuel storage capacity. Specifically, Licensees have not considered preferable alternatives for managing the spent fuel during the remainder of the operating license for the Quad Cities Nuclear Station, namely, the possibilities of:

- a. shutting down the Quad Cities Nuclear Station once the racks presently installed in spent fuel pools are full, or
- b. reducing electrical output from the Quad Cities Nuclear Station in conjunction with either energy conservation and pricing alternatives which would reduce demand or increasing the use of underutilized fossil fuel plants to meet current demand.

Ruling. This Board is not responsible for considering broad energy alternatives in the abstract. Our job is to apply the Commission's rules and federal statutes applicable to the comparatively narrow proposition before us — whether the Applicant should be allowed to expand the capacity of the spent fuel pool at the Quad Cities facility.

In that context, any responsibility of ours to explore the alternatives outlined in this contention must flow from the National Environmental Policy Act ("NEPA") and implementing Commission regulations (10 CFR Part 51) which do require consideration of reasonably available alternatives through the vehicle of an environmental impact statement.¹ However, that requirement is only triggered where the action proposed will constitute a "major Commission action significantly affecting the quality of the human environment." 10 CFR 51.5(a)(11).

In a number of recent cases, intervenors have argued that proposed expansions of particular spent fuel pools would have a "significant effect" on the environment, thus requiring an environmental impact statement. See, e.g., *Public Service Electric and Gas Co.* (Salem Nuclear Generating Station), ALAB-650, 14 NRC 43 (1981); *Consumers Power Co.* (Big Rock Point), ALAB-636, 13 NRC 312 (1981); *Portland General Electric Co.* (Trojan Nuclear Plant), 9 NRC 263 (1979); *Northern States Power Co.* (Prairie Island Nuclear Generating Plant), 7 NRC 41 (1978).² In none of these cases was the requisite effect on the environment shown to exist. Nevertheless, the Appeal Board made it clear in *Big Rock Point* that, unless and until some generic determination can be made, these determinations must be made on a case-by-case basis. ALAB-636, 13 NRC 330, note 35.

In the present case, however, we do not have an explicit allegation of significant impact on the environment, let alone a substantial record

¹ The Atomic Energy Act contains no comparable "consideration of alternatives" requirement.

² We ask the Staff to make copies of these decisions available to the Intervenors.

showing of impact. In addition, we do not yet have the Staff's environmental analysis; Staff counsel stated that an environmental impact appraisal (EIA) will be prepared, but it apparently will not be available for some months. Tr. 29. In these circumstances, *Big Rock Point* provides explicit direction that the Board should:

await the preparation of the staff's environmental analysis ... It is unwise, if not improper, to decide without the record support provided by the staff's environmental review, whether a given action significantly affects the environment. *Id.* at 330.

Accordingly, we are deferring our ruling on proposed Contention 2 until after the Staff's EIA is available. At that time, if the Intervenor wish to pursue this contention (or perhaps a contention revised in light of the EIA), we will hear further argument and issue any necessary rulings.

Contention 7: The Licensees should be required to submit cost evaluations for handling, transportation and storage of the additional fuel which will be stored in the proposed racks for the remainder of the operating licenses for the Quad Cities Nuclear Station.

Ruling. This contention is disallowed. The financial qualifications of an applicant for a reactor construction permit are subject to scrutiny. See 10 CFR Part 50, Appendix C. However, no comparable requirement applies to an applicant for an amendment of the kind sought here. *Consumers Power Co.* (Big Rock Point Nuclear Plant) 11 NRC 117, 127 (1980).

This contention might possibly be viewed as something other than a "financial qualifications" contention. Thus, the costs of the proposed modifications might become relevant if we eventually become involved in a comparison of alternatives. However, as explained above, that would only happen upon a determination of significant environmental impact. Should such a determination be made following receipt of the Staff's EIA, contentions based upon it should be drafted on the basis of the record as then developed.

At the prehearing conference, the Intervenor sought to link this contention with "substantial hidden subsidies to the nuclear power industry" and with the availability of other storage techniques, such as a new storage pool, dry caisson storage, or air-cooled storage racks. Tr. 35-38. In the first place, the contentions as drafted would have to be stretched considerably to reach these topics. Even assuming that could be done, some health or safety relationship between these topics and the proposed modification would have to be established.

We fail to see how this could be done with respect to the "hidden subsidies" question. The costs and policy soundness of such things as the

Price-Anderson Act, decommissioning, and federal energy research programs are for the Congress, the Commission and State public utility commissions, not this Licensing Board.

As to the other proposed forms of storage, their availability could become relevant in this case should it appear that the Applicant's reracking proposal is not acceptably safe. But if the requisite safety showing is made, an applicant is free to choose among acceptable alternative approaches.

Contention 12: The proposed racks, as well as the Quad Cities Nuclear Station, are not adequately designed to withstand earthquakes because the Safe Shutdown Earthquake (SSE) and the Operating Basis Earthquake (OBE) which were established for the Quad Cities Nuclear Station are no longer appropriate in light of new information about possible earthquakes in the Quad Cities Area. Some earthquake scientists at the St. Louis University and the Midwest Research Institute feel that the Mississippi Valley is ripe for a major earthquake.

Ruling. This contention is disallowed. The NRC rule governing contentions, 10 CFR 2.714(b), requires that a petition include "... the bases for each contention set forth with reasonable specificity." "Bases" does not mean evidentiary proof, which is produced at the hearing. But it does contemplate a clear articulation of the theory of the contention, sufficient that the Applicant can make an intelligent response.

Earthquakes do not occur just anywhere; they occur only on active faults. It would probably be sufficient, for example, if a contention stated that the previously established safe shutdown earthquake for Quad Cities was inadequate because new information would show that an earthquake of greater magnitude was now expected on a particular fault. Or a somewhat more general formulation might suffice. But this contention merely refers, without any specificity, to "new information about possible earthquakes in the Quad Cities Area." That is not sufficiently specific.

Discovery. The various discovery techniques (see 10 CFR 2.740) are now available to the parties. Discovery shall be limited at this time, as the rule provides, to those contentions that have been admitted by the Board — i.e., the Appendix A contentions of the joint stipulation. The Board encourages the parties to engage in informal discovery, to show some restraint in the number of interrogatories, to forego hypertechnical objections to discovery, and to attempt to negotiate and resolve differences before bringing them to the Board.

Further Actions. It is not now possible to schedule any future actions. The Applicant has not completed its application and until that is done the Staff cannot complete its safety evaluation and EIA. When those docu-

ments are complete and served on the parties, it will be time to consider dates for closing discovery and beginning a hearing. In the meantime, should any party believe that some action by the Board is necessary, they are, of course, free to file an appropriate motion. The device of a telephone conference is also available.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

**Peter A. Morris
ADMINISTRATIVE JUDGE**

**Richard F. Foster
ADMINISTRATIVE JUDGE**

**James L. Kelley, Chairman
ADMINISTRATIVE JUDGE**

**Dated at Bethesda, Maryland
this 27th day of October, 1981**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. James C. Lamb
Mr. Ernest E. Hill

In the Matter of

Docket No. STN 50-498 OL
STN 50-499 OL
(Operating License)

HOUSTON LIGHTING AND POWER
COMPANY, *et al.*
(South Texas Project, Units 1 and 2)

October 30, 1981

The Licensing Board schedules an evidentiary hearing to consider the means by which the Applicants plan to maintain quality with respect to certain near-term safety-related construction activities, in light of (1) the transition of design-engineering and construction-management responsibilities, and possibly construction responsibilities, to a new contractor; and (2) deficiencies in engineering pointed out in an independent consultant's report sponsored by the Applicants. The Board also inquires concerning the means by which the NRC Staff plans to monitor the Applicants' commitments to maintain quality in regard to the specified construction activities. The Board further schedules a prehearing conference.

LICENSING BOARDS: JURISDICTION

The decision whether to approve a plan for construction during the period in which certain design engineering and construction management, and possibly construction, responsibilities are being transferred from one contractor to another is initially within the province of the NRC Staff. But because of the safety significance of the work to be performed, and its clear bearing on whether, or on what terms, a project should be licensed, and on the resolution of certain existing contentions, consideration of the adequacy of, and controls to be exercised by, the Applicants and NRC Staff over such work falls well within the jurisdiction of the Licensing

Board. Cf. 10 C.F.R. §2.717(b).

OPERATING LICENSE HEARING: *SUA SPONTE* ISSUES

When a Licensing Board in an operating license proceeding considers issues which might be deemed to be raised *sua sponte* by the Board, it should transmit copies of the Order raising such issues to the Commission and General Counsel, in accordance with the Secretary's memorandum of June 30, 1981.

MEMORANDUM AND ORDER (Scheduling Prehearing Conference and Evidentiary Hearing on Transition Period Construction Activities)

By letter dated October 16, 1981, from the Executive Vice President of Houston Lighting and Power Co. to the Director, Region IV, NRC, the Applicants requested NRC Staff concurrence in a plan for continuing safety-related work during the transition period in which certain of the project's engineering and construction management responsibilities are to be shifted from Brown & Root, Inc. (B&R) to Bechtel Corp.¹ The Board had been preliminarily advised of the proposed organizational changes by the Applicants' letter of September 24, 1981. In a telephone conference call on October 7, 1981, however, the Board also was apprised that the extent of the transition from B&R to Bechtel had not been determined. Specifically, we were informed that it was possible that construction as well as design engineering and construction management responsibilities would also be transferred from B&R to Bechtel. See Memorandum and Order (Concerning Changes in Schedule for Hearings), dated October 8, 1981, at p. 2. According to the October 16, 1981 letter, the transition period during which the specified safety activities are to be undertaken will extend for about 4 months. Depending upon the timing of NRC Staff review of the transition period activities, those activities could be completed as early as mid-February, 1982.

The decision whether to approve the plan for transition period construction activities, as requested in the Applicants' letter of October 16, 1981, is initially within the province of the NRC Staff. But because of the safety

¹ A copy of this letter was served on the Licensing Board and parties to this proceeding. As used in this Memorandum and Order, transition period refers to the period during which the work items spelled out in the attachments to the October 16 letter are to be carried out and is not intended to encompass the possibly different time period in which the entire transition from B&R to Bechtel is to occur.

significance of the work to be performed, the adequacy of the plan for performing this work has a clear bearing on whether, or on what terms, the South Texas Project should be licensed. Cf. 10 C.F.R. §2.717(b). The adequacy of that plan also may have a significant impact on the resolution of some of the contentions and other issues which are now before this Board.

For example, transition work is to be performed in particular areas with respect to which testimony has already been presented in this proceeding, such as containment dome concrete, containment shell concrete, and certain ASME and AWS welds. These items, among others, were the subject of comments and criticism in the report prepared by Quadrex Corporation ("Design Review of Brown and Root Engineering Work for the South Texas Project," May, 1981), transmitted to the Board on September 28, 1981.

Because of the safety significance on the transition work and the probability that it will have a bearing on the findings and conclusions we must reach in this operating license proceeding, we wish to be apprised of the means by which the Applicants (including their contractors Bechtel and, if applicable, B&R) plan to maintain quality with respect to the construction of safety-related structures and equipment during the transition period, and the means by which the NRC Staff plans to monitor the Applicants' commitments in this regard. Specifically, we call upon the Applicants and/or Staff, as appropriate, and other parties if they wish, to address the following subjects:

1. the general responsibilities during the transition period of HL&P, Bechtel and B&R with respect to the safety-related work specified in the October 16 letter;
2. the problem of assuring that adequate and competent construction and QA/QC personnel remain on the job or are brought to the job (as applicable) during the transition period;
3. the morale during the transition period of QA and QC personnel now employed by B&R, assuming either partial or full replacement of B&R;
4. the likelihood that problems related to safety and licenseability pointed out by the Quadrex report would (if they exist and to the extent they might affect transition-period construction as specified in the October 16 letter) be continued or even exacerbated during the transition period;
5. the conformance of the items of safety-related transition period construction activities (Attachment A to October 16, 1981 letter) to the criteria for performing transition period construction set forth in the body of the October 16 letter. In particular, footnote 1

to Attachment A suggests that six work items do not conform to criterion 2. In addition, based on issues raised in this proceeding and still not resolved, several work items appear not to conform with criterion 1;

6. the possible safety significance of transition work designated as non-safety-related (Attachment B to October 16, 1981 letter). In that connection, see Quadrex report; Section 3.1(d), vol. 1, pp. 3-5 and 3-6;
7. the degree to which the quality of safety-related work to be performed during the transition period can later be verified; and
8. the relative safety implications of (a) stopping all safety-related work and work which might affect safety-related structures or equipment; (b) continuation of only such transition work outlined in the letter dated October 16, 1981 as had already been commenced as of that date; or (c) continuation of work as proposed in the October 16, 1981 letter.

In posing these areas of inquiry for the short term, we wish to stress that we are concerned about the procedures to be followed by the Applicants and Staff to assure the quality of work on items described in the October 16 letter.

For such advice to be meaningful, it must be provided to us at an early date and, in any event, prior to the expiration of the transition period. We therefore are scheduling an evidentiary hearing to commence on Tuesday, December 8, 1981, in Austin, Texas, to consider these questions. We expect the hearing to conclude no later than Thursday, December 10, 1981, and earlier if possible.

To help meet this schedule, we invite (although we do not require) the parties (particularly the Applicants and Staff) to provide prepared testimony, which must be in our hands no later than Wednesday, November 25, 1981. Discovery on the limited issues involving construction during the transition period (which do not encompass the entire Quadrex report) may begin immediately and shall conclude no later than November 18, 1981. If interrogatories are used, they should be filed by November 6, 1981 and served either by personal service or by express mail. Responses must also be served in this fashion. We do not anticipate providing an opportunity in the short term for written proposed findings of fact and conclusions of law on transition-period construction, but we will accept oral statements of the parties' positions at the conclusion of the evidentiary sessions on this subject.² To the extent that the prehearing conference referred to in our Memorandum and Order of October 8, 1981 is needed, it will be held on December 8, immediately prior to this hearing.

² We will establish time limits for such statements after we ascertain the general positions to be taken by various parties during the evidentiary presentations.

The issues of what safety-related work should be continued during the transition period and the controls (if any) which NRC may exercise over such work are being considered by the Licensing Board because of the important safety significance of the questions, their bearing on the adequacy of construction of the facility, and the possibility that the quality of at least some of the safety-related work may not be able to be adequately verified after construction has been completed. Although these issues might be viewed as being raised by the Board *sua sponte*, their resolution is essential to provide an adequate record for us to rule on the broader QA matters which are before us. We are raising these questions solely in the context of our operating license authority, as enhanced by the Commission's broad instructions to us in CLI-80-32, 12 NRC 281 (1980), which pointed out that this operating license hearing could serve the goal of a "full airing of all relevant information regarding the safety of the nuclear plant". *Id.* at 290. In the Board's view, the adequacy of, and controls to be exercised over, safety-related transition work falls well within that grant of authority. In raising these issues, however, we recognize that the halt of some or all safety-related work during the transition period is a possible outcome and that there is some question of whether we possess stop-work authority. If we were to determine that a work stoppage in whole or in part were necessary, we would consider various means of effectuating that determination, including certification to the Commission.³

Because this Memorandum and Order raises issues which might be deemed to be raised *sua sponte* by the Board, we are transmitting copies to the Commission and to the General Counsel, in accordance with the Commission's instructions appearing in the Secretary's memorandum of

³ On October 29, 1981, we received copies of a CEU Petition to Suspend Construction (directed to the Commission) and a CEU Motion to Suspend Construction (directed to this Board). As we informed the parties by telephone on October 29, this Memorandum and Order, which encompasses some of the matters raised by CEU, has been under preparation since October 19, when we received the Applicants' October 16 letter, and in no way has been influenced by or is intended to respond to either of CEU's filings.

June 30, 1981 (subject: "Raising of Issues *Sua Sponte* in Adjudicatory Proceedings").⁴

For the foregoing reasons, it is, this 30th day of October, 1981

ORDERED

1. That an evidentiary hearing to consider the questions outlined herein will convene on December 8, 1981, in Austin, Texas, at Austin Public Library Auditorium, Fourth Floor, 800 Guadalupe, Austin, Texas 78701. The hearing will commence at 9:30 a.m. or, if a prehearing conference is held, immediately following the prehearing conference. (On December 8 and 9, the hearing will commence at 9:15 a.m.)

2. That discovery on these questions may commence immediately and shall conclude by November 18, 1981, and that interrogatories (if used) are to be governed by the standards set forth in this opinion.

3. That prepared testimony, if it is to be filed, shall be delivered to the Board by November 25, 1981.

4. That a prehearing conference, to the extent necessary, will be held immediately prior to the evidentiary hearing, at 9:30 a.m. on December 8, 1981.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Ernest E. Hill
ADMINISTRATIVE JUDGE

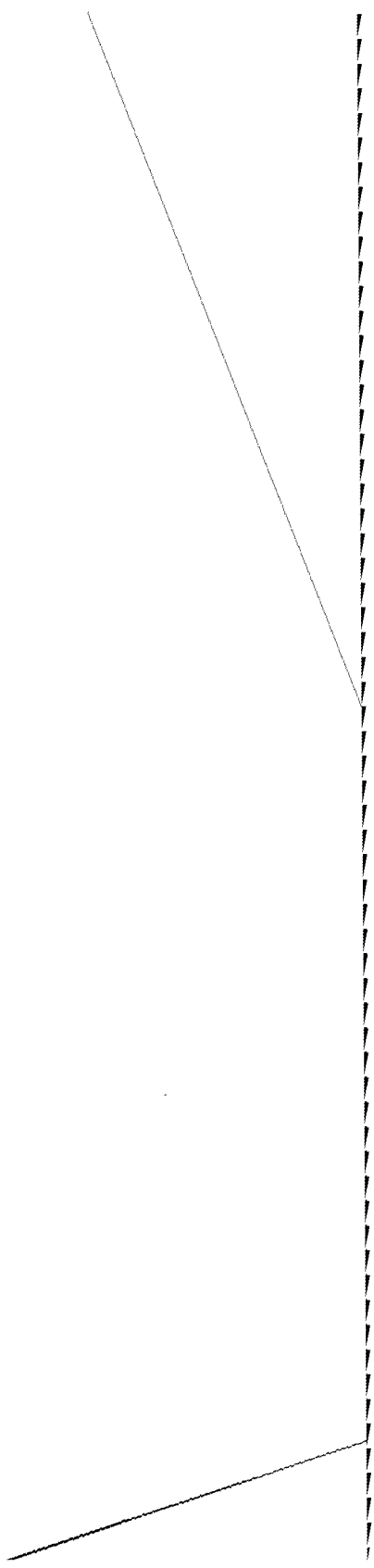
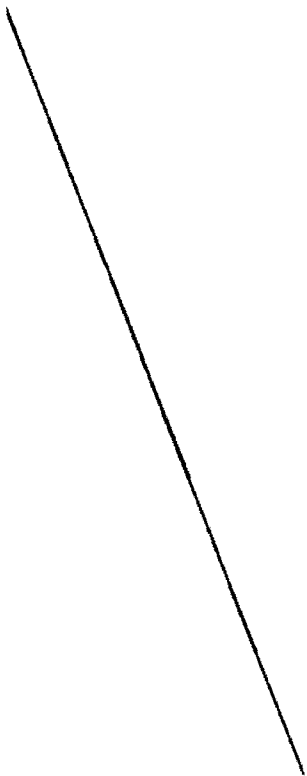
Dr. James C. Lamb
ADMINISTRATIVE JUDGE

Charles Bechhofer, Chairman
ADMINISTRATIVE JUDGE

Issued at Bethesda, Maryland.

⁴ In relevant part, that Memorandum provides: "When a Licensing Board * * * raises an issue *sua sponte* in an Operating License proceeding, it shall issue a separate order making the requisite findings, briefly state its reason for raising the issue; and it shall forward a copy of that order to the Office of the General Counsel and to the Commission * * *."

[T]he Boards shall continue to make the initial determination of whether a Board question is an exercise of *sua sponte* authority or a question asked to ensure the completeness of the record on an admitted contention. Furthermore, the fact that an issue has been raised *sua sponte*, and that the Commission will be advised of that action by the Office of the General Counsel through its monitoring of adjudicatory proceedings, would not provide a basis for any party to fail to meet its obligation to respond expeditiously to the Board's questions."



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of

**Docket Nos. 50-546
50-547
(10 C.F.R. 2.206)**

**WABASH VALLEY POWER ASSOCIATION
and
PUBLIC SERVICE COMPANY OF INDIANA
(Marble Hill Nuclear Generating
Station, Units 1 & 2)**

October 13, 1981

The Director of Nuclear Reactor Regulation denies a petition under 10 C.F.R. 2.206 which requested action against a co-owner of the Marble Hill project for securing additional financing for its participation in the project in an allegedly improper manner.

NRC: JURISDICTION.

Although decisions of other agencies may be relevant to the administration of the NRC's regulatory program, the Director of NRR will not institute proceedings to determine whether other agencies have carried out their own unique responsibilities.

LICENSE CONDITIONS

In the absence of a transfer of ownership or exercise of certain creditors' rights, the N.R.C.'s authorization need not be obtained in connection with financing arrangements a licensee may make with financial institutions.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES.

When a licensing proceeding has been concluded and a matter is no longer before a board, a licensee does not have a general duty to inform parties to the concluded proceeding of new information or developments regarding matters that were adjudicated in the proceeding.

RULES OF PRACTICE: PETITIONS UNDER 10 C.F.R. 2.206.

A petition under 10 C.F.R. 2.206 must allege facts that would indicate further inquiry into a matter raised in the petition is warranted.

DIRECTOR'S DECISION UNDER 10 C.F.R. 2.206

On September 8, 1981, Thomas M. Datillo, counsel for Save the Valley, submitted a petition to the Commissioners and the Director of NRR which requested institution of a proceeding with respect to the construction permits for the Marble Hill Nuclear Generating Station. Save the Valley alleges that the Rural Electrification Administration's recent extension of financing assistance to the Wabash Valley Power Association (WVPA) constituted an illegal amendment of the Marble Hill construction permits. Save the Valley's petition has been referred to the Director of NRR for consideration under 10 C.F.R. 2.206.

The WVPA, an association of 24 rural electric cooperatives, has a 17% ownership interest in the Marble Hill project. Both the WVPA and the lead applicant, Public Service Company of Indiana, were found financially qualified under 10 C.F.R. 50.33(f) before the construction permits for the Marble Hill project were issued.¹ The WVPA's financing of its ownership interest is based on long-term debt guaranteed by the Rural Electrification Administration (REA).² On June 8, 1981, the REA published a notice in the *Federal Register* (46 Fed. Reg. 31451) that it had prepared a "Finding of No Significant Impact" in connection with proposed financing

¹ *Public Service Co. of Indiana et al.* (Marble Hill Nuclear Generating Station, Units 1 & 2), LBP-77-67, 6 NRC 1101, 1115-16 (1977), LBP-78-12, 7 NRC 573, 576-77 (1978), *aff'd*, ALAB-493, 8 NRC 253 (1978).

² See LBP-77-67, *supra*, 6 NRC at 1115.

assistance to WVPA to continue its participation in the Marble Hill project and to purchase a certain transmission line. The notice states that the finding was made in accordance with the REA's procedures.

In its petition, Save the Valley complains that the WVPA failed to notify "the parties of record" in the proceedings on the Marble Hill permits that the WVPA had requested additional loan guarantees. Save the Valley contends that the WVPA's request, coupled with its approval by the REA, constitutes an unlawful amendment of the construction permits. This "amendment", Save the Valley argues, was made without notice and opportunity to be heard in contravention of *Sholly v. NRC*, No. 80-1656 (D.C. Cir. Nov. 19, 1980). On this basis, Save the Valley would have the Commission institute a proceeding to inquire into the WVPA's actions and, presumably, to take some sort of enforcement action against the WVPA.

Save the Valley's petition is wholly without merit. The petitioner's arguments reflect a misunderstanding of the jurisdictional responsibilities of the Nuclear Regulatory Commission and the regulatory requirements governing the Marble Hill permits. In the first instance, this Commission does not sit as a body to review decisions of the REA on matters within the REA's jurisdiction. If Save the Valley believes that the REA acted improperly in extending financing assistance to the WVPA and in finding that such action would have no significant impact, then Save the Valley should pursue whatever remedies are available before the REA or in the federal courts. While the decisions of sister agencies may be relevant to the administration of the Nuclear Regulatory Commission's regulatory program, I will not institute proceedings to determine whether other agencies have carried out their own unique responsibilities.³

Neither the WVPA's nor the REA's actions constitute an "amendment" of the Marble Hill construction permits. No condition of the permits or of the Commission's regulations require the WVPA to seek the NRC's permission before the WVPA obtains additional financing assistance to support its existing share of the Marble Hill project.⁴ Except in instances involving a transfer of ownership of an existing interest in a license or the

³ Cf. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), CLI-78-1, 7 NRC 1, 23-24 (1978) (NRC bound to accept EPA's prescription of cooling system); *Florida Power & Light Co.* (St. Lucie Plant, Unit 2), DD-81-15, 13 NRC 589, (Docket No. 50-389, August 7, 1981) (Director will defer to FERC's interpretation of its regulations and governing statute). It is worth noting that section 271 of the Atomic Energy Act, 42 U.S.C. 2018, provides "Nothing in this Act shall be construed to affect the authority of any Federal, State, or local agency with respect to the generation, sale, or transmission of electric power produced through the use of nuclear facilities licensed by the Commission."

⁴ Save the Valley indicates that the WVPA sought additional loan guarantees "to maintain its 17% undivided ownership in the plant". Petition at 2. Of course, 17% is the WVPA's *existing* share in the project. See LBP-77-67, *supra*, 6 NRC at 1115. Thus, the petition does not allege that there has been a transfer of ownership which would require the Commission's approval. See Atomic Energy Act § 184, 42 U.S.C. 2234; 10 C.F.R. 50.80.

exercise of certain creditors' rights, the Commission's authorization need not be obtained in connection with financing arrangements a licensee may make with private or governmental financing institutions.⁵ Under the Commission's current regime, an applicant for a construction permit or operating license must demonstrate in accordance with 10 C.F.R. 50.33(f) and Part 50, Appendix C, that it has "a reasonable financing plan in the light of relevant circumstances".⁶ As noted earlier in this decision, the Licensing Board found both Public Service Company of Indiana and the WVPA financially qualified before the Marble Hill construction permits were issued.⁷

Although the Commission may require a licensee to demonstrate that it remains financially qualified after a license has been issued, the issuance of a license amendment is not required each time an electric utility licensee seeks a new loan, issues new securities, or requests a rate increase. The financing of any undertaking is obviously a dynamic process. The licensee is generally free to adjust its financial plan to new economic conditions, a point that was discussed in an earlier decision under 10 C.F.R. 2.206:

Even after consideration of the fundamental underlying assumptions to a financial plan—a viable capital market, and for regulated utilities, the continuation of a rational regulatory environment—one can only view a financial plan to be one possible way by which a company's projected capital requirements, including those resulting from the construction of a facility, might reasonably be obtained. The inherent dynamics of both a company's individual finances and the state of the economy as a whole (and particularly its effect upon the electric utility industry) lead one to reasonably expect that a company's financial plans will change over time to accommodate required adjustments. These changes include revisions to the sources of funds, type of security issues (both publicly issued and privately placed), and the timing and amounts of its financing. This is where "relevant circumstances" (as discussed by the Commission in *Seabrook* come into play, in that they allow the company to depart from the proposed financial plan when reasonable, to conform to changing conditions.⁸

⁵ See Atomic Energy Act §184, 42 U.S.C. 2234; 10 C.F.R. 50.80 and 50.81.

⁶ *Public Service Co. of New Hampshire*, *supra*, 7 NRC at 18, *aff'd sub nom. New England Coalition on Nuclear Pollution v. NRC*, 582 F.2d 87 (1st Cir. 1978). It should be noted that the Commission is considering changes to its financial qualifications requirements. 46 Fed. Reg. 41786 (Aug. 18, 1981).

⁷ See note 1 *supra*.

⁸ *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 & 2), DD-79-20, 10 NRC 703, 706 (1979).

This description fits the case at hand. From the facts alleged by Save the Valley, it appears that the WVPA is taking steps to assure the financial viability of its participation in the Marble Hill project. Such adjustments may be expected as a licensee assesses new economic conditions. Save the Valley does not allege that the WVPA is transferring a portion of its 17% interest in the Marble Hill project. The WVPA's request for additional REA guarantees and the REA's actions did not require the Commission's approval and did not otherwise constitute an unlawful amendment to the construction permits.⁹

The Marble Hill construction permits contain a provision requiring the permittees to make a report under certain circumstances:

- G. The applicants are financially qualified to design and construct the proposed facility. However, the applicants are required to inform the Commission if the U.S. Rural Electrification Administration ever attempts to take any action, under color of authority of the loan contract, which the applicants deem to be at variance with Public Service Company of Indiana's technical judgment or any Commission regulations or requirements.

The Licensing Board included this condition in the construction permits "out of an abundance of caution" at the suggestion of the staff.¹⁰ The condition was intended as a stop-gap measure in the unlikely event that the REA ever took any action which interfered with the Public Service Company of Indiana's safety responsibility and technical judgment.¹¹ The REA's extension of further financing assistance to the WVPA does not raise in itself any inference that the REA has interfered with the health and safety responsibilities of either permittee. As discussed in the previous paragraph, the WVPA's request and the REA's approval are not actions requiring a license amendment and are not in themselves contrary to

⁹ Save the Valley's citation to the *Sholly* decision is inapposite. Even if *Sholly* is upheld by the Supreme Court, *Sholly* only requires an opportunity to be heard where there has been an amendment to a License. As discussed in the text of this decision, no "amendment" to the Marble Hill permits has occurred. If Save the Valley is complaining the REA improperly found that its actions had no significant environmental impact, then Save the Valley's complaint lies against the REA, not the NRC.

¹⁰LBP-78-12, *supra*, 7 NRC at 577.

¹¹ As the staff noted proposing the condition, it would be "sheer speculation" to suggest that the REA would take such actions. Letter from L. Brenner, Counsel for NRC staff, to Licensing Board (March 1, 1978). The Board had found that the proposed arrangements between the WVPA and Public Service Company of Indiana were "structured in a manner that gives PSI transcendent authority and responsibility with respect to the health and safety of the public." See LBP-77-67, *supra*, 6 NRC at 1117.

Commission requirements. Save the Valley makes no allegation that the REA has attempted to interfere by its actions with the Public Service Company of Indiana's technical judgment. If the REA were to attempt such interference, I would fully expect that the permittees, particularly Public Service Company of Indiana as the permittee primarily responsible to the Commission, would have reported the REA's actions to the Commission. Because Save the Valley has not alleged any such interference by the REA and because I am not aware of any information which would reasonably indicate such interference, I do not find that further inquiry into the REA's extension of financial assistance to the WVPA is warranted.¹²

Save the Valley is under the misimpression that the Commission's rules required the WVPA to give Save the Valley, as a party to the NRC's construction permit proceeding, notice of the request filed with the REA. The Appeal Board has required parties to "inform the presiding board and other parties of new information which is relevant and material to the matters being adjudicated" in a proceeding.¹³ This requirement applies only to *pending* proceedings in which no final action has been taken. The requirement is intended to assure that information relevant to matters under adjudication can be factored into the Board's decisionmaking. As Save the Valley and its counsel should be aware, there is *no* pending proceeding with respect to the financial qualifications of the Marble Hill permittees.¹⁴ An operating license proceeding has not been instituted for the Marble Hill station. Consequently, the WVPA had no duty to inform Save the Valley of the WVPA's request to the REA.

Save the Valley's petition does not indicate, much less allege, that the WVPA is financially unqualified to participate in the Marble Hill project. To the contrary, Save the Valley indicates that the WVPA has been able to obtain financing for its participation in the project. This case does not represent, therefore, an instance like *Seabrook* in which it would be

¹² See *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), CLI-78-7, 7 NRC 429, 432-34 (1978), *aff'd sub nom Porter County Chap. of the Izaak Walton League, Inc. v. NRC*, 606 F.2d 1363 (D.C. Cir. 1979).

¹³ *Duke Power Co.* (McGuire Nuclear Station, Units 1 & 2), ALAB-143, 6 AEC 623, 625 (1973).

¹⁴ See *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 & 2), ALAB-530, 9 NRC 261 (1979) in which the Appeal Board dismissed for lack of jurisdiction Save the Valley's motion to reopen the safety hearings after the Appeal Board's final decision affirming the issuance of the construction permits. At that time only the radon issue remained open in the Marble Hill construction permit proceeding.

appropriate, in response to a petition under 10 C.F.R. 2.206, to engage in a further inquiry into the permittees' current financial qualifications.¹⁵ The petitioner has not raised facts that would reasonably suggest further inquiry is warranted.¹⁶

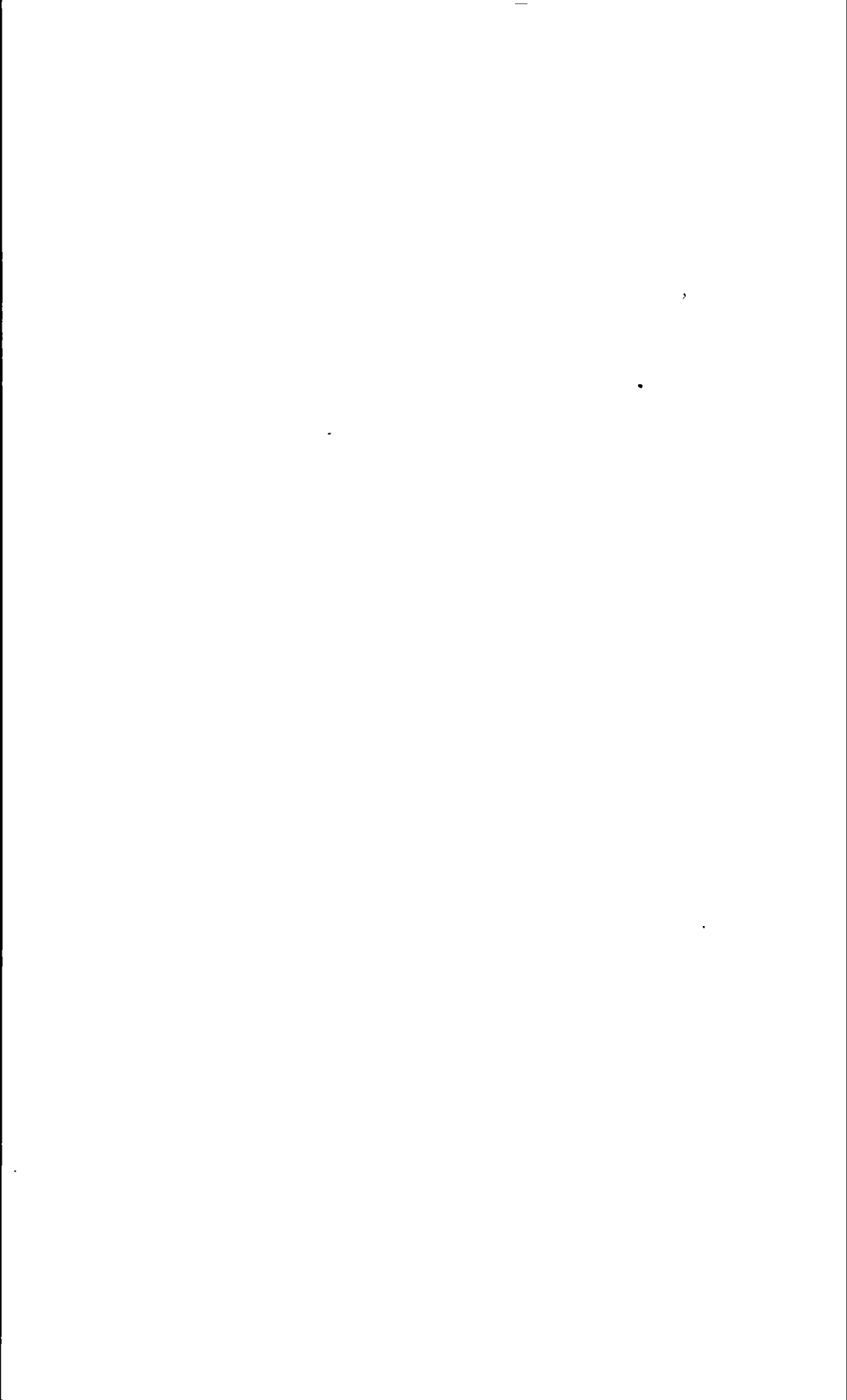
For the foregoing reasons, Save the Valley's petition is *denied*. A copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. 2.206(c). As provided in 10 C.F.R. 2.206(c), this decision will become the final action in this matter 25 days after issuance unless the Commission institutes review of the 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 October, 1981.

¹⁵S DD-79-20, 10 NRC 703 (1979).

¹⁶See *Northern Indiana Public Service Co.*, *supra*, 7 NRC at 432-34.



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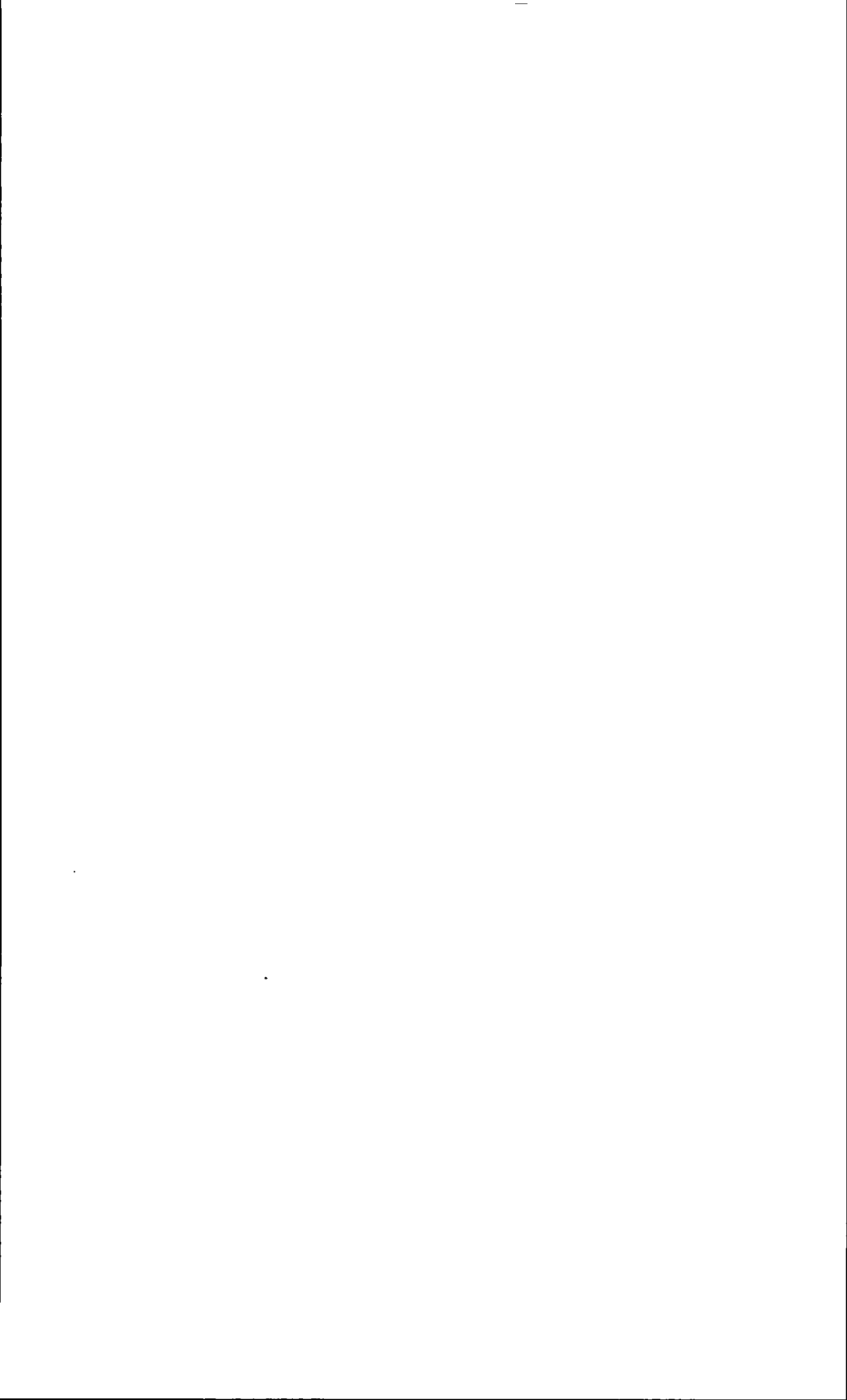
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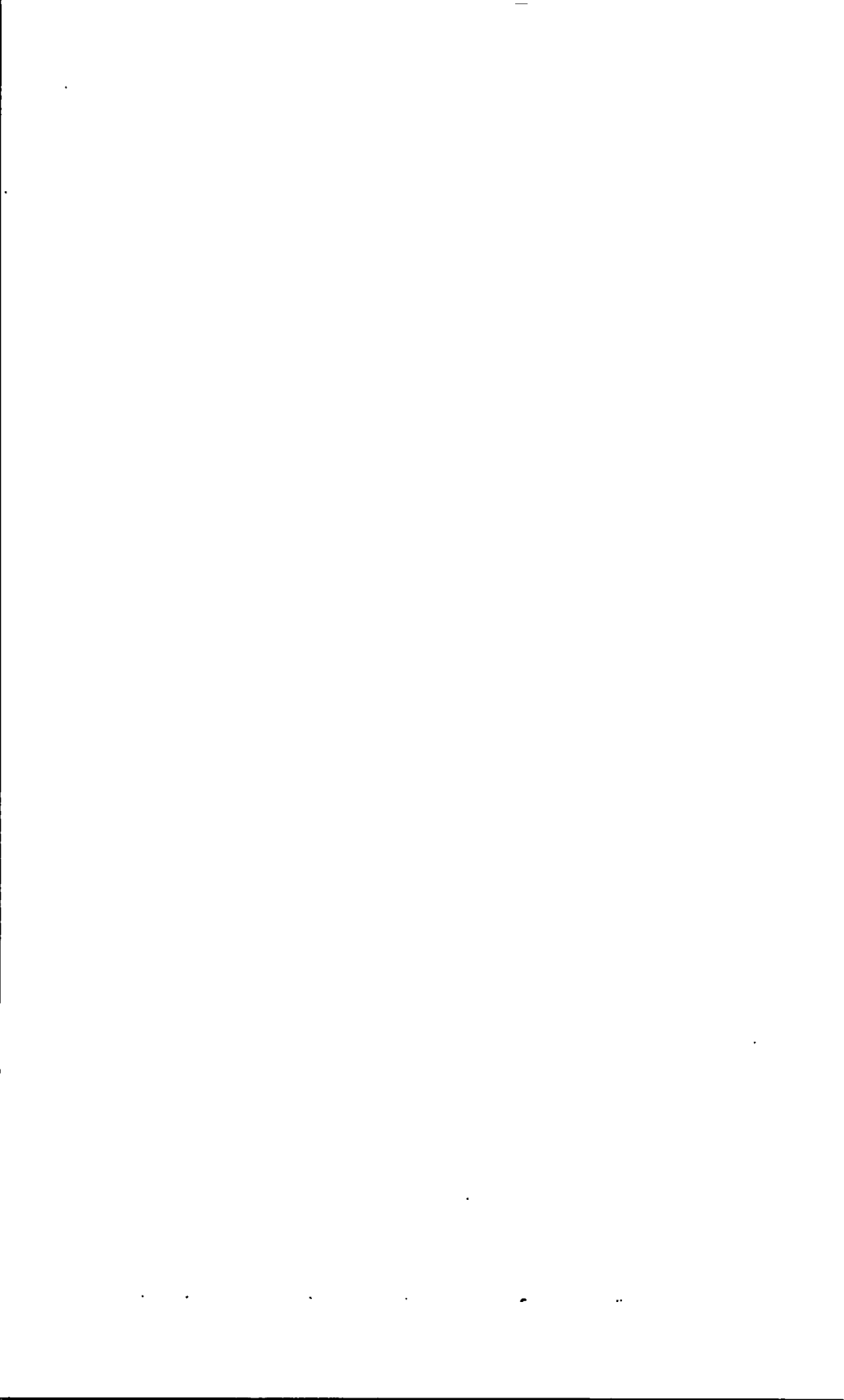
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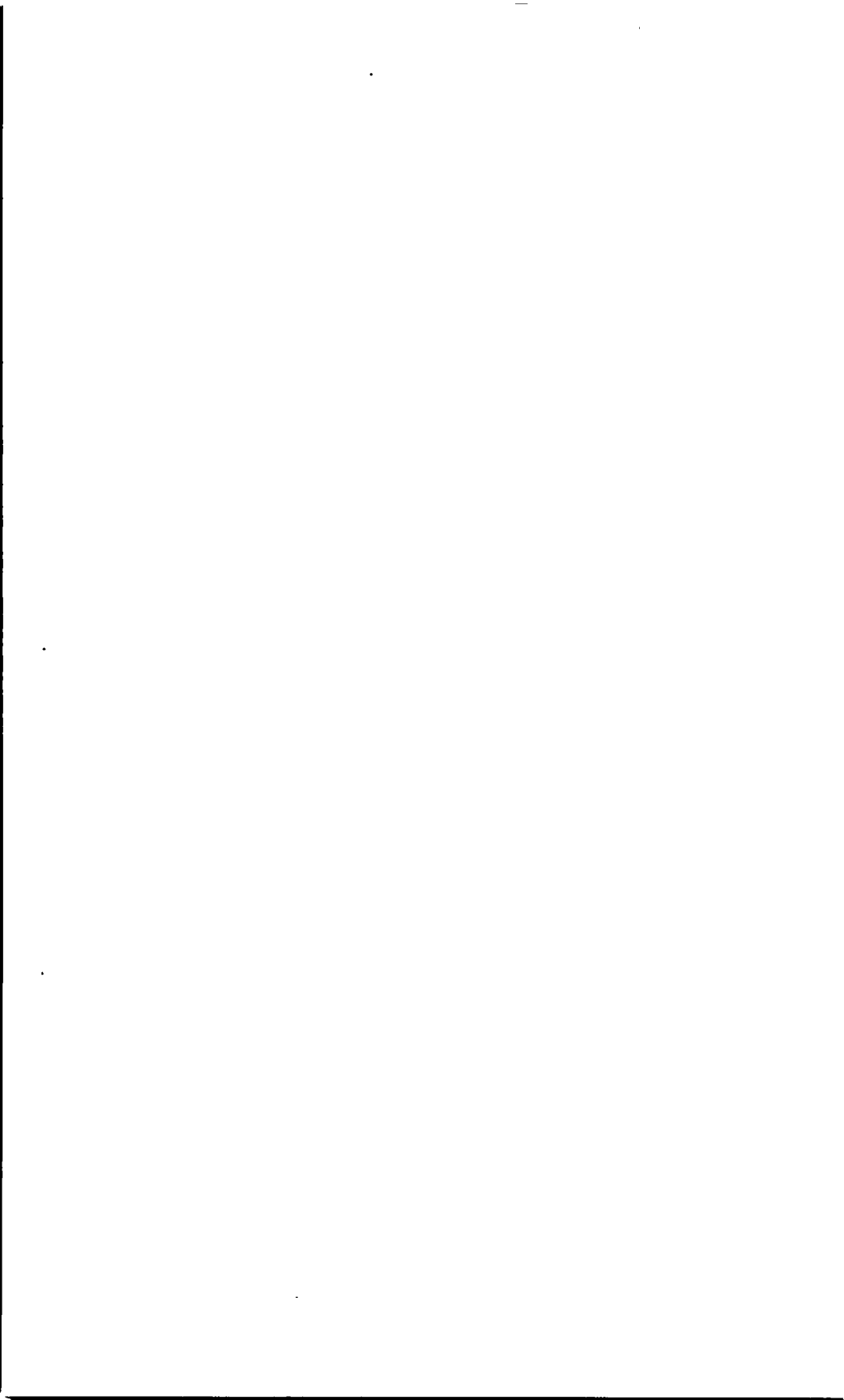
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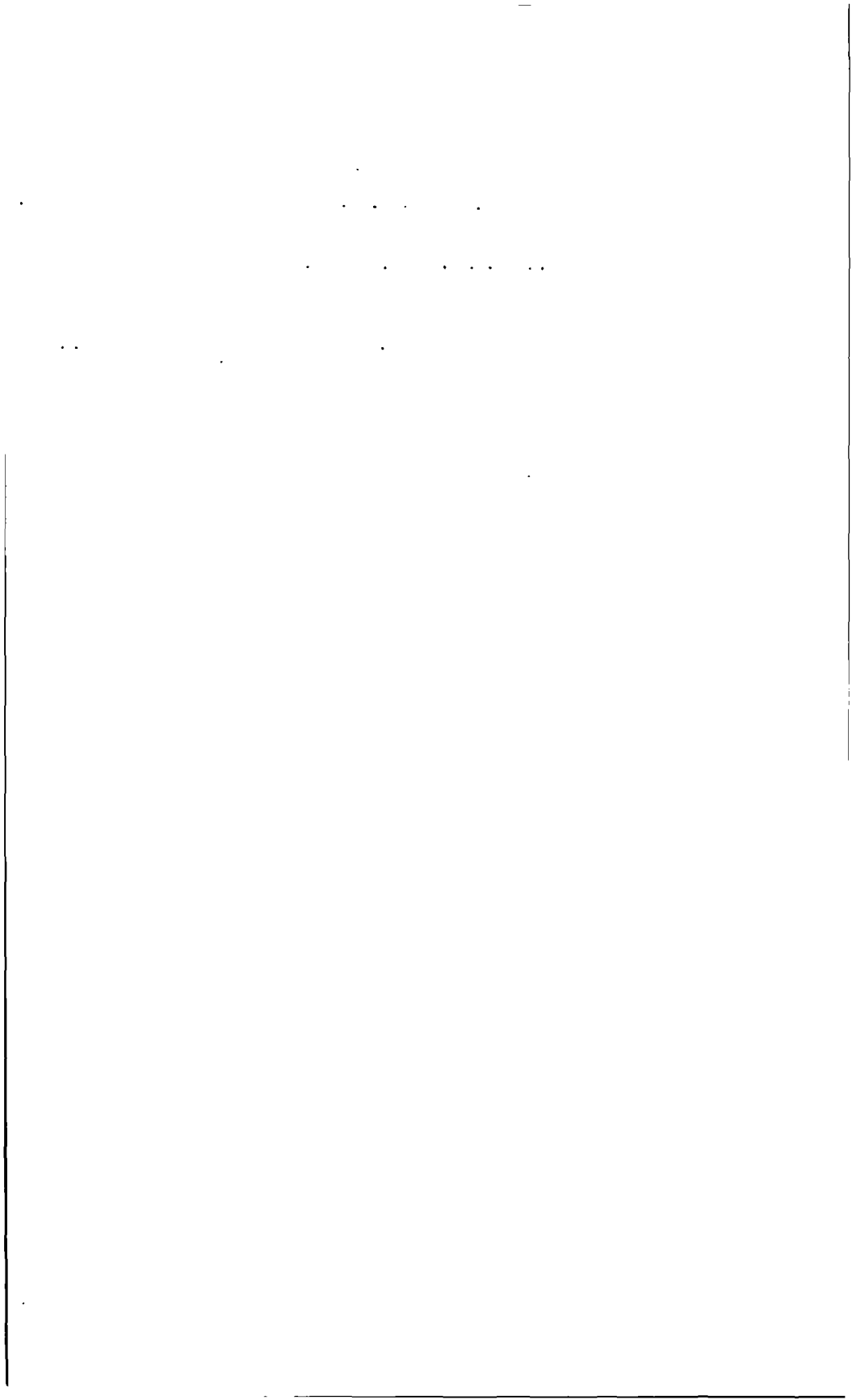
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